AIR QUALITY IMPACT ANALYSIS

Riverside-Corona Feeder Pipeline Realignment

Prepared For:

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December 12, 2008
Revised December 9, 2009
Revised April 30, 2010

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SECTION 1 – EXECUTIVE SUMMARY

INTRODUCTION

The following air quality assessment was prepared to evaluate whether the expected criteria air pollutant emissions generated as a result of construction and operation of the proposed project would exceed the South Coast Air Quality Management District's (SCAQMD) significance thresholds for air quality in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 et seq.). The methodology follows the "CEQA Air Quality Handbook" prepared by the South Coast Air Quality Management District (SCAQMD) for quantification of emissions and evaluation of potential impacts to air quality. As recommended by SCAQMD staff, the URBEMIS 2007 for Windows version 9.2.4 computer program (URBEMIS 2007) was used to quantify project-related emissions.

Project Description

The Riverside-Corona Feeder (RCF) Pipeline Realignment "project" is located in portions of unincorporated San Bernardino and Riverside Counties and the cites of San Bernardino, Colton, Rialto, and Riverside. The project is approximately 20.5 linear miles (108,000 linear feet) in length and is an alternative alignment proposed for a portion of the Riverside-Corona Feeder Project (2005 Project Alignment) that was approved in 2005 (**Figure 1, Project Location**). The completed project is to be located underground primarily within existing road rights-of-way.

The project is separated into two alignments referred to as the Northern Reach and the Central Reach and as four connections to other regional facilities (Central Feeder Connection, Clay Street Connection, Mockingbird Connection, and La Sierra Pipeline). For the purposes of this analysis, the Northern Reach and the Central Feeder Connection will be analyzed in a "programmatic" approach since project construction may not initiate for approximately 10 years. The Central Reach and the three remaining connections to other regional facilities will be analyzed at the "project-specific" level since construction could begin within the next two years and is projected to be completed by 2013.

The Northern Reach describes the pipeline from a San Bernardino Valley Municipal Water District's (SBVMWD) point of connection in Orange Show Road in the city of San Bernardino to SBVMWD Meter and Turnout located at the San Bernardino County/Riverside County border in Agua Mansa Road. The Northern Reach continues south to a Jurupa Community Services District (JCSD) point of connection at Clay Street and Limonite Avenue. The Central Reach continues south from a JCSD point of connection to its terminus at Jackson Street and Cleveland Avenue. The Central Reach also contains a Monroe Street alternate alignment for that portion of the reach in Jackson Street. The following is a more detailed description of each Reach.

Northern Reach – 12,000 linear feet of up to 78-inch diameter pipeline
The proposed Northern Reach will extend approximately 12,000 linear feet from near the intersection of Waterman Avenue and Orange Show Road in the city of San Bernardino,

traversing west in Orange Show Road/Auto Plaza Drive under the I-215 freeway, then south to Fairway Drive, west in Fairway Drive to Sperry Drive, and south in Sperry Drive to Valley Boulevard. Boring techniques will be utilized where the RCF is proposed to cross under Twin Creek Channel, I-215, and Warm Creek.

Northern Reach – 45,000 linear feet of up to 60-inch diameter pipeline
From the intersection of Valley Boulevard and Sperry Drive, the Northern Reach will continue west in Valley Boulevard to La Cadena Drive, and south in La Cadena Drive. The proposed alignment continues south along La Cadena Drive under I-10 to "N" Street, then west in "N" Street to South Rancho Avenue, south in South Rancho Avenue to Agua Mansa Road, then southwest in Agua Mansa Road to the SBVMWD meter and turnout (point of connection) located at the San Bernardino County/Riverside County border. The Northern Reach continues southwest in Agua Mansa Road from the SBVMWD point of connection to Market Street, west in Market Street to Rubidoux Boulevard, southwest in Rubidoux Boulevard to 30th Street, then northwest in 30th Street to Avalon Street. The alignment continues southwest along Avalon Street, under State Route 60, to Mission Boulevard. Boring techniques will be utilized where the RCF is proposed to cross under the Union Pacific rail lines south of Maple Court, Riverside Canal, Rialto channel, Union Pacific rail lines just east of Wilson Street, and State Route 60.

Northern Reach – 19,425 linear feet of up to 54-inch pipeline
The alignment then traverses west in Mission Boulevard from the intersection of Avalon Street to Riverview Drive/Limonite Avenue. It then traverses south in Riverside Drive/Limonite Avenue to 42nd Street and continues southwest along Limonite Avenue, then south in Clay Street to a JCSD point of connection. Boring techniques will be utilized where the RCF is proposed to cross under a flood control channel just east of Pacific Avenue.

Central Reach – 31,575 linear feet of up to 54-inch pipeline
The Central Reach continues south in Clay Street and crosses under the Santa Ana River near Van Buren Boulevard. South of the Santa Ana River, the alignment crosses under Van Buren Boulevard to Doolittle Avenue and then to Van Buren Boulevard and continues south in Van Buren Boulevard. The alignment then traverses southeast in Jackson Street, west in Diana Avenue to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment continues northeast in Indiana Avenue, then southeast in Jackson Street, and connects to the Original 2005 Project Alignment near the intersection of Jackson Street and Cleveland Street.

Central Reach Alternate Alignment
As an alternative to the Jackson Street portion of the realignment, the placement of a portion of the project within Monroe Street is also being considered at the request of the City of Riverside. The Monroe Street alignment would follow the above-described alignment from Van Buren Boulevard southeast in Jackson Street only to Colorado Avenue. At that point, the alignment will continue northeast in Colorado Avenue to Monroe Street, then southeast in Monroe Street, under the State Route 91, and continue to the intersection of Monroe Street and Cleveland Avenue. At that point, the alignment would continue southwest in Cleveland Avenue to connect with the Original 2005 Project Alignment at the intersection of Cleveland Avenue and Irving Street.

Central Feeder Connection
The Central Feeder Connection would connect new or existing groundwater production wells to be located within the San Bernardino Basin Area (exact locations not determined) into the SBVMWD's Central Feeder Pipeline; thereby providing additional means for transporting San Bernardino Groundwater Basin water through regional pipeline facilities that are connected to the RCF project. The Central Feeder Connection consists of approximately 6,350 linear feet of an up to 54-inch diameter pipeline located in the San Bernardino Avenue right-of-way between Alabama Street in unincorporated San Bernardino County and Webster Street in the city of Redlands.

Clay Street Connection
The Clay Street Connection is approximately 7,800 linear feet of pipeline, up to 48 inches in diameter, within unincorporated Riverside County; extending west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north in Pedley Road to 56th Street. This connection will allow the RCF project to connect to an existing Jurupa Community Services District (JCSD) waterline, in 56th Street. Through this connection, the RCF project will be able to connect to JCSD's system, to tie into the Chino Desalter Phase 3 expansion, and to facilitate the connection of WMWD facilities to those that are a part of the Chino Basin Dry-Year Yield Program. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction.

Mockingbird Connection
The Mockingbird Connection consists of approximately 5,900 linear feet of pipeline, up to 42 inches in diameter, located within street rights-of-way, and within pipeline easements within the city of Riverside and adjacent to unincorporated Riverside County, a five million-gallon reservoir and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station. The pump station will include pumps and flow control facilities to convey water in either direction.

La Sierra Pipeline
The La Sierra Pipeline is approximately 10,800 linear feet of up to 42-inch diameter pipeline located within the La Sierra Avenue right-of-way in unincorporated Riverside County. The La Sierra Pipeline would extend south from the intersection of La Sierra Avenue and Cleveland Avenue to connect to the existing Mills Gravity Pipeline, located at the intersection of La Sierra Avenue and El Sobrante Road. This pipeline would provide an additional connection between Reach F of the RCF project and the Mills Gravity Pipeline.

The majority of the project will be constructed utilizing traditional trenching techniques. Segments of the feeder that will not be installed utilizing trenching techniques include the Santa Ana River crossing, under busy roadways, under rail crossings, under drainages, and under other sensitive areas. Traditional boring techniques or micro-tunneling are proposed to install the

project under the Santa Ana River and at all of the other locations described in detail in the assumptions listed in Section 2. The proposed pipeline will be constructed using 40-foot long pipe sections.

Recommended Mitigation Measures

In addition to compliance with SCAQMD Rule 403 (see page 13) for project construction, the following mitigation measures shall be implemented:

MM Air 1: Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction sites and provide temporary traffic control (i.e. flag person) during earthen material transport and other construction-related truck hauling activities.

MM Air 2: During construction of the proposed improvements one of the following options must be used to supply the power needs for boring/tunneling operations: 1) use natural gas fueled generator sets; 2) use low emission, duel fueled generator sets; or 3) prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to provide temporary construction power at the boring/tunneling sites.

MM Air 3: During construction of the proposed improvements, all mobile and stationary construction equipment will be properly maintained at an off-site location including proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site for the complete duration of construction.

MM Air 4: To reduce fugitive dust emissions, the contractor shall provide the District with sufficient proof of compliance with Rule 403 and other dust control measures including, but not limited to:

- requiring the application of non-toxic soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 20 days or more, assuming no rain),
- requiring all trucks hauling dirt, sand, soil, or other loose materials are to be covered or must maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code.
- suspending all excavating and grading operations when wind gusts (as instantaneous gust) exceed 25 miles per hour over a 30-minute period,
- post contact information outside the property for the public to call if specific air quality issues arise,
- use SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks when sweeping streets to remove visible soil materials, replace ground cover in disturbed areas as quickly as possible.

Conclusions

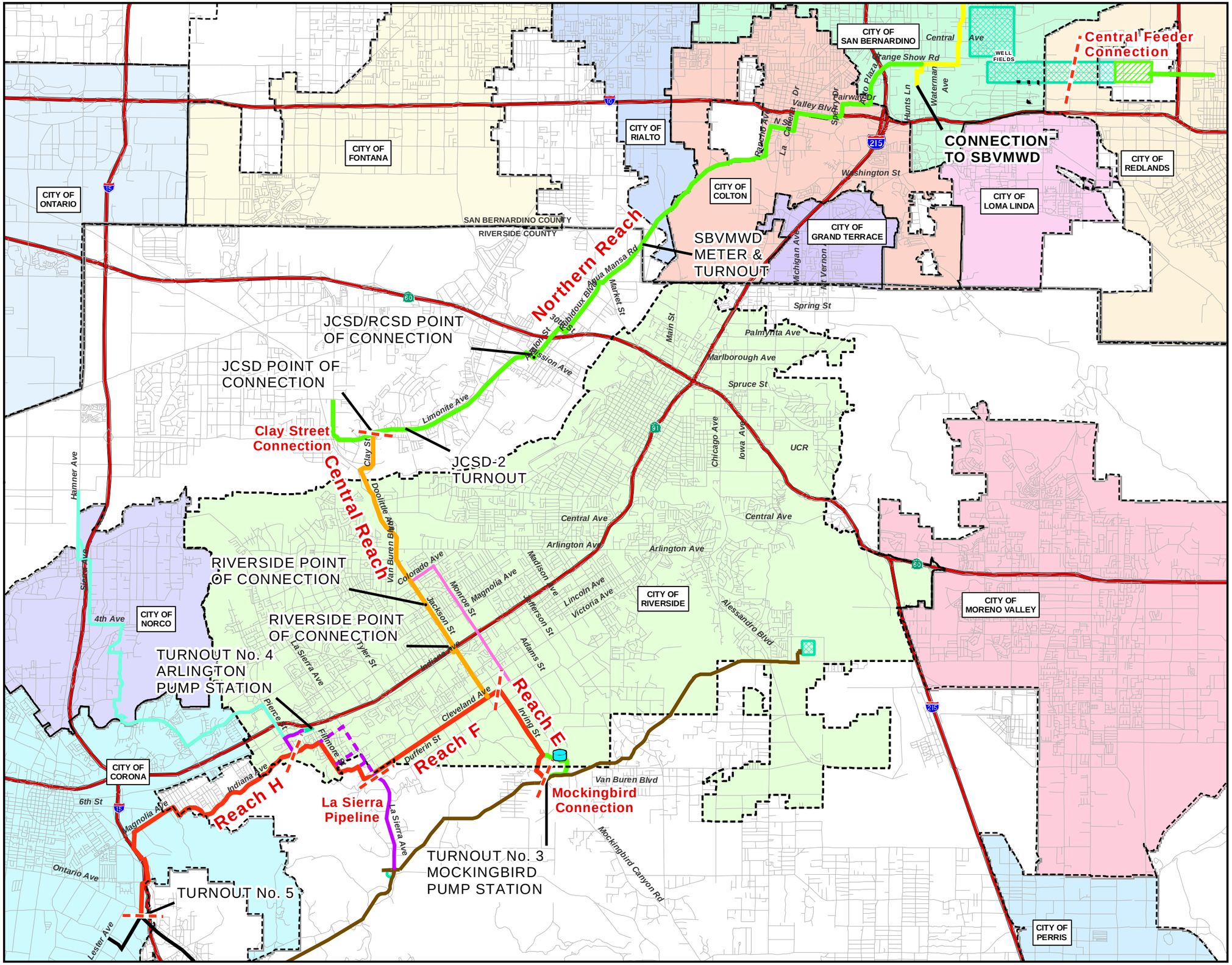
The project-specific evaluation presented in the proceeding analysis demonstrates that, even with the incorporation of mitigation measures, projected short-term emissions from construction are above applicable SCAQMD daily regional thresholds for one or more pollutants when each construction method or facility is evaluated individually or under the expected concurrent construction schedule. Additionally, short-term emissions from NO_X, PM-10, and PM-2.5 will exceed SCAQMD's localized significance thresholds.

The long-term operation of the project will not exceed the daily regional thresholds set by SCAQMD, as previously evaluated in the 2005 Certified Program EIR. Additionally, no long-term localized significance threshold is necessary**.**

The project's construction-related activities will result in an estimated total of 4,059 $MtCO_2$ emissions in a given year and the operational emissions from the pump stations and wells will be approximately 14,074 $MtCO_2$/year.

Figure 1

Project Location



LEGEND

- R-C Feeder - Northern Reach
- R-C Feeder - Central Reach
- RC Feeder Monroe Alternative
- R-C Feeder Alignment (to Remain) (Reaches E - H)
- SBVMWD Pipeline (Existing)
- Arlington Desalter Pipeline (Primarily Existing)
- La Sierra Pipeline (Not Constructed/Not a Part)
- R-C Feeder - La Sierra Pipeline Alternative Alignments
- Mills Pipeline (Existing)
- EVMWD Pipeline (Existing)
- Freeway
- Roads
- City Boundaries
- County Line

ALBERT A. WEBB ASSOCIATES

0 5,000 10,000 15,000 Feet

Map revised Oct. 29, 2009. G:\2007\07-0377\Gis\AIR_prop_alignment.mxd

SECTION 2 – EMISSIONS ESTIMATES

BACKGROUND

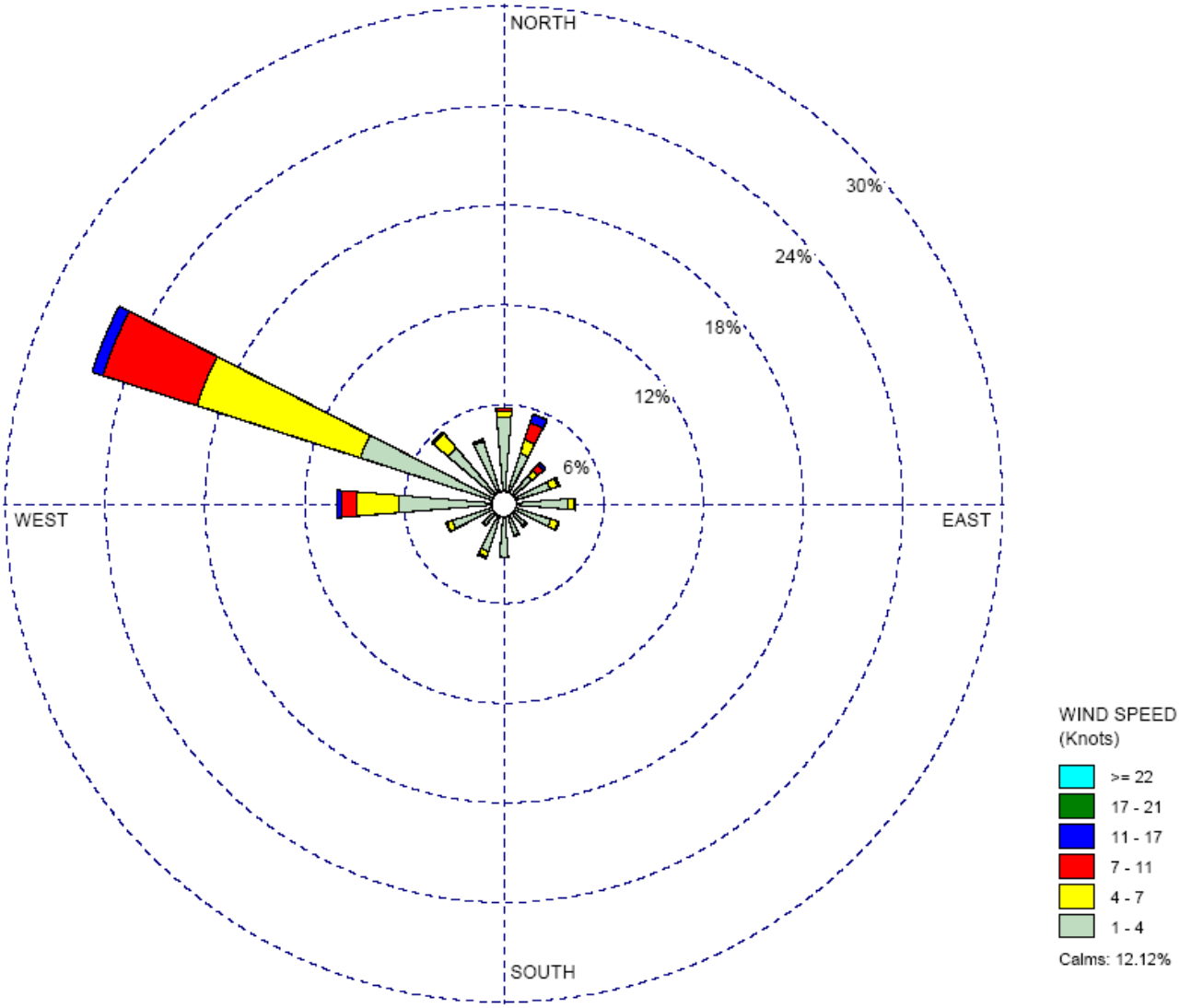
Air quality impacts can be described in a short-term and long-term perspective. Short-term impacts will occur during site grading and project construction. Long-term air quality impacts will occur once the project is in operation.

Many air quality impacts from dispersed mobile sources (cars and trucks), i.e., the dominant pollution generators from the proposed project, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual source is generally immeasurably small. The SCAQMD has therefore developed suggested surrogate significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. Air quality impacts can be analyzed on a regional and localized level. Regional air quality thresholds examine the effect of project emissions on the air quality of the Basin, while localized air quality impacts examine the effect of project emissions on the neighborhood around the project site. This report contains analysis of both regional and local air quality impacts from project construction (short-term) and operation (long-term).

The entire project area is located within the South Coast Air Basin (Basin), under the jurisdiction of the South Coast Air Quality Management District. The Basin consists of Orange County, together with the coastal and mountain portions of Los Angeles, Riverside, and San Bernardino counties. Regionally, the interaction of land (offshore) and sea (onshore) breezes control local wind patterns in the area. Daytime winds typically flow from the coast to the inland areas, while this pattern usually reverses in the evenings, flowing from the inland areas to the ocean (SCAQMD 1993). Air stagnation may occur during the early evening and early morning due to periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. Locally, the prevailing wind is generally from west to east (**Figure 2, Wind Rose**).

Regional and local air quality within the Basin is affected by topography, atmospheric inversions, and dominant onshore flows. Topographic features such as the San Gabriel and San Bernardino Mountains form natural barriers to the dispersion of air contaminants. The presence of atmospheric inversions limits the vertical dispersion of air pollutants. Due to expansional cooling, the temperature usually decreases with increasing altitude. However, at some elevation, this trend reverses and temperature begins to increase as altitude increases, this transition establishes the effective mixing height of the atmosphere and acts as a barrier to vertical dispersion of pollutants. A dominant onshore flow provides the driving mechanism for both air pollution transport and pollutant dispersion.

Riverside, California – 1981
January 1-December 31; Midnight-11PM



Note: Data taken from Monitoring Station No. 54139 in Riverside, California, between January 1 and December 31, 1981.
Calm winds: 12.12%. Direction of the colored bars show the direction the wind is blowing from, colors represent various wind speeds, and percentages marked on rings indicate the percentage that the wind blows from that direction and at that particular wind speed.

Figure 2, Wind Rose

Riverside-Corona Feeder Pipeline Realignment
Riverside, California

Air pollution generated in coastal areas is transported east to inland receptors by the onshore flow during the daytime until a natural barrier (the mountains) is reached, limiting the horizontal dispersion of pollutants. This results in a gradual degradation of air quality from coastal areas to inland areas, which is most evident with photochemical pollutants like ozone. The greatest ozone levels are registered at the South Coast Air Quality Management District's monitoring stations located at the base of the San Gabriel and San Bernardino mountains, ranging from the city of Santa Clarita, east to the city of San Bernardino.

The entire project area is located within SCAQMD Source Receptor Area (SRA) 23 and SRA 34. SRA 23 encompasses the Riverside County portion of the Northern and Central Reach while SRA 34 encompasses the portion of the North Reach within San Bernardino County. The most recent published data for SRA 23 and SRA 34 are presented in **Table 1, Source Receptor Area (SRA) 23), Air Quality Monitoring Summary–1998-2007** and **Table 2, Source Receptor Area (SRA) 34), Air Quality Monitoring Summary–1998-2007**. This data indicates that the baseline air quality conditions in the project area include occasional events of very unhealthful air. However, the frequency of smog alerts has dropped significantly in the last decade. Atmospheric concentrations of ozone and particulate matter are the two most significant air quality concerns in the project area. The yearly monitoring records document that prior to 1998, approximately one-third or more of the days each year experienced a violation of the state hourly ozone standard, with around ten days annually reaching first stage alert levels of 0.20 parts per million (ppm) for one hour. It is encouraging to note that ozone levels have decreased in the last few years with approximately one-fourth or less days each year experiencing a violation of the state hourly ozone standard since 1998. Locally, no second stage alert (0.35 ppm/hour) has been called by SCAQMD in the last twenty years. In fact, the last second stage alert was in 1988 in Upland.

The California Air Resources Board (CARB) established a new 8-hour average California Ozone standard of 0.07 ppm, effective May 17, 2006. The federal 1-hour ozone standard was revoked and replaced by the 8-hour average ozone standard of 0.08 ppm effective in June 2005. The federal 8-hour ozone standard was recently revised from 0.08 ppm to 0.075 ppm and became effective on May 27, 2008.

The California NO_2 standards were amended and lowered the 1-hour standard from 0.25 ppm to 0.18 ppm and established a new annual standard of 0.030 ppm effective on March 20, 2008.

Monitoring for PM-2.5 did not begin until 1999. Since then, the annual standard has been consistently exceeded as shown in **Table 1** and **Table 2**. The 1997 federal annual average standard for PM-2.5 (15 $\mu g/m^3$) was upheld by the U.S. Supreme Court in February 2001. Effective in December 2006, the federal 24-hour PM-2.5 standard was revised from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. The state annual average standard for PM-2.5 (12 $\mu g/m^3$) was finalized in 2003 and became effective on July 5, 2003. Additionally, the federal annual PM-10 standard was revoked in December 2006.

Table 1, Source Receptor Area (SRA) 23, Air Quality Monitoring Summary - 1998-2007

	Pollutant/Standard Source: SCAQMD	Monitoring Year									
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. Days Exceeded	**Ozone:**										
	Health Advisory - 0.15 ppm	--	--	--	0	1	4	0	0	1	0
	California Standard:										
	1-Hour - 0.09 ppm	70	38	41	41	56	80	59	46	45	31
	8-Hour - 0.070 ppm [a]	--	--	--	--	--	--	75	62	59	69
	Federal Primary Standards:										
	1-Hour - 0.12 ppm	32	3	3	7	12	18	8	3	8	2
	8-Hour - 0.08 ppm (0.075 ppm)[a]	57	27	29	34	38	62	35	33	30	15(46)
	Max 1-Hour Conc. (ppm)	0.20	0.14	0.14	0.143	0.155	0.169	0.141	0.144	0.15	0.131
	Max 8-Hour Conc. (ppm)	0.17	0.11	0.113	0.120	0.124	0.140	0.117	0.129	0.116	0.111
No. Days Exceeded	**Carbon Monoxide:**										
	California Standard:										
	1-Hour - 20 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	1-Hour - 35 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Max 1-Hour Conc. (ppm)	6.0	7.0	5.0	5.0	8.0	5	4	3	3	4
	Max 8-Hour Conc. (ppm)	4.6	4.4	4.3	3.4	3.0	3.7	3.0	2.5	2.1	2.9
No. Days Exceeded	**Nitrogen Dioxide:**										
	California Standard:										
	1-Hour - 0.18 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Standard:										
	Annual Arithmetic Mean (ppm) [b]	0.023	0.026	0.024	0.025	0.024	0.022	0.017	0.022	0.020	0.021
	Max. 1-Hour Conc. (ppm)	0.10	0.13	0.10	0.15	0.10	0.09	0.09	0.08	0.08	0.07
No. Days Exceeded	**Sulfur Dioxide:**										
	California Standards:										
	1-Hour – 0.25 ppm	0	0	0	0	0	0	0	0	0	0
	24-Hour – 0.04 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	24-Hour – 0.14 ppm	0	0	0	0	0	0	0	0	0	0
	Annual Standard – 0.03 ppm [c]	No	No	No	No	No	No	No	No	No	No
	Max. 1-Hour Conc. (ppm)	0.03	0.03	0.11	0.02	0.02	0.02	0.02	0.02	0.01	0.02
	Max. 24-Hour Conc. (ppm)	0.010	0.011	0.041	0.011	0.002	0.012	0.015	0.011	0.004	0.002
No. Days Exceeded	**Suspended Particulates (PM10):**										
	California Standards:										
	24-Hour - 50 $\mu g/m^3$	42	46	68	78	81	62	72	69	71	66
	Federal Primary Standards:										
	24-Hour – 150 $\mu g/m^3$	0	1	0	0	0	2	0	0	0	0
	Annual Arithmetic Mean ($\mu g/m^3$) [d]	58.2	72.3	60.1	63.1	58.5	56.9	55.5	52.0	54.4	54.7
	Max. 24-Hour Conc. ($\mu g/m^3$)	116	153	139	136	130	164	137	123	109	118
No. Days Exceeded	**Suspended Particulates (PM2.5):**										
	California & Federal Primary Standards:										
	24-Hour – 65 $\mu g/m^3$ (35$\mu g/m^3$) [e]	--	9	11	19	8	8	5	4	1(32)	3(33)
	Annual Arithmetic Mean ($\mu g/m^3$) [f]	--	30.9	28.2	31.3	27.5	24.9	22.1	21.0	19.0	19.1
	Max. 24-Hour Conc. ($\mu g/m^3$)	--	111.2	119.6	98.0	77.6	104.3	91.7	98.7	68.5	75.7

Note: -- No data available.

a. 2004 is first year of SCAQMD records for state 8-hour Ozone standard. Federal 8-hour ozone standard 0.075 ppm effective May 27, 2008.

b. Federal NO_2 standard is AAM > 0.053; State NO_2 standard of AAM > 0.030 effective March 20, 2008.

c. Yes or No indicating whether or not the standard has been exceeded for that year.

d. Federal PM-10 standard is AAM> 50$\mu g/m^3$ was revoked December 17, 2006. State standard is AAM> 20$\mu g/m^3$, effective July 5, 2003.

e. 1999 is first year of SCAQMD records for federal 24-hour PM-2.5 standard and data summary. Threshold changed to 35$\mu g/m^3$ in 2006.

f. Federal PM-2.5 standard is annual average (AAM) > 15$\mu g/m^3$. State standard is annual average (AAM) > 12$\mu g/m$

Table 2, Source Receptor Area (SRA) 34, Air Quality Monitoring Summary - 1998-2007

	Pollutant/Standard Source: SCAQMD	Monitoring Year									
		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. Days Exceeded	**Ozone:**										
	Health Advisory - 0.15 ppm	--	--	--	5	1	4	1	4	3	1
	California Standard:										
	1-Hour - 0.09 ppm	85	45	48	55	43	59	55	54	52	48
	8-Hour - 0.07 ppm [a]	--	--	--	--	--	--	58	58	57	74
	Federal Primary Standards:										
	1-Hour - 0.12 ppm	39	14	7	18	6	19	9	9	10	8
	8-Hour - 0.08 ppm (0.075 ppm)[a]	50	31	27	39	30	45	38	31	29	24(51)
	Max 1-Hour Conc. (ppm)	0.21	0.16	0.15	0.184	0.147	0.160	0.157	0.163	0.15	0.153
	Max 8-Hour Conc. (ppm)	0.18	0.13	0.125	0.144	0.113	0.137	0.130	0.129	0.127	0.121
No. Days Exceeded	**Carbon Monoxide:**										
	California Standard:										
	1-Hour - 20 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	1-Hour - 35 ppm	0	0	0	0	0	0	0	0	0	0
	8-Hour - 9.0 ppm	0	0	0	0	0	0	0	0	0	0
	Max 1-Hour Conc. (ppm)	6	5	5	4	5	5	4	4	3	4
	Max 8-Hour Conc. (ppm)	4.8	4.0	4.3	3.25	3.3	4.6	3.3	2.4	2.3	2.3
No. Days Exceeded	**Nitrogen Dioxide:**										
	California Standard:										
	1-Hour - 0.18 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Standard:										
	Annual Arithmetic Mean (ppm) [b]	0.034	0.036	0.033	0.030	0.029	0.027	0.026	0.026	0.025	0.025
	Max. 1-Hour Conc. (ppm)	0.11	0.14	0.10	0.11	0.11	0.10	0.12	0.08	0.09	0.08
No. Days Exceeded	**Sulfur Dioxide:[c]**										
	California Standards:										
	1-Hour – 0.25 ppm	0	0	0	0	0	0	0	0	0	0
	24-Hour – 0.04 ppm	0	0	0	0	0	0	0	0	0	0
	Federal Primary Standards:										
	24-Hour – 0.14 ppm	0	0	0	0	0	0	0	0	0	0
	Annual Standard – 0.03 ppm [d]	No	No	No	No	No	No	No	No	No	No
	Max. 1-Hour Conc. (ppm)	0.02	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.01	0.01
	Max. 24-Hour Conc. (ppm)	0.010	0.010	0.010	0.010	0.010	0.004	0.006	0.004	0.003	0.004
No. Days Exceeded	**Suspended Particulates (PM10):**										
	California Standards:										
	24-Hour - 50 μg/m^3	22	33	32	31	33	23	28	23	24	28
	Federal Primary Standards:										
	24-Hour – 150 μg/m^3	0	0	0	0	0	0	0	0	0	0
	Annual Arithmetic Mean (μg/m^3) [e]	48.3	56.5	50.1	52	50.4	44.9	48.6	42.3	46.0	51.4
	Max. 24-Hour Conc. (μg/m^3)	114	134	108	106	94	98	118	72	92	136
No. Days Exceeded	**Suspended Particulates (PM2.5):**										
	California & Federal Primary Standards:										
	24-Hour – 65 μg/m^3 (35μg/m^3) [f]	--	4	3	5	3	1	4	1	0(8)	3(11)
	Annual Arithmetic Mean (μg/m^3) [g]	--	25.7	25.4	26.2	25.7	22.2	22.0	17.4	17.8	18.3
	Max. 24-Hour Conc. (μg/m^3)	--	121.5	89.8	78.5	82.1	73.9	93.4	106.3	55.0	72.1

Note: -- No data available.

a. 2004 is first year of SCAQMD records for state 8-hour Ozone standard. Federal 8-hour ozone standard 0.075 ppm effective May 27, 2008.

b. Federal NO_2 standard is AAM > 0.053; State NO_2 standard of AAM > 0.030 effective March 20, 2008.

c. Central San Bernardino Valley 1 air monitoring station (SRA 34) data summaries used.

d. Yes or No indicating whether or not the standard has been exceeded for that year.

e. Federal PM-10 standard is AAM> 50μg/m^3 was revoked December 17, 2006. State standard is AAM> 20μg/m^3, effective July 5, 2003.

f. 1999 is first year of SCAQMD records for federal 24-hour PM-2.5 standard and data summary. Threshold changed to 35μg/m^3 in 2006.

g. Federal PM-2.5 standard is annual average (AAM) > 15μg/m^3. State standard is annual average (AAM) > 12μg/m

REGULATORY SETTING

The federal and California ambient air quality standards (AAQS) establish the context for the local air quality management plans (AQMP) and for determination of the significance of a project's contribution to local or regional pollutant concentrations. The California and federal AAQS are presented in **Table 1** and **Table 2**. The AAQS represent the level of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other diseases or illness and persons engaged in strenuous work or exercise, all referred to as “sensitive receptors”. SCAQMD defines a "sensitive receptor" as a land use or facility such as residences, schools, child care centers, athletic facilities, playgrounds, retirement homes, and convalescent homes.

Both federal and state Clean Air Acts require that each non-attainment area prepare a plan to reduce air pollution to healthful levels. The 1988 California Clean Air Act and the 1990 amendments to the federal Clean Air Act (CAA) established new planning requirements and deadlines for attainment of the air quality standards within specified time frames which are contained in the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised, and approved over the past decade. The currently adopted clean air plan for the basin is the 1999 SIP Amendment, approved by the U.S. Environmental Protection Agency (EPA) in 2000.

The Air Quality Management Plan (AQMP) for the Basin establishes a program of rules and regulations directed at attainment of the state and national air quality standards. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections. The SCAQMD adopted an updated AQMP in June 2007 which outlines the air pollution measures needed to meet federal health-based standards for particulates (PM-2.5) by 2014 and for ozone by 2023 (SCAQMD 2007). The AQMP was forwarded to the California Air Resources Board (CARB) for review and approved on September 27, 2007. It was sent to the EPA for its final approval and to be included as a revision to California’s SIP on November 16, 2007.

The CARB maintains records as to the attainment status of air basins throughout the state, under both state and federal criteria. The portion of the Basin within which the proposed project is located is designated as a non-attainment area for ozone, PM-10, and PM-2.5 under both state and federal standards.

REGIONAL SIGNIFICANCE THRESHOLD ANALYSIS

The thresholds contained in the SCAQMD CEQA Air Quality Handbook are considered regional thresholds and are shown in **Table 3**. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

Table 3, SCAQMD CEQA Regional Significance Thresholds

Emission Threshold	Units	VOC	NO_X	CO	SO_X	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operations	lbs/day	55	55	550	150	150	55

Short-Term Analysis

Short-term emissions consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Short-term impacts will also include emissions generated during construction as a result of operation of personal vehicles by construction workers and asphalt degassing.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent, stabilizing, ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size and nature of the project, a Fugitive Dust Control Plan or Large Operation Notification would not be required.

Short-term emissions were evaluated using the URBEMIS 2007 for Windows version 9.2.4 computer program. The model evaluated emissions resulting from site grading and construction. The construction is expected to begin no earlier than January 2010. The default parameters within URBEMIS were used and these default values reflect a worst-case scenario, which means that project emissions are expected to be equal to or less than the estimated construction emissions. In addition to the default values used, several assumptions relevant to model inputs for short-term construction emission estimates are included below and in Appendix A:

The construction scenarios modeled below were chosen for analysis based on worst-case conditions. The construction period for the project is anticipated to be built in phases beginning within the next two years with the last phase potentially being started over ten years from project initiation. The portions of the project that are anticipated to be constructed concurrently within the next two years include: 1) Reaches E, F, and G 2008 Refinement of the 2005 Project Alignment (analyzed in the Reaches E, F, and G 2008 Refinement EIR (Reaches E, F, and G EIR)) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street

Connection. The remaining two phases that are anticipated to be constructed (the Central Feeder Connection and the Northern Reach, La Sierra Pipeline Connection, and Reach H of the 2005 Project Alignment) will be constructed in the future and are not anticipated to have emissions higher than those presented herein for the first two phases.

Construction of the Central Reach: The Central Reach of the project encompasses approximately 31,575 linear feet of 54-inch diameter pipeline that will be constructed south from a JCSD point of connection at the intersection of Clay Street and Limonite Avenue. The Central Reach continues south in Clay Street and crosses under the Union Pacific Railroad (UPRR). From that point, the pipeline is proposed to be constructed south under the Santa Ana River near Van Buren Boulevard. South of the Santa Ana River, the alignment crosses under Van Buren Boulevard to Doolittle Avenue and then to Van Buren Boulevard and continues south in Van Buren Boulevard. The alignment then traverses southeast in Jackson Street, west in Diana Avenue to Wilbur Street, then south under State Route 91. South of State Route 91, the alignment continues northeast in Indiana Avenue, then southeast in Jackson Street, and connects to the approved Riverside-Corona Feeder Project alignment near the intersection of Jackson Street and Cleveland Street. The pipeline will be placed underground utilizing conventional boring techniques or micro-tunneling at seven crossings: the UPRR at Clay Street, the Santa Ana River near Van Buren Boulevard, under Van Buren Boulevard near Jurupa Avenue, the culvert at Arlington Avenue and Van Buren Boulevard, under State Route 91 near Jackson Street, the Riverside Canal at Jackson Street, and the BNSF Railroad at Jackson Street. Total micro-tunneling and/or conventional boring for the above crossings will encompass approximately 2,850 linear feet. The remainder of the pipeline (28,725 linear feet) would be installed using conventional open trenching techniques. Conventional boring, also known as the Jack and Bore method, micro-tunneling, and trenching to install the pipeline will likely be done sequentially. However, it is possible that two separate crews could work on one of the above crossings and be trenching another segment of the pipeline alignment. Therefore, each construction method was analyzed individually and also combined. The construction methods of the Central Reach can be summarized as follows:

Installation of Central Reach Using the Jack and Bore Method or Micro-tunneling: Under the jack and bore method, the contractor installs a prefabricated pipe casing through the ground from a jacking pit to a receiving pit. The pipe is propelled by jacks located in the jacking pit. As the pipe progresses, the excavated soil called spoils is transported out of the pipe either manually or by mechanical methods. Micro-tunneling is also referred to as the trenchless construction method and is conducted similar to the jack and bore method with the exception that it is a remotely controlled, guided pipe jacking process that usually includes a laser guidance system. These boring techniques reduce surface disturbance to areas around the vertical jacking and receiving shafts at each end of the tunneling operation. Surface disturbance will include stockpiles of spoils, spoil removal activities, and equipment and materials storage. Ancillary equipment required by the operation includes an electric motor-powered hydraulic pump, an articulating crane, a tractor/loader/backhoe, diesel-fueled electric generator sets, welders, a bore/drill rig, and haul trucks to remove the spoils. Work crews connected with tunneling operations typically work 24-hours a day until the operation is completed. Removal of the spoils can be limited to daylight hours provided there is room on-site to stockpile the spoils.

Central Reach - Assumptions relevant to the tunneling/boring include:

- Tunneling/boring will progress at an average rate of 20 to 30 linear feet per day. This equals approximately 95 to 143 days of construction. To ensure a worst-case analysis, the shorter construction period was used.
- Tunneling/boring activities will disturb approximately 2.02 acres per day at any one crossing. This equals approximately 14.14 acres of total disturbance for boring activities.
- Approximately 1,470 cubic yards of on-site cut/fill will be disturbed during the excavation and re-compaction of the largest jacking and receiving pits for the Santa Ana River crossing.
- Approximately 2,500 cubic yards of material will be removed during boring operations necessitating approximately 125 truckloads of material being exported off-site over the three-month construction period.
- Plenty of sites exist within 10 miles of the project site to deposit clean fill material. Therefore, for modeling purposes each truck trip (two truck trips per truckload) is set at 10 miles.
- Two diesel-fueled electric generators will be used during boring/tunneling operations.
- Approximately 142 truckloads of pipe and casing, and an estimated 33 truckloads of other building materials will be transported to the construction site for a total of 175 truckloads during the construction period.
- Evaluating possible sources of pipe and construction materials in the vicinity, each truck trip will be approximately 60 miles or less.
- In URBEMIS, workers are estimated as 125 percent of total construction equipment selected and automatically generated in the model and displayed in the output by showing emissions from worker commute trips.
- This study assumes that boring/tunneling activities will occur 24 hours per day. Other construction activities associated with the removal of spoils will occur over a 10 hour workday.

Installation of Central Reach Using Typical Trenching Techniques: This analysis assumes that this portion of the pipeline will be constructed with standard shored-trenching techniques, also referred to as open trenching. Excavation of trenches will depend on several factors including available right-of-way, condition of in-situ material, and groundwater levels. Whenever possible, native material will be used to backfill the remainder of the trench.

Central Reach - Assumptions relevant to pipeline trenching and construction activities are:

- Trenching will progress at an average rate of 116 linear feet per day. This equates to approximately 248 weekdays (approximately 11.5 months).
- Approximately 0.08 acres per day will be disturbed during pipeline installation. This equals approximately 19.84 acres of total disturbance for trenching activities.

- Approximately 516 cubic yards of spoils will be excavated on a typical day. This is equal to a 15-foot trench 8-feet wide and 116-feet long. Of that, approximately 68 cubic yards of spoils will be displaced necessitating approximately 3 truckloads of material being exported off-site each day.
- The existing asphalt to be removed will be crushed on-site and used as aggregate to fill in the trench. No hauling will be necessary for asphalt removal.
- Approximately 930 square feet or 0.02 acres of surface area will be covered in asphalt each day. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- Approximately 718 pipe segments, 54-inches in diameter and 40-feet long, will be brought to the site requiring approximately 3 truckloads per day during approximately 248 workdays. Evaluating possible sources of pipe and construction materials in the vicinity, each truck trip will be approximately 60 miles or less.
- Approximately 5 truckloads of other miscellaneous construction material and equipment per day will be brought to the construction site at 60 miles per trip.
- In URBEMIS, workers are estimated as 125 percent of the total construction equipment selected, and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

Construction of the Clay Street Connection: The Clay Street Connection of the project encompasses approximately 7,800 linear feet of pipeline, up to 48-inch diameter within unincorporated Riverside County; extending west within Limonite Avenue from the Limonite Avenue/Clay Street intersection, and then north in Pedley Road to 56th Street. This alignment does not include any crossings and would be installed using conventional open trenching techniques. Because the trenching activities analyzed for the Central Reach, above, provide for a more conservative analysis and worst-case scenario, trenching activities for the Clay Street Connection were not analyzed separately. The Clay Street Connection includes the construction of a booster station with pumps, meters, flow control, and disinfection facilities at one of four possible locations along the pipeline to allow water to flow in either direction. It is assumed that only one pump/booster station would be constructed as part of the project at one time. Because there are no specific plans for the construction of a particular booster station, the construction of a generic pump station was analyzed below under the description of the Mockingbird Connection because that location is larger and has more complex terrain thereby providing a worst-case analysis for the associated construction emissions.

Construction of the Mockingbird Connection: The Mockingbird Connection portion of the project consists of approximately 5,900 linear feet of pipeline, up to 42 inches in diameter, located within street rights-of-way, and within pipeline easements within the city of Riverside and adjacent unincorporated Riverside County, a five million-gallon (5 MG) reservoir and a related pump station. The pipeline will extend easterly within Irving Street, south of its intersection with Firethorn Avenue, and then east through pipeline easements to connect to the proposed pump station and reservoir. The pipeline will then extend east within a pipeline

easement and then south within Constable Road to the existing Mills Gravity Pipeline easement. At this point, the pipeline will continue west within the pipeline easement and cross under Van Buren Boulevard to connect to WMWD's existing Mockingbird Booster Station. Micro-tunneling or other boring techniques are proposed to install that portion of the Mockingbird Connection that crosses under Van Buren Boulevard (approximately 120 feet). It is assumed that trenching activities will not occur in more than one location during construction of the project. Because the trenching and boring/tunneling activities analyzed for the Central Reach, above, provide for a more conservative analysis and worst-case scenario, trenching and boring/tunneling activities for the Mockingbird Connection were not analyzed separately. The pump station will include pumps and flow control facilities to convey water in either direction. Because the site is approximately five acres, it is assumed that construction of the pump station will disturb one acre and the reservoir will disturb four acres, for the purposes of this analysis. The construction assumptions for the Mockingbird Connection pump station and reservoir can be summarized as follows:

Construction of the Mockingbird Connection Pump Station:

- Typical pump station construction for a facility of a similar size and location would take approximately nine months.
- Approximately one acre per day will be disturbed during pump station grading. Approximately 2 truckloads of material being exported off-site each day as a result of site clearing and grubbing at 10 miles per trip. An additional 5 truckloads of miscellaneous material and concrete delivery was also assumed to occur at 10 miles per trip.
- Once grading is complete, pump station construction will begin and is anticipated to take approximately 7.5 months. During construction, approximately 5 truckloads of other miscellaneous construction material and equipment per day will be brought to the construction site at 60 miles per trip.
- Approximately 25 percent of the site or 0.25 acres is assumed to be covered in asphalt over an estimated two weeks at the end of construction. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- In URBEMIS, workers are estimated as 125 percent of the total construction equipment selected, and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

Construction of the Mockingbird Connection Reservoir:

- Typical reservoir construction for a facility of a similar size and location would take approximately 12 months.
- Approximately four acres per day will be disturbed during site grading which is anticipated to take one month. Approximately 2 truckloads of material being exported off-site each day as a result of site clearing and grubbing at 10 miles per trip.

- Once grading is complete, reservoir construction will begin and is anticipated to take approximately 10 months.
- Because the reservoir is expected to be partially buried, it will need to be constructed of concrete. Unlike welded-steel reservoirs, concrete reservoirs are not painted. The concrete will also need to be reinforced with steel. Deliveries of these concrete reservoir-specific materials are estimated and analyzed herein. Steel reinforcing deliveries will occur first and will last approximately 30 days with three truckloads per day. Concrete deliveries occur in two phases. The first phase is approximately eight days long delivering 25 truckloads per day. The second phase is approximately 16 days long delivering eight truckloads per day. Concrete deliveries are assumed to be 10 miles per trip and steel deliveries are assumed to be 60 miles per trip.
- Additional deliveries of other miscellaneous construction material per day were automatically generated by URBEMIS, called vendor trips, and included in the project's building construction emissions, below.
- Approximately 25 percent of the site or one acre is assumed to be covered in asphalt over an estimated two weeks at the end of construction. Adequate asphalt batch plants and gravel mining are found within a 10-mile radius of the project area. Hauling truckloads and frequency are auto-calculated by URBEMIS.
- In URBEMIS, workers are estimated as 125 percent of the total construction equipment selected, and automatically generated in the model and displayed in the output.
- This study assumes construction equipment is running 10 hours per workday.

The construction equipment estimated to be used for each construction method and additional facility is shown in Appendix A. **Table 4** summarizes the estimated construction emissions from each pipeline construction method (boring/tunneling or trenching) and each facility constructed.

Table 4, Estimated Daily Construction Emissions By Method and Facility

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	NO_X	CO	SO_2	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
BORING/TUNNELING OPERATIONS						
Construction 2010						
Fugitive Dust	0.00	0.00	0.00	0.00	100.34	20.95
Off-Road Diesel	24.74	247.35	87.70	0.00	9.78	9.00
On-Road Diesel-soil hauling	0.06	0.79	0.28	0.00	0.03	0.03
Worker trips	0.08	0.15	2.61	0.00	0.02	0.01
On-Road Diesel-pipe hauling	0.48	6.67	2.38	0.01	0.29	0.25
Maximum[1]	25.36	254.96	92.97	0.01	110.46	30.24
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
TRENCHING OPERATIONS						
Construction 2010						
Fugitive Dust	0.00	0.00	0.00	0.00	31.93	6.67
Off-Road Diesel	7.15	46.28	25.89	0.00	2.96	2.73
On-Road Diesel-soil hauling	0.15	2.06	0.74	0.00	0.09	0.08
Trenching Worker trips	0.08	0.15	2.61	0.00	0.02	0.01
On-Road Diesel-pipe hauling	2.10	29.36	10.48	0.04	1.28	1.09
Asphalt	5.43	35.07	21.38	0.00	2.67	2.45
Maximum[1]	14.91	112.92	61.10	0.04	38.95	13.03
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
PUMP STATION CONSTRUCTION						
Construction 2010						
Site Grading[2]	4.66	39.79	19.24	0.01	12.42	4.04
Building Construction[3]	5.91	50.70	22.03	0.02	2.56	2.31
Coating/Painting	0.86	0.00	0.01	0.00	0.00	0.00
Asphalt	3.88	26.26	14.48	0.01	1.85	1.69
Maximum[4]	10.65	76.96	36.52	0.03	12.42	4.04
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
RESERVOIR CONSTRUCTION						
Construction 2010						

Site Grading[2]	5.68	46.79	25.53	0.00	43.85	10.86
Building Construction[5]	3.65	32.10	23.36	0.02	1.62	1.43
On-Road Diesel-hauling[6]	1.08	15.09	5.39	0.02	0.66	0.56
Asphalt	3.85	24.81	14.30	0.00	1.77	1.62
Maximum[2]	7.50	56..91	37.66	0.04	43.85	10.86
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: See Appendix A for model output report.
SCAQMD Daily Construction Thresholds obtained from the SCAQMD CEQA Handbook (SCAQMD 1993)
[1] The maximum emissions include each activity occurring concurrently.
[2] Site grading includes emissions of fugitive dust as well as on- and off-road diesel emissions from equipment and haul trucks and emissions from worker trips.
[3] Building construction also includes the on-road diesel emissions from haul trucks bringing construction materials to the site and hauling vegetation off-site from site grubbing and clearing activities.
[4] Although building construction, architectural coating/painting, and asphalt activities are not expected to overlap, they are combined herein to provide a worst-case analysis of all activities that could occur concurrently. Therefore, the maximum emissions are the greater of site grading alone or building construction, coating/painting, and asphalt applications.
[5] Building construction includes the on-road diesel emissions from haul trucks bringing typical construction materials to the site and hauling vegetation off-site from site grubbing and clearing activities.
[6] These on-road diesel emissions relate to the maximum daily emissions from the delivery of reservoir-specific materials which correspond to concrete for the reservoir at a frequency of 25 truckloads per day.
[7] Maximum emissions are the greater of site grading alone or building construction and maximum daily hauling emissions, or building construction and asphalt applications as this provides a worst-case scenario; although asphalt is expected to occur after construction is complete. Asphalt activities will not occur when reservoir-specific deliveries are occurring.

Evaluation of the above table indicates that criteria pollutant emissions from construction of either the boring/tunneling activities or the trenching activities alone are above the SCAQMD daily thresholds for NO_X. None of the above SCAQMD daily thresholds are exceed during construction of the pump station or reservoir when analyzed independently The main source of NO_X is from construction vehicle and equipment exhaust. The main source of PM-10 and PM-2.5 is from fugitive dust emissions during site grading at the pump station and reservoir site and excavation of trenches and jack and bore pits.

Since this project will be constructed in phases, one or more facilities are anticipated to be under construction at one time. As identified above, concurrent construction is anticipated for: 1) the Reaches E, F, and G 2008 Refinement (analyzed in the Reaches E, F, and G 2008 Refinement EIR (Reaches E, F, and G EIR)) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street Connection. The maximum daily emissions from these concurrent construction activities are contained in **Table 5**.

Table 5, Estimated Maximum Daily Construction Emissions

Activity/Year	Peak Daily Emissions (lb/day)					
	VOC	**NO_X**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
SCAQMD Daily Construction Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Reaches E, F, and G 2008 Refinement and Mockingbird Connection						
Reaches E, F, and G[1]	13.45	111.38	43.67	0.11	31.54	10.10
Mockingbird Connection						
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Boring/Tunneling	25.36	254.96	92.97	0.01	110.46	30.24
Pump Station	10.65	76.96	36.52	0.03	12.42	4.04
Reservoir	7.50	56..91	37.66	0.04	43.85	10.86
Maximum	**71.87**	**613.13**	**271.92**	**0.23**	**237.22**	**68.27**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Central Reach and Clay Street Connection						
Central Reach						
Boring/Tunneling	25.36	254.96	92.97	0.01	110.46	30.24
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Clay Street Connection						
Trenching	14.91	112.92	61.10	0.04	38.95	13.03
Pump Station	10.65	76.96	36.52	0.03	12.42	4.04
Maximum	**65.83**	**557.76**	**251.69**	**0.12**	**200.78**	**60.34**
Exceeds Threshold?	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**

Notes: See Appendix A for model output report.
SCAQMD Daily Construction Thresholds obtained from the SCAQMD CEQA Handbook (SCAQMD 1993)
[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR (Reaches E, F, and G EIR).

Evaluation of the above table indicates that criteria pollutant emissions of NO_X, PM-10, and PM-2.5 from construction of the Reaches E, F, and G 2008 Refinement and Mockingbird Connection or the Central Reach and Clay Street Connection will exceed regional thresholds. The main source of NO_X is from construction vehicle and equipment exhaust. The main source of PM-10 and PM-2.5 is from fugitive dust emissions during site grading at the pump station and reservoir site and excavation of trenches and jack and bore pits.

Long-Term Analysis

Operation of the proposed pipeline will involve long-term emissions of air pollutants from employees needed for operations and maintenance. These pollutant emissions were analyzed in the 2005 Certified Program EIR for the 2005 Project Alignment. The impacts and findings discussed in the 2005 Certified Program EIR related to long-term air quality were not specifically related to the 2005 Project Alignment. The proposed project will substitute a new alignment for that portion of the 2005 Project Alignment identified as Reaches A, B, C, and D in the 2005 Program EIR. The earlier analysis can be utilized in determining significance for the proposed realignment. Further analysis of the proposed pipeline alignment is not necessary to

make the previous analysis adequate for the revised project. The addition of the Mockingbird Connection reservoir will have a negligible effect on long-term emissions from the project since these emissions are also in the form of maintenance vehicle usage and are not expected to increase the demand for additional employees. Likewise, the proposed pump stations will also have negligible long-term emissions that are in the form of maintenance vehicle usage and are not expected to increase the demand for additional employees. However, pump stations do increase electricity usage. The emissions from electricity usage were also previously analyzed in the 2005 Certified Program EIR. Additional pump stations will not cause an exceedance of applicable thresholds based on the previous analysis. The previous analysis found that long-term emissions projections from the pipeline alignment and pump station were below the applicable SCAQMD thresholds for significance.

Conclusion

Based on the regional significance threshold analysis for the proposed project, short-term construction will exceed the daily regional thresholds set by SCAQMD for one or more pollutants whether each project construction method and facility is evaluated individually under the expected concurrent construction schedule. The long-term operation of the project will not exceed the daily regional thresholds set by SCAQMD, as previously evaluated in the 2005 Certified Program EIR.

LOCALIZED SIGNIFICANCE THRESHOLD ANALYSIS

Background

Recently, as part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology (SCAQMD 2008) that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short-term and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA).

Methodology

The emissions analyzed under the LST methodology are NO_2, CO, PM-10, and PM-2.5. For attainment pollutants, nitrogen dioxide (NO_2) and CO, the LSTs are derived using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any ambient air quality standard for a particular source receptor area. LSTs for NO_2 and CO are derived by adding the incremental emission impacts from the project activity to the peak background NO_2 and CO concentrations and comparing the total concentration to the most stringent ambient air quality standards. The most stringent standard for NO_2 is the 1-hour state standard of 18 parts per hundred million and for CO it is the 1-hour and 8-hour state standards of 9 parts per million (ppm) and 20 ppm, respectively. For PM-10 and PM-2.5, which the Basin is non-attainment, the LST's are derived using an air quality dispersion model to back-calculate the emissions necessary to make an existing violation in the specific source receptor area worse,

using the allowable change in concentration thresholds approved by the SCAQMD. For PM-10 and PM-2.5, the approved 24-hour concentration thresholds for construction and operation are 10.4 $\mu g/m^3$ and 2.5 $\mu g/m^3$, respectively.

The short-term LST analysis for each construction method for the proposed project was performed using lookup tables provided by the SCAQMD. SCAQMD has provided LST lookup tables to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. For each of the project-related activities, it was anticipated that an area no larger than five acres would be disturbed at any one time in a given location during construction. Unlike the regional emissions analysis above, the LST analysis looks at the total construction activities that could occur in one location rather than within the region. Typically, the project site is one location, but for the RCF project and the proposed connections project site consists of a linear alignment with the associated facilities separated by great distances. The results are included following the short-term analysis discussion below.

Short-Term Analysis

For short-term construction emissions, the emission rates were calculated from the URBEMIS computer program estimated emissions (Appendix A). For NO_X and CO emissions, the maximum on-site emissions were calculated for each construction activity from the off-road diesel exhaust emissions. According to LST methodology, emissions associated with on-road diesel, vendor trips, and worker trips are mobile source emissions that occur off-site, and therefore, do not need to be considered. For PM-10 emissions, the maximum emissions occur primarily during site grading at pump station or reservoir locations and excavation of the trenches and jack and bore pits. The maximum PM-10 and PM-2.5 emissions included fugitive dust and off-road diesel exhaust emissions.

SCAQMD has provided LST lookup tables (available on the internet at http://www.aqmd.gov/ceqa/handbook/LST/LST.html) to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the total disturbance area for the pipeline is larger than five acres, it is anticipated that an area no larger than three acres (2.02 acres for boring activities plus 0.08 acres for trenching) will be disturbed in one day in the same location. Therefore, the LST lookup tables were used for construction emissions. Similarly, construction of pipeline trenching activities, the pump station and reservoir were assumed to be constructed concurrently in order to ensure a worst-case analysis. For these facilities, the entire 5.08 acre footprint (0.08 acres for trenching plus four acres for tank activities plus one acre for the pump station) will be disturbed in one day. Although the maximum total construction footprint for concurrent construction is approximately 5.08 acres, it can still be used as an indicator for exceedances to the LST.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the project to the nearest sensitive receptors (in meters). The nearest sensitive receptors are existing schools, residences, churches, hospitals, day care centers and medical clinics and adjacent to and in close proximity with the majority of the pipeline alignment and

associated facilities. LST Methodology states that projects with boundaries located closer than 25 meters to the nearest receptor should use the LST distance of 25 meters for the analysis. Therefore, the worst-case receptor distance of 25 meters, as shown in the LST lookup tables, was used.

Each construction activity that could occur in the same location was evaluated individually and then combined to show the worst-case conditions. Like the regional analysis above, the project is anticipated to be constructed in phases with the following segments constructed concurrently: 1) Reaches E, F, and G 2008 Refinement (analyzed in the Reaches E, F, and G 2008 Refinement EIR (Reaches E, F, and G EIR)) and the Mockingbird Connection; and 2) the Central Reach and the Clay Street Connection. For the construction of the Reaches E, F, and G 2008 Refinement and Mockingbird Connection, the following activities can be occurring adjacent to one another: Reaches E, F, and G construction and Mockingbird Connection pipeline trenching; and Mockingbird Connection pipeline trenching; Mockingbird Connection pump station; and Mockingbird Connection reservoir. For the construction of the Central Reach and the Clay Street Connection, the following activities can be occurring adjacent to one another: Central Reach boring/tunneling and trenching; and Clay Street Connection pipeline trenching and pump station construction. **Table 6** summarizes the emissions from construction of the Reaches E, F, and G and the Mockingbird Connection and the corresponding thresholds. **Table 7** summarizes the emissions from construction of the Central Reach and the Clay Street Connection and the corresponding thresholds.

Table 6, Localized Short-Term Construction Impacts from Reaches E, F, and G and Mockingbird Connection Construction

Activity	Maximum Daily Disturbed Area (acres)	Peak Daily Emissions (lb/day)			
		NO_X	CO	PM-10	PM-2.5
Reaches E, F, and G[1]	1.0	111.05	40.51	31.51	10.08
Mockingbird Trenching	0.08	81.21	44.92	37.54	11.84
Maximum	1.08	192.26	85.43	69.05	21.92
25 Meter Threshold	1.0	118	602	4	3
Exceeds threshold		**Yes**	**No**	**Yes**	**Yes**
Mockingbird Trenching	0.08	81.21	44.92	37.54	11.84
Pump Station	1.0	35.49	16.42	12.22	3.87
Reservoir	4.0	45.51	23.80	43.79	10.81
Maximum	5.08	162.21	85.14	93.55	26.52
25 Meter Threshold	5.0	270	1,577	13	8
Exceeds threshold		**No**	**No**	**Yes**	**Yes**

Notes: SCAQMD LST obtained from LST Lookup Tables in Appendix C of the LST Methodology, updated 10-21-09.

[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR (Reaches E, F, and G EIR).

According to **Table 5**, concurrent construction of Reaches E, F, and G and the Mockingbird Connection pipeline trenching will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity. Localized emissions of PM-10 and PM-2.5 from pipeline construction using the trenching method will exceed the applicable LST.

Table 7, Localized Short-Term Construction Impacts from Central Reach and Clay Street Connection Construction

Activity	Maximum Daily Disturbed Area (acres)	Peak Daily Emissions (lb/day)			
		NO_X	**CO**	**PM-10**	**PM-2.5**
Central Reach Trenching	0.08	81.21	44.92	37.54	11.84
Central Reach Boring/Tunneling	2.02	247.35	87.70	100.34	20.95
Maximum	3.0	328.56	132.62	137.88	32.79
25 Meter Threshold[2]	3.0	203	1,114	8	4
Exceeds threshold		**Yes**	**No**	**Yes**	**Yes**
Clay St Pump Station	1.0	35.49	16.42	12.22	3.87
Clay St Trenching	0.08	81.21	44.92	37.54	11.84
Maximum	1.08	116.70	61.34	49.76	15.71
25 Meter Threshold	1.0	118	602	4	3
Exceeds threshold		**No**	**No**	**Yes**	**Yes**

Notes: SCAQMD LST obtained from LST Lookup Tables in Appendix C of the LST Methodology, updated 10-21-09.

[1] Emissions estimates obtained from the Reaches E, F, and G 2008 Refinement EIR, (Reaches E, F, and G EIR).

[2] The LST threshold for 3 acres was calculated using SCAQMD LST Appendix K and shown in Appendix B.

According to **Table 6**, concurrent construction of the Central Reach trenching and boring/tunneling activities will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity. Concurrent construction of the Clay Street Connection pipeline trenching and the pump station will result in localized PM-10 and PM-2.5 impacts to sensitive receptors in the project vicinity. Concurrent construction of the Central Reach and the Clay Street Connection will result in localized NO_X, PM-10, and PM-2.5 impacts to sensitive receptors in the project vicinity

Evaluation of **Table 6** and **Table 7** indicates that the maximum localized impacts occur during construction of the Central Reach pipeline alignment when both boring/tunneling and trenching activities are occurring along adjacent segments of the alignment causing the LST to be exceeded for NO_X, PM-10, and PM-2.5.

Long-Term Analysis

This project involves the installation of a gravity-fed potable water pipeline and associated facilities such as pump stations and a water storage reservoir. The pump stations are powered by electric motors which are an indirect source of criteria pollutant emissions. The majority of the operational emissions are in the form of mobile source emissions, without any stationary sources present. According to the SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed project does not include such uses. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is needed.

Conclusion

Based on the LST analysis, the short-term construction of the project will result in localized air quality impacts to sensitive receptors in the project vicinity for NO_X, PM-10, and PM-2.5. Due to the lack of stationary source emissions, no long-term localized significance threshold analysis is needed.

RECOMMENDED MITIGATION MEASURES

In addition to compliance with SCAQMD Rule 403 (see page 13) for project construction, the following mitigation measures shall be implemented:

MM Air 1: Prior to construction of the proposed improvements, the project proponent will provide a traffic control plan that will describe in detail safe detours around the project construction sites and provide temporary traffic control (i.e. flag person) during earthen material transport and other construction-related truck hauling activities.

MM Air 2: During construction of the proposed improvements one of the following options must be used to supply the power needs for boring/tunneling operations: 1) use natural gas fueled generator sets; 2) use low emission, duel fueled generator sets; or 3) prior to construction of the proposed improvements, arrangements will be made with Southern California Edison to provide temporary construction power at the boring/tunneling sites.

MM Air 3: During construction of the proposed improvements, all mobile and stationary construction equipment will be properly maintained at an off-site location including proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site for the complete duration of construction.

MM Air 4: To reduce fugitive dust emissions, the contractor shall provide the District with sufficient proof of compliance with Rule 403 and other dust control measures including, but not limited to:

- requiring the application of non-toxic soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 20 days or more, assuming no rain),
- requiring all trucks hauling dirt, sand, soil, or other loose materials are to be covered or must maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code.
- suspending all excavating and grading operations when wind gusts (as instantaneous gust) exceed 25 miles per hour over a 30-minute period,
- post contact information outside the property for the public to call if specific air quality issues arise,
- use SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks when sweeping streets to remove visible soil materials, replace ground cover in disturbed areas as quickly as possible.

IMPACTS AFTER MITIGATION

In an effort to reduce estimated emissions, the mitigation measures listed above were considered. **MM Air 1** through **4** are associated with reduction in construction-related emissions for NO_X, PM-10 and PM-2.5.

Although implementation of mitigation measures **MM Air 1** through **4** will reduce project-generated emissions, there are no distinct SCAQMD established quantitative reductions associated with them; therefore, to be conservative, it is assumed that there is no change in the estimated emissions of the project from those mitigation measures. The project's short-term construction emissions will still exceed the SCAQMD regional significance thresholds for NO_X, PM-10, and PM-2.5. Short-term construction will also exceed applicable LST thresholds for NO_X, PM-10, and PM-2.5.

CONCLUSION

The project-specific evaluation presented in the preceding analysis demonstrates that, even with the incorporation of mitigation measures, projected short-term emissions from construction are above applicable SCAQMD daily regional thresholds for one or more pollutants when each construction method and facility is evaluated individually, or under the expected concurrent construction schedule. Additionally, short-term emissions from NO_X, PM-10, and PM-2.5 will exceed SCAQMD's localized significance thresholds.

The long-term operation of the project will not exceed the daily regional thresholds set by SCAQMD, as previously evaluated in the 2005 Certified Program EIR. Additionally, no long-term localized significance threshold is necessary**.**

SECTION 3 – GLOBAL CLIMATE CHANGE ANALYSIS

BACKGROUND

Some gases in the atmosphere affect the Earth's heat balance by absorbing infrared radiation. This layer of gases in the atmosphere functions much the same as glass in a greenhouse (i.e., both prevent the escape of heat). This is why global warming is also known as the "greenhouse effect." Increased emissions of these gases due to combustion of fossil fuels and other activities increase the greenhouse effect, leading to global warming and other climate changes. Gases responsible for global climate change in the South Coast Air Basin and their relative contribution to the overall warming effect are carbon dioxide (55 percent), chlorofluorocarbons (CFCs) (24 percent), methane (15 percent), and nitrous oxide (6 percent) (SCAQMD 2005). It is widely accepted that continued increases in greenhouse gases (GHG) will contribute to global climate change although there is uncertainty concerning the magnitude and timing of future emissions and the resultant warming trend (SCAQMD 2005). Human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors contribute to these GHG (CEC 2006a). According to a report published by the California Energy Commission (CEC), transportation was responsible for 41 percent of the state's GHG emissions, followed by electricity generation for the most recent reporting year, 2004 (CEC 2006a). In November 2007, the California Air Resources Board (CARB) reported that transportation was 38 percent of the state's GHG emissions, followed by electricity generation for 2004 (CARB 2007). Emissions of CO_2 and nitrous oxide (N_2O) are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices, landfills, and wastewater treatment.

"Stratospheric ozone depletion" refers to the slow destruction of naturally occurring ozone, which lies in the upper atmosphere (called the stratosphere) and which protects the Earth from the damaging effects of solar ultraviolet radiation. Certain compounds, including CFCs, halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds, accumulate in the lower atmosphere and then gradually migrate into the stratosphere. In the stratosphere, these compounds participate in complex chemical reactions to destroy the upper ozone layer. Destruction of the ozone layer increases the penetration of ultraviolet radiation to the Earth's surface, a known risk factor that can increase the incidence of skin cancers and cataracts; contribute to crop and fish damage; and further degrade air quality (SCAQMD 2005).

GHG and ozone-depleting gases include, but are not limited to, the following:

- **Carbon dioxide –** Carbon dioxide results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, carbon dioxide accounted for approximately 84 percent of total GHG emissions in the state (CEC 2006a). In the SCAB, approximately 48 percent of carbon dioxide emissions come from transportation, residential, and utility sources which contribute approximately 13 percent each; 20 percent come from industry, and the remainder comes from a variety of other sources (SCAQMD 2005).

- **Methane –** Atmospheric methane is emitted from both non-biogenic and biogenic sources. Non-biogenic sources include fossil fuel mining and burning, biomass burning, waste treatment, geologic sources, and leaks in natural gas pipelines. Biogenic sources include wetlands, rice agriculture, livestock, landfills, forest, oceans, and termites. Methane sources can also be divided into anthropogenic and natural. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites, and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions (IPCC). It is a greenhouse gas and traps heat 40-70 times more effectively than carbon dioxide (SCAQMD 2005). In the SCAB, more than 50 percent of human-induced methane emissions come from natural gas pipelines, while landfills contribute 24 percent. Methane emissions from landfills are reduced by SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills. Methane emissions from petroleum sources are reduced by a number of rules in the SCAQMD Regulation XI that control fugitive emissions from petroleum production, refining, and distribution (SCAQMD 2005).
- **Other regulated greenhouse gases include Nitrous Oxide, Sulfur Hexafluoride, Hydrofluorocarbons, and Perfluorocarbons** – These gases all possess heat-trapping potential that are hundreds to thousands of times more effective than carbon dioxide. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, wastewater treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to carbon dioxide or methane, is relatively small. Sulfur hexafluoride, hydrofluorocarbon, and perfluorocarbon emissions occur at even lower rates.
- **Chlorofluorocarbons** – Chlorofluorocarbons (CFCs) are emitted from blowing agents used in producing foam insulation. They are also used in air conditioners and refrigerators, and as solvents to clean electronic microcircuits. CFCs are primary contributors to stratospheric ozone depletion and to global climate change. Sixty-three percent of CFC emissions in the SCAB come from the industrial sector. Federal regulations require service practices that maximize recycling of ozone-depleting compounds (both CFCs, hydro-chlorofluorocarbons, and their blends) during the servicing and disposal of air-conditioning and refrigeration equipment. SCAQMD Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems requires CFC refrigerants to be reclaimed or recycled from stationary refrigeration and air conditioning systems. SCAQMD Rule 1405 – Control of Ethylene Oxide and Chlorofluorocarbon Emissions From Sterilization or Fumigant Processes requires recovery of reclamation of CFCs at certain commercial facilities and eliminates the use of some CFCs in the sterilization processes. Some CFCs are classified as TACs and regulated by SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, and SCAQMD Rule 1402 Control of Toxic Air Contaminants from Existing Sources.
- **Halons –** These compounds are used in fire extinguishers and behave as both ozone-depleting and greenhouse gases. Halon production ended in the United States in 1993. SCAQMD Rule 1418 – Halon Emissions From Fire Extinguishing Equipment requires the recovery and recycling of halons used in fire extinguishing systems and prohibits the sale of halon in small fire extinguishers.

- **Hydro-chlorofluorocarbons –** HCFCs are solvents, similar in use and chemical composition to CFCs. The hydrogen component makes HCFCs more chemically reactive than CFCs, allowing them to break down more quickly in the atmosphere. These compounds deplete the stratospheric ozone layer, but to a much lesser extent than CFCs. HCFCs are regulated under the same SCAQMD rules as CFCs.
- **1,1,1,-trichloroethane (TCA**) – TCA (methyl chloroform) is a solvent and cleaning agent commonly used by manufacturers. It is less destructive on the environment than CFCs or HCFCs, but its continued use will contribute to global climate change and ozone depletion. 1,1,1-trichloroethane (TCA) is a synthetic chemical that does not occur naturally in the environment. No TCA is supposed to be manufactured for domestic use in the United States after January 1, 2002 because it affects the ozone layer. TCA had many industrial and household uses, including use as a solvent to dissolve other substances, such as glues and paints; to remove oil or grease from manufactured metal parts; and as an ingredient of household products such as spot cleaners, glues, and aerosol sprays. The SCAQMD regulates this compound as a toxic air contaminant under Rules 1401 and 1402.

Unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, global warming is a global problem and GHGs are global pollutants. Impacts of GHG emissions are a function of their total atmospheric concentration and most GHGs are globally well mixed atmospheric constituents. This means that the location of a particular GHG emission, in contrast to the situation for criteria pollutants, does not change its environmental impact.

Globally, for the years 2000 through 2005, the annual average emissions of fossil fuel-related carbon dioxide was 26.4 gigatons of CO_2 (one gigaton equals one billion Mt) per year (IPCC). It should also be noted that the annual total U.S. emissions of GHG dropped 1.5 percent in 2006 from 7,181 million Mt to 7,075 million Mt due to warmer weather and decreased energy demand, according to the Energy Information Administration (EIA). During the same timeframe, the U.S. economic output increased 2.9 percent (EIA). This decline results in a GHG intensity reduction of 4.2 percent as a measure of gross domestic product (EIA).

Worldwide, California is the 12th to 16th largest emitter of CO_2, and is responsible for approximately two percent of the world's CO_2 emissions (CEC 2006a). In 2004, the most recent year for which statewide data is available, the CEC reported that California produced 492 million gross metric tonnes (one metric tonne equals 2,205 pounds) of carbon dioxide-equivalent (CEC 2006a).

In January 2007, Assembly Bill 1803 transferred responsibility for developing and maintaining the state's GHG inventory from the California Energy Commission (CEC) to CARB. Using the CEC GHG inventory as a starting point, CARB staff determined the state's 1990 GHG emissions level by conducting a comprehensive review of all GHG emitting sectors. The seven sectors are: Transportation, Electricity Generation, Industrial, Residential, Agriculture, Commercial, and Forestry.

In November 2007, the CARB released its staff report establishing a statewide 1990 GHG emission level and a 2020 emission limit (CARB 2007). As part of this staff report, CARB staff recommended an amount of 427 million metric tonnes of carbon dioxide equivalent ($MMTCO_2e$) as the total statewide GHG 1990 emissions level and 2020 emissions limit. The Board approved

the 2020 limit on December 6, 2007. This limit is an aggregated statewide limit, rather than sector- or facility-specific. The staff report also included the statewide GHG emissions for 2004, which was 480 $MMTCO_2e$.

While the inventory data numbers from the CEC and CARB are similar for 2004, these estimates have important differences. Emissions from individual sectors differ between CEC and CARB estimates by up to 30 percent due to updated data, methodologies, and differences in included and excluded emissions. Staff at CARB treated carbon stored in landfills differently than CEC by separately tracking stored carbon instead of considering it an emission sink within a landfill. In addition, the CARB estimate only includes intrastate aviation, whereas the CEC estimates include both interstate and intrastate flights. Staff also included emissions from international shipping and related port activities in California waters, whereas the CEC excluded all emissions from international ships.

REGULATORY SETTING

The Montreal Protocol on Substances That Deplete the Ozone Layer is an international agreement which controls the phase-out of ozone-depleting compounds (ODCs). Under this international agreement, several organizations report on the science of ozone depletion, implement projects to help move away from ODCs, and provide a forum for policy discussions. The SCAQMD supports state, federal, and international policies to reduce levels of ozone depleting gases through its Global Warming Policy and rules. Further, SCAQMD has developed ODC Replacement Guidelines to facilitate transition from ODCs to substances that are the most environmentally benign (SCAQMD 2005).

The U.S. EPA has issued regulatory actions under the Clean Air Act and in some cases other statutory authorities to address issues related to climate change[1]. Most recently, on April 1, 2010, U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a new national program that will reduce GHG and improve fuel economy for all new cars and trucks sold in the United States. The U.S. EPA and NHTSA finalized a joint rule that establishes a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. U.S. EPA finalized the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA finalized Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. This national program will allow automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states.

The Council on Environmental Quality (CEQ) issued a memorandum for heads of Federal departments and agencies on February 18, 2010 providing *Draft NEPA Guidance on Consideration of the effects of Climate Change and Greenhouse Gas Emissions* (draft guidance) (CEQ 2010). The draft guidance was released for public consideration and comment on when and how Federal agencies must consider GHG emissions and climate change in their proposed actions under the National Environmental Policy Act (NEPA). CEQ has been asked to provide guidance on this subject informally by Federal agencies and formally by a petition under the

[1] http://www.epa.gov/climatechange/initiatives/index.html, accessed April 28, 2010.

Administrative Procedure Act. The draft guidance explains how Federal agencies should analyze the environmental impacts of GHG emissions and climate change when they describe the environmental impacts of a proposed action under NEPA. It provides practical tools for agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent emissions from the proposed action to trigger a quantitative analysis, and instructs agencies how to assess the effects of climate change on the proposed action and their design. The draft guidance does not apply to land and resource management actions and does not propose to regulate greenhouse gases. CEQ is receiving public comment on this guidance for 90 days. Because this guidance is in draft form and subject to change and the nature of this public infrastructure project, these recommendations are not utilized in the project's analysis; they are briefly addressed here for the purpose of full disclosure.

On December 7, 2009, Administrator Lisa Jackson signed a final action, under Section 202(a) of the Clean Air Act, finding that six key well-mixed greenhouse gases constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to the climate change problem.

The U.S. EPA, under the Energy Independence and Security Act of 2007, is responsible for revising and implementing regulations to ensure that gasoline sold in the United States contains a minimum volume of renewable fuel. A Notice of Proposed Rulemaking for the Renewable Fuel Standard (RFS) program was published on May 26, 2009. The RFS program will increase the volume of renewable fuel required to be blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022. The new RFS program regulations are being developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), U.S. EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. Signed by the Administrator on September 22, 2009, the rule requires in general that suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light duty sector, and facilities that emit 25,000 Mt or more of GHGs per year to submit annual reports to U.S. EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.

On September 30, 2009 U.S. EPA proposed new thresholds for GHG that define when Clean Air Act permits under the New Source Review and Title V operating permits programs would be required. The proposed thresholds would tailor these permit programs to limit which facilities would be required to obtain permits and would cover nearly 70 percent of the nation's largest stationary source GHG emitters—including power plants, refineries, and cement production facilities, while shielding small businesses and farms from permitting requirements.

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest amendments were made in October 2005 and currently require new homes to use half the energy that they used only a decade ago. In September 2008,

the new 2008 standards were adopted to update the Building Energy Efficiency Standards contained in the California Code of Regulations (CCR), Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1. The amended 2008 standards went into effect in January 2010. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

In July 2002, Governor Gray Davis signed California Assembly Bill (AB) 1493 (Pavley), which requires CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation, if implemented, will reduce GHG emissions from the light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. The U.S. Environmental Protection Agency (EPA) denied the Clean Air Act waiver required to implement AB 1493 on December 19, 2007. However, the U.S. EPA's decision is being challenged in federal court by the State of California. Nevertheless, in the event that the federal waiver is denied, or the U.S. EPA's decision is upheld, AB 32 requires CARB to adopt alternative regulations to control mobile sources of greenhouse gas emissions to achieve greater or equivalent reductions (see Health & Safety Code section 38590). In January 2009, President Barack Obama issued a directive to the U.S. EPA to reconsider California's request for a waiver which was later granted on June 30, 2009.

In June 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. This Order calls for the following GHG emission reduction targets to be established: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050. It also requires biennial reports on potential climate change effects on several areas, including water resources. The Order also requires that the Secretary of the California Environmental Protection Agency coordinate oversight of the efforts made to meet the targets with: the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the Air Resources Board, Chairperson of the Energy Commission, and the President of the Public Utilities Commission.

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 directs the California Air Resources Board (CARB) to implement regulations for a cap on sources or categories of sources of GHG emissions. The bill requires that CARB develop regulations to reduce emissions with an enforcement mechanism to ensure that the reductions are achieved, and to disclose how it arrives at the cap. It also includes conditions to ensure businesses and consumers are not unfairly affected by reductions.

AB 32 requirements and milestones are as follows:

- June 30, 2007–Identification of discrete early action greenhouse gas emissions reduction measures. Three early action measures were approved by CARB on June 21, 2007. Six other discrete early action measures were subsequently approved.

- January 1, 2008–Establish a 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of mandatory reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.
- January 1, 2009–Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, the CARB Board adopted the Climate Change Scoping Plan (Scoping Plan) at its meeting.
- January 1, 2010–Adoption and enforcement of regulations to implement the "discrete" actions.
- January 1, 2011–Adoption of GHG emissions limits and reduction measures by regulation.
- January 1, 2012–GHG emissions limits and reduction measures adopted in 2011 become enforceable.

AB 32 codifies S-3-05's year 2020 goal by requiring that statewide GHG emissions be reduced to 1990 levels by the year 2020.

Under AB 32, CARB published its Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California in October 2007. There are 44 early action measures, both regulatory and non-regulatory, and are currently underway or to be initiated by the CARB in the 2007 to 2012 timeframe. The early action measures apply to the fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, waste, fuels, cement, oil and gas, electricity, and fire suppression sectors. As noted in the milestones above, nine of the early action measures are discrete early action measures that are regulatory and enforceable by January 1, 2010. CARB estimates that the 44 recommendations have the potential to result in GHG reductions of at least 42 MMTCO2e by 2020, representing approximately 25 percent of the 2020 target.

As discussed in the Scoping Plan, the projected total business-as-usual emissions for year 2020 (596 $MMTCO_2e$) must be reduced approximately 30 percent to achieve CARB's approved 2020 emission target of 427 $MMTCO_2e$. This is approximately 15 percent reduction in today's levels. The Scoping Plan identifies recommended measures for several GHG emission sectors and the associated emission reductions to meet the 2020 emissions target. Each sector has a different emission reduction target. The majority of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements for reducing California's GHG to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

Also in September 2006, Governor Arnold Schwarzenegger signed Senate Bill (SB) 1368 which calls for the adoption of a greenhouse gas (GHG) performance standard for in-state and imported electricity generators to mitigate climate change. On January 25, 2007, the California Public Utilities Commission adopted an interim GHG emissions performance standard. This standard is a facility-based emissions standard requiring all new long-term commitments for baseload generation to serve California consumers to be with power plants that have emissions no greater than a combined-cycle gas turbine plant. The established level is 1,100 pounds of CO_2 per megawatt-hour.

Executive Order S-01-07 was approved by the Governor on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It also required that a Low Carbon Fuel Standard for transportation fuels be established for California which was approved by CARB on April 23, 2009. The regulation is designed to increase the use of alternative fuels, replacing 20 percent of the fuel used by cars in California with clean alternative fuels by 2020, including electricity, biofuels, hydrogen and other options.

The Western Regional Climate Action Initiative was signed on February 26, 2007 by five states: Washington, Oregon, Arizona, New Mexico, and California. Utah, as well as Manitoba and British Columbia, Canada joined in April 2007. Montana joined in January 2008, Quebec moved from Observer to Partner status in April 2008 and Ontario moved from Observer to Partner status in July 2008. Other U.S. and Mexican states, and Canadian provinces have joined as observers. The Initiative plans on collaborating to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative plans on collaborating to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative announced recommendations for the design of a regional market-based cap and trade program on September 23, 2008 and released their document *Background Document and Progress Report for Essential Requirements of Mandatory Reporting for the Western Climate Initiative, Third Draft* on January 6, 2009. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions.

In August 2007, Governor Arnold Schwarzenegger signed Senate Bill (SB) 97, CEQA: Greenhouse Gas Emissions. The bill required the OPR, by July 1, 2009, to prepare guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010. On June 19, 2008, OPR released an interim technical advisory for addressing climate change in CEQA documents (OPR 2008). The recommended approach is to identify and quantify project-related GHG emissions; determine its significance; and if the

impact is found to be potentially significant, implement mitigation measures or alternatives that will reduce the impact below significance. Further, the guidance states that the lead agency is not responsible for completely eliminating all project-related GHG emissions. The approach used in this study is to identify and quantify project-related GHG emissions consistent with the current OPR recommendations, but not determine its significance. Instead project-related emissions are compared to the draft SCAQMD CEQA GHG screening level.

Pursuant to SB 97, OPR released and the Natural Resources Agency adopted CEQA Guideline Amendments (Adopted Amendments) addressing GHG emissions on December 30, 2009. The Natural Resources Agency also released "Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97" (FSOR) providing additional explanation about the Adopted Amendments[3].The Adopted Amendments became effective on March 18, 2010, after the Office of Administrative Law completed its review of the Adopted Amendments and rulemaking file, and transmitted the Adopted Amendments to the Secretary of State for inclusion in the California Code of Regulations.

Among other things, these Adopted Amendments require that public agencies consider GHG in any CEQA documents. The Adopted Amendments also include amending Appendix G of the State CEQA Guidelines to address GHG. The Adopted Amendments establish a new section within Appendix G, GREENHOUSE GAS EMISSIONS, with two issue questions to determine if the project would: a) generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or b) conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The Adopted Amendments emphasize that lead agencies have the discretion to determine appropriate significance thresholds for evaluating GHG impacts that are supported by substantial evidence in the record. According to Section 15064.4(a) of the Adopted Amendments, "The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064 [Determining the Significance of the Environmental Effects Caused by a Project]. A lead agency should make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

In addition, Section 15064.7(c) of the Adopted Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." The Resources Agency FSOR emphasizes that the Adopted Amendments encourage lead agencies to rely on thresholds developed by other agencies with specialized expertise, and note that air districts, in particular, may provide guidance on adopting thresholds of significance (Natural Resources Agency FSOR page 25). Thus, the Adopted Amendments do not prescribe specific significance thresholds for use by lead agencies. Rather, they emphasize the lead agency's

[3] Adopted Amendments and FSOR available at http://ceres.ca.gov/ceqa/guidelines/

discretion in developing significance thresholds, and encourage lead agencies to consider thresholds by other agencies as well.

The Adopted Amendments support the use of AB 32 as a performance-based significance threshold against which to evaluate cumulative GHG impacts from a project. According to Section 15064.4(a)(2), lead agencies may rely on performance-based standards in determining a project's impacts. In addition, Section 15064.4(b)(3) of the Adopted Amendments permits consideration by the lead agency of "the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions" when assessing the significance of impacts from greenhouse gas emissions on the environment. However, there are no performance-based standards available to evaluate a regional water supply project such as this.

The Adopted Amendments also maintain the existing CEQA Guidelines concept of consistency with an approved plan or mitigation program demonstrating a project's impacts are less than significant; however, the Adopted Amendments provide further examples of what these plans might include (Adopted Amendments § 15064(h)(3).). According to the Adopted Amendments, such a program or plan may "include[e], but [is] not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions." (*Id.*; *see also* Adopted Amendments, Appendix G, VII(b).) ("Would the project . . . [c]onflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing emissions of greenhouse gases?").

In summary, OPR and the Natural Resources Agency has attempted to make the Adopted Amendments consistent with the existing CEQA framework for environmental analysis, including but not limited to the determination of baseline conditions, determination of significance, cumulative impacts and evaluation of mitigation measures. For these reasons, OPR did not identify a threshold of significance for greenhouse gas emissions, nor did they prescribe assessment methodologies or specific mitigation measures. The Adopted Amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The Adopted Amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. The approach used in this analysis is to disclose the most recent regulatory activity, even if it is not approved, and not recommend a significance finding.

On September 30, 2008, Governor Arnold Schwarzenegger signed Senate Bill (SB) 375 (Steinberg). SB 375 focuses on housing and transportation planning decisions to reduce fossil fuel consumption and conserve farmlands and habitat. This legislation is important to achieving AB 32 goals because greenhouse gas emissions associated with land use, which includes transportation, are the single largest source of emissions in California. SB 375 provides a path for better planning by providing incentives to locate housing developments closer to where people work and go to school, allowing them to reduce vehicle miles traveled (VMT) every year.

To achieve these goals, SB 375 will:

- require the regional transportation plan for each of the state's major metropolitan areas to adopt a "sustainable community strategy" that will meet the region's target for reducing GHG emissions from cars and light trucks. These strategies would get people out of their cars by promoting smart growth principles such as: development near public transit; projects that include a mix of residential and commercial use; and projects that include affordable housing to help reduce new housing developments in outlying areas with cheaper land and reduce vehicle miles traveled (VMT).
- create incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.
- provide various forms of CEQA relief by allowing projects that are shown to conform to the preferred sustainable community strategy through the local general plans (and therefore contribute to GHG reduction) to have a more streamlined environmental review process. Specifically, if a development is consistent with the sustainable community's strategy and incorporates any mitigation measures required by a prior EIR, then the environmental review does not have to consider: a) growth-inducing impacts, or b) project-specific or cumulative impacts from cars on global climate change or the regional transportation network. In addition, a narrowly-defined group of "transit priority projects" will be exempt from CEQA review.

On October 24, 2008, the CARB released a *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significant Thresholds for Greenhouse Gases under CEQA* recommending GHG-related significance thresholds which lead agencies can use in the significance determination pursuant to OPR's request (CARB 2008). The current recommendations are a sector-specific approach to develop thresholds for projects that result in a substantial portion of the state's GHG emissions. The preliminary interim thresholds are for two sectors: 1) industrial projects, and 2) residential and commercial projects. For industrial projects that do not qualify under existing CEQA statutory or categorical exemptions, CARB recommends that GHG-related impacts may be found to be insignificant if they: (1) meet interim performance standards for construction and transportation-related emissions; and (2) emit no more than 7,000 $MTCO_2E$ from non-transportation operational sources. CARB recommends that residential and commercial projects that do not qualify under existing CEQA statutory or categorical exemptions are presumed to have a less than significant impact related to climate change if: (1) construction activities meet an interim CARB performance standard for construction-related emissions; (2) operational activities: i) meet the California Energy Commission's Tier II Energy Efficiency goal; ii) meet an interim CARB performance standard for water use; iii) meet an interim CARB performance standard for waste; and iv) meet an interim CARB performance standard for transportation; and (3) the project will emit no more than a "to be determined" limit for metric tons CO_2e per year. Although the CARB 2008 Draft Guidance indicated CARB's intent to provide final guidance to OPR before OPR issued its draft CEQA guidelines, CARB did not release final guidance before OPR's April 2009 release of its Proposed CEQA Guidelines or the July 2009 Natural Resources Agency Notice. Therefore, the approach used in this analysis is to disclose the most recent regulatory activity, even if it is not approved, and not recommend a significance finding.

In addition to current rules and regulations which also address GHG, SCAQMD plans to provide guidance to local lead agencies on determining significance for GHG in their CEQA documents

by convening a *GHG CEQA Significance Threshold Working Group* to work with SCAQMD staff on developing GHG CEQA significance thresholds. The SCAQMD began hosting monthly working group meetings in April 2008. The result of the working group meeting on October 22nd was a *Draft AQMD Staff CEQA Greenhouse Gas Significance Threshold* (SCAQMD 2008a) and the *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (SCAQMD 2008b). The Draft Threshold is intended to be interim guidance until statewide significance thresholds or guidance is established. The proposed significance threshold is a tiered approach which allows for flexibility by establishing multiple thresholds to cover a broad range of projects. However, like CARB, no thresholds have been identified for public infrastructure projects. Therefore, the approach used in this analysis is to disclose the most recent regulatory activity, even if it is not approved, and not recommend a significance finding.

The SCAQMD proposal in October 2008 included three tiers of compliance that may lead to a determination that impacts are less than significant, including: (1) projects with greenhouse gas emissions within budgets set out in approved regional plans, to be developed under the SB 375 process; (2) projects with greenhouse gas emissions that are below designated quantitative thresholds: (i) industrial projects with an incremental greenhouse gas emissions increase that falls below (or is mitigated to be less than) 10,000 $MTCO_2e/yr$; or (ii) commercial and residential projects with an incremental greenhouse gas emissions increase that falls below (or is mitigated to be less than) 3,000 $MTCO_2e/yr$, provided that such projects also meet energy efficiency and water conservation performance targets that have yet to be developed; (3) projects that purchase greenhouse gas offsets which, either alone or in combination with one of the three tiers mentioned above, achieve the target significance screening level. Because no further guidance has been issued as of April 2010 and the nature of this public infrastructure project, these recommendations are not utilized in the project's analysis; they are briefly addressed here for the purpose of full disclosure.

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for projects where the SCAQMD is the lead agency. Currently, the Board has only adopted thresholds relevant to industrial (stationary source) projects. To achieve a policy objective of capturing 90% of GHG emissions from new residential/commercial development projects and implement a "fair share" approach to reducing emission increases from each sector, SCAQMD staff has proposed combining performance standards and screening thresholds. The performance standards suggested have primarily focused on energy efficiency measures beyond Title 24 Part 6, California's building energy efficiency standards, and a screening level of 3,000 tonnes CO2e per year based on direct operational emissions. Above this screening level, project design features designed to reduce GHGs must be implemented to reduce the impact to below a level of significance. SCAQMD staff are performing additional analyses to further define the performance standards as well as coordinating with CARB's interim GHG proposal. At this time SCAQMD is waiting for CARB's recommendations for the residential/commercial sector. Once CARB adopts the statewide significance thresholds, staff will report back to the Board regarding any recommended changes or additions to the SCAQMD's interim threshold. [5]

[5] http://www.aqmd.gov/hb/2008/December/081231a.htm

Since December of 2008, the SCAQMD continued hosting the working group meetings and revised the draft threshold proposal several times although it did not officially provide these proposals in a subsequent document. The working group meeting on November 19, 2009[6] proposed two options lead agencies can select from for screening thresholds of significance for GHG emissions in residential and commercial projects. Option 1 is by land use where the numeric threshold is 3,500 tons per year of CO_2e of (tpy) for residential projects; 1,400 tpy for commercial projects; and 3,000 tpy for mixed use projects. Option 2 is a combined approach for all three land use types and is set at 3,000 tpy. There is still no applicable threshold for regional water supply projects such as this.

EMISSIONS ESTIMATES

The following analysis represents an attempt to estimate the project's GHG emissions from project build-out no sooner than 2011 primarily through the quantification of carbon dioxide emissions. As previously stated, carbon dioxide emissions accounted for approximately 84 percent of the state's total GHG emissions in 2004. Methane and nitrous oxide accounted for 5.7 and 6.8 percent, respectively. Additionally, public water facilities (including this project) are not major generators of methane or nitrous oxide emissions. Therefore, while not intended to be an all-inclusive inventory of overall GHG emissions from the project; the estimation of CO_2 from the most important construction and operation-related sources is illustrative of much of the project's contribution to GHG.

It should be noted that the release of GHG in general and CO_2 specifically into the atmosphere is not of itself an adverse environmental affect. It is the effect that increased concentrations of GHG, including CO_2 in the atmosphere, has upon the Earth's climate (i.e., climate change) and the associated consequences of climate change that result in adverse environmental effects (e.g., sea level rise, loss of snowpack, severe weather events). Although air quality modeling can estimate a project's incremental contribution of CO_2 into the atmosphere, it is not feasible to determine whether or how an individual project's relatively small incremental contribution (on a global scale) might translate into physical effects on the environment. Since the Earth's climate is determined by the complex interaction of different components of the Earth and its atmosphere, it is not possible to discern whether the presence or absence of GHG emitted by the project would result in any measurable impact that would cause climate change.

The following project activities were analyzed below for their contribution to global CO_2 emissions:

Short-Term Analysis

Construction-Related Activities

The recently updated URBEMIS model calculates carbon dioxide emissions from fuel usage by construction equipment and construction-related activities, like worker trips, for the project in tons per year (one ton equals 2,000 pounds). The URBEMIS estimate does not analyze emissions from construction-related electricity or natural gas. Construction-related electricity and natural

[6] http://www.aqmd.gov/ceqa/handbook/GHG/nov19mtg/nov19.html

gas emissions vary based on the amount of electric power used during construction and other unknown factors which make them too speculative to quantify. Life-cycle emissions associated with the manufacture of building materials are also not quantified in this analysis although they undoubtedly exist. Quantification was not attempted because of the large spatio-temporal variation in sources for building products used to construct the project and the consequent large uncertainty associated with the resulting emissions. For this reason, to attempt to quantify life-cycle emissions of materials would be speculative. This conclusion is consistent with recent guidance on quantification of emissions for commercial projects presented by the California Air Pollution Control Officer's Association guidance on CEQA and Climate Change (CAPCOA).

The following table summarizes the output results and presents the emissions estimates in metric tonnes (Mt) of CO_2 (one metric tonne equals approximately 2,205 pounds). These estimates assume that approximately 2,850 LF of pipeline can be constructed in one year using the boring/tunneling method and that 28,725 LF of pipeline can be constructed in one year using the trenching method for the Realignment Alternatives. Under worst-case conditions, according to the anticipated construction phasing, two pump stations and a reservoir could be under construction when pipeline is being constructed using both construction methods. The maximum construction-related CO_2 emissions anticipated for a given year are shown in **Table 8**, below.

Table 8, Project Construction Equipment Emissions

Construction Activity	Total Tons CO_2	Total $MtCO_2$
Boring/Tunneling	1,415.32	1,283.96
Trenching	1,533.50	1,391.17
Pump Station	456.13	413.79
Pump Station	456.13	413.79
Reservoir	613.67	556.71
Total		**4,059.42**

Evaluation of the table above indicates that an estimated total of 4,059 $MtCO_2$ emissions from construction equipment could occur in a given year.

Long-Term Analysis

Electricity-Related Emissions

Electricity used to pump water is typically generated at an off-site power plant which indirectly generates GHG emissions. Carbon dioxide emissions from electricity generation can be estimated through different methods. The method used in this analysis takes the project's annual electricity consumption and multiplies this by the average carbon intensity of electricity supplied to the California electricity grid. California depends on both electricity generated within the state and imported electricity. Depending on the year, imported electricity accounts for 22 to 32 percent of the total supply. Imported electricity has an average carbon intensity of 544 to 735 Mt/GWh (metric tonnes per gigawatt-hour) while in-state electricity has an average carbon intensity of only 187 to 280 Mt/GWh (CEC 2006a). Taking an average of all of these factors

yields the average carbon intensity for electricity supplied to the California grid and is equal to 342.12 Mt/GWh.

The following table shows the electricity consumption and resultant CO_2 emissions for each of the facilities proposed as part of the project. Details are shown in Appendix C. The 2005 PEIR was certified before the state regulations for GHG emissions reductions (AB 32) were signed. Therefore, the CO_2 emissions were not previously estimated, but are included herein to show the total annual electricity consumption when all proposed facilities are operational.

Table 9, Annual Electricity Consumption

Facility	**MWh/year**	**GWh/year**	**$MtCO_2$/yr**
2005 Project Pump Station	10,183.50	10.18	3,494.16
Wells*	9,450.00	9.45	3,242.48
Sterling Pump Station	1,339.20	1.34	459.51
Clay Street Connection Pump Station	9,776.16	9.78	3,354.40
Mockingbird Connection Pump Station	11,405.52	11.41	3,913.46
Total			**14,464.01**

* The total number of wells assumed for the project is 20; only 15 wells will potentially be used for the project within the 2005 Project Well Field if the 5 wells in the Central Feeder Connection Well Field are used.. However, only 5 wells will be operational at one time which is reflected herein for the purposes of this analysis.

Evaluation of the table above indicates that the maximum CO_2 emissions from the proposed facilities would be approximately 14,464 $MtCO_2$/year. However, as part of the E, F, and G 2008 Refinement, a hydroelectric station is proposed with the Sterling Pump Station will generate an estimated 1,113 MWh per year which will also reduce the amount of CO_2 emissions by 381.89 $MtCO_2$/year.

RECOMMENDED MITIGATION MEASURES

Due to the nature of the project and the level of estimated emissions, no mitigation is recommended to reduce GHG emissions.

CONCLUSION

The project's construction-related activities will result in an estimated total of 4,059 $MtCO_2$ emissions in a given year and the operational emissions from the pump stations and wells will be approximately 14,074 $MtCO_2$/year.

SECTION 4 – REFERENCES

REFERENCES CITED

The following documents were referred to as general information sources during preparation of this document. They are available for public review at the locations abbreviated after each listing and spelled out at the end of this section. Some of these documents are also available at public libraries and at other public agency offices.

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Location	**Address**
WMWD	Western Municipal Water District 450 Alessandro Boulevard Riverside, CA 92517
SCAQMD	South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765-4182

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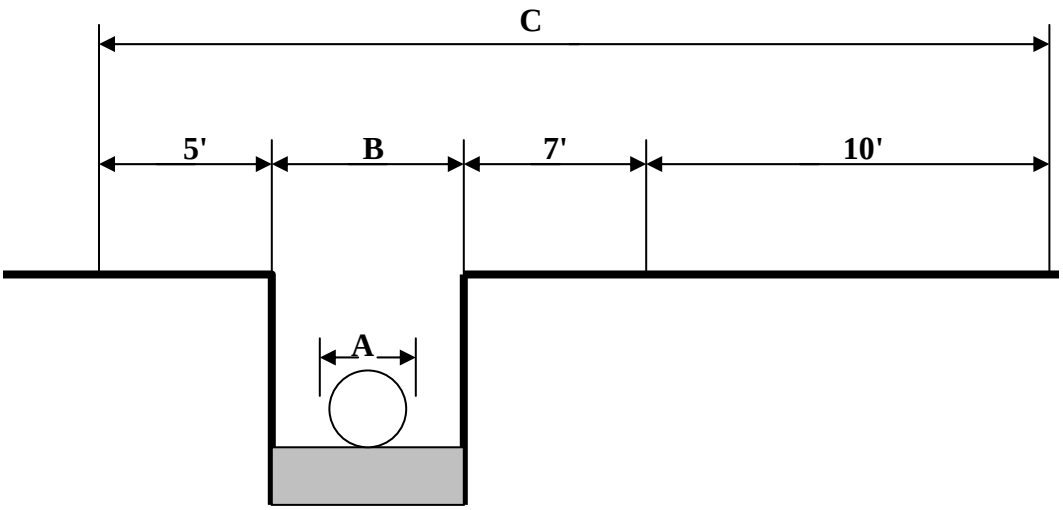
APPENDIX A

URBEMIS 2007 FOR WINDOWS OUTPUT FILES

ESTIMATING THE WATER PIPELINE DISTURBANCE AREA



Pipeline Element	Diameter	Trench Width	Total Disturbance Width	Maximum Daily Rate of Progress[1]	Total Daily Disturbance Area
	A	B	C		
Water lines	54"	8'	30'	116'/day	0.08 acres
Boring Casing	66”	NA[2]	NA[2]	NA[2]	2.02 acres[2]

Notes:
[1] Estimated daily rate of progress is length of pipeline completed per day. Variables affecting progress include road conditions (level of traffic and number of intersections), topography, terrain, groundwater levels, and soil/geological conditions.
[2] Trenching is not applicable (NA) to boring activities. Total daily disturbance area for borings (including micro-tunneling) represents approximately one acre at either end of the bore tunnel where boring equipment is operating, and haul trucks are queued to haul pipe and casing to the site or remove earthen material from boring activities off-site. An additional 0.02 acres represent the area where excavated material as a result of the boring activities is stockpiled prior to hauling.

Water Pipeline Disturbance Area

Excavation Depths*

Excavation Depths from the preliminary design report by Black & Veatch titled *Basis of Design Report, Riverside-Corona Feeder,* August 2007

Drawing #	Station #	Exc Type	Cover Depth
C-63	759	Trench	9
	760	Trench	7
	761	Trench	5
	762	Trench	6
	763	Trench	6
	764	Trench	6
	765	Trench	6
	766	Trench	6
	767	Trench	6
	768	Trench	6
	769	Trench	6
	Average		**6.27**

Drawing #	Station #	Exc Type	Cover Depth
C-64	770	Trench	6
	771	Trench	6
	772	Trench	6
	773	Trench	6
	774	Trench	6
	775	Trench	6
	776	Trench	6
	777	Trench	6
	778	Trench	6
	779	Trench	6
	780	Trench	6
	781	Trench	6
	Average		**6**

Drawing #	Station #	Exc Type	Cover Depth
C-65	782	Trench	6
	783	Trench	6
	784	Trench	6
	785	Trench	6
	786	Trench	7
	787	Trench	8
	788	Trench	8
	789	Trench	6
	790	Trench	5
	791	Trench	5
	792	Trench	6
	793	Trench	6
	Average		**6.25**

Drawing #	Station #	Exc Type	Cover Depth
C-66	794	Trench	7
	795	Trench	7
	796	Trench	8
	797	Trench	7
	798	Trench	7
	799	Trench	7
	800	Trench	6
	801	Trench	5
	802	Trench	6
	803	Trench	5
	804	Trench	10
	805	Trench	21
	Average		**8**

Drawing #	Station #	Exc Type	Cover Depth
C-67	806	Trench	19
	807	Trench	30
	808	Trench	25
	809	Bore	34
	810	Bore	42*
	811	Bore	NA
	812	Bore	NA
	813	Bore	NA
	814	Bore	NA
	815	Bore	NA
	816	Bore	NA
	817	Bore	NA
	Average		**27**

Drawing #	Station #	Exc Type	Cover Depth
C-68	818	Bore	NA
	819	Bore	NA
	820	Bore	NA
	821	Bore	NA
	822	Bore	NA
	823	Bore	NA
	824	Bore	
	825	Trench	21
	826	Trench	13
	827	Trench	9
	828	Trench	7
	829	Trench	9
	Average		**11.8**

Drawing #	Station #	Exc Type	Cover Depth
C-69	830	Trench	12
	831	Trench	10
	832	Trench	9
	833	Trench	7
	834	Trench	7
	835	Trench	7
	836	Bore	17
	837	Bore	NA
	838	Bore	NA
	839	Bore	19
	840	Trench	11
	841	Trench	9
	Average		**10.8**

Drawing #	Station #	Exc Type	Cover Depth
C-70	842	Trench	10
	843	Trench	11
	844	Trench	12
	845	Trench	11
	846	Trench	8
	847	Trench	7
	848	Trench	7
	849	Trench	8
	850	Trench	8
	851	Trench	7
	852	Trench	7
	853	Trench	6
	Average		**8.5**

Drawing #	Station #	Exc Type	Cover Depth
C-71	854	Trench	6
	855	Trench	7
	856	Trench	6
	857	Trench	7
	858	Trench	7
	859	Trench	7
	860	Trench	8
	861	Trench	8
	862	Trench	8
	863	Trench	8
	864	Trench	9
	865	Trench	9
	Average		**7.5**

Drawing #	Station #	Exc Type	Cover Depth
C-72	866	Trench	9
	867	Trench	9
	868	Trench	9
	869	Trench	9
	870	Trench	8
	871	Trench	8
	872	Trench	8
	873	Trench	8
	874	Trench	8
	875	Trench	7
	876	Trench	6
	877	Trench	7
	Average		**8**

Drawing #	Station #	Exc Type	Cover Depth
C-73	878	Trench	7
	879	Trench	7
	880	Trench	11
	881	Trench	13
	882	Trench	14
	883	Trench	14
	884	Trench	14
	885	Trench	15
	886	Trench	16
	887	Trench	16
	888	Trench	16
	889	Trench	16
	Average		**13.25**

Drawing #	Station #	Exc Type	Cover Depth
C-74	890	Trench	17
	891	Trench	18
	892	Trench	17
	893	Trench	17
	894	Trench	15
	895	Trench	12
	896	Trench	8
	897	Trench	7
	898	Trench	6
	899	Trench	6
	900	Trench	7
	901	Trench	8
	Average		**11.5**

Drawing #	Station #	Exc Type	Cover Depth
C-75	902	Trench	10
	903	Trench	12
	904	Trench	14
	905	Trench	14
	906	Trench	8
	907	Trench	7
	908	Trench	7
	909	Trench	7
	910	Trench	7
	911	Trench	6
	912	Trench	6
	913	Trench	6
	Average		**8.67**

Drawing #	Station #	Exc Type	Cover Depth
C-76	914	Trench	7
	915	Trench	7
	916	Trench	6
	917	Trench	6
	918	Trench	6
	919	Trench	6
	920	Trench	6
	921	Trench	6
	922	Trench	6
	923	Trench	6
	924	Trench	6
	925	Trench	6
	926	Trench	6
	Average		**6.15**

Drawing #	Station #	Exc Type	Cover Depth
C-77	927	Trench	6
	928	Trench	7
	929	Trench	8
	930	Trench	9
	931	Trench	8
	932	Trench	9
	933	Trench	8
	934	Trench	8
	935	Trench	7
	936	Trench	7
	937	Trench	6
	938	Trench	6
	Average		**7.42**

Drawing #	Station #	Exc Type	Cover Depth
C-78	939	Trench	6
	940	Trench	7
	941	Trench	7
	942	Trench	8
	943	Trench	8
	944	Trench	9
	945	Trench	9
	946	Trench	7
	947	Trench	8
	948	Trench	7
	949	Trench	7
	950	Trench	7
	Average		**7.5**

Drawing #	Station #	Exc Type	Cover Depth
C-79	951	Trench	7
	952	Trench	8
	953	Trench	8
	954	Trench	7
	955	Trench	7
	956	Trench	6
	957	Trench	10
	958	Trench	10
	959	Trench	9
	960	Trench	8
	961	Trench	8
	962	Trench	7
	Average		**7.92**

Drawing #	Station #	Exc Type	Cover Depth
C-80	963	Trench	7
	964	Trench	7
	965	Trench	7
	966	Trench	7
	967	Trench	8
	968	Trench	7
	969	Trench	7
	970	Trench	7
	971	Trench	8
	972	Trench	8
	973	Trench	8
	974	Trench	8
	Average		**7.42**

Drawing #	Station #	Exc Type	Cover Depth
C-81	975	Trench	8
	976	Trench	8
	977	Trench	8
	978	Trench	8
	979	Trench	8
	980	Trench	8
	981	Trench	8
	982	Trench	8
	983	Trench	8
	984	Trench	8
	985	Trench	9
	986	Trench	9
	Average		**8.17**

Drawing #	Station #	Exc Type	Cover Depth
C-82	987	Trench	9
	988	Trench	7
	989	Trench	6
	990	Trench	6
	991	Trench	6
	992	Trench	6
	993	Trench	6
	994	Trench	6
	995	Trench	6
	996	Trench	6
	997	Trench	5
	Average		**6.27**

Drawing #	Station #	Exc Type	Cover Depth
C-83	998	Trench	6
	999	Trench	6
	1000	Trench	6
	1001	Trench	6
	1002	Trench	6
	1003	Trench	6
	1004	Trench	6
	1005	Trench	6
	1006	Trench	6
	1007	Trench	6
	1008	Trench	7
	1009	Trench	7
	1010	Trench	9
	1011	Trench	19
	Average		**7.29**

Drawing #	Station #	Exc Type	Cover Depth
C-84	1012	Bore	34
	1013	Bore	NA
	1014	Bore	37
	1015	Trench	20
	1016	Trench	7
	1017	Trench	7
	1018	Trench	6
	1019	Trench	5
	1020	Trench	6
	1021	Trench	5
	1022	Trench	6
	Average		**11**

Drawing #	Station #	Exc Type	Cover Depth
C-85	1023	Trench	8
	1024	Trench	8
	1025	Trench	8
	1026	Trench	8
	1027	Trench	7
	1028	Trench	8
	1029	Trench	8
	1030	Trench	9
	1031	Trench	8
	1032	Trench	9
	1033	Trench	10
	1034	Trench	10
	Average		**8.42**

Drawing #	Station #	Exc Type	Cover Depth
C-86	1035	Trench	10
	1036	Trench	12
	1037	Trench	12
	1038	Trench	12
	1039	Trench	11
	1040	Trench	10
	1041	Trench	9
	1042	Trench	9
	1043	Trench	10
	1044	Trench	10
	1045	Trench	9
	1046	Trench	12
	Average		**10.5**

Drawing #	Station #	Exc Type	Cover Depth
C-87	1047	Trench	11
	1048	Trench	8
	1049	Trench	6
	1050	Trench	6
	1051	Trench	6
	1052	Trench	6
	1053	Trench	7
	1054	Trench	6
	1055	Trench	7
	1056	Trench	7
	1057	Trench	8
	1058	Trench	8
	Average		**7.17**

Drawing #	Station #	Exc Type	Cover Depth
C-88	1059	Trench	8
	1060	Trench	10
	1061	Trench	12
	1062	Trench	6
	1063	Trench	8
	1064	Trench	7
	1065	Trench	8
	1066	Trench	7
	1067	Trench	7
	1068	Trench	7
	1069	Trench	8
	1070	Trench	7
	Average		**7.92**

Drawing #	Station #	Exc Type	Cover Depth
C-89	1071	Trench	7
	1072	Trench	8
	1073	Trench	9
	1074	Trench	8
	Average		**8**

Central Reach Avg Depth

Drawing #	Avg Depth
C-63	6.27
C-64	6
C-65	6.25
C-66	8
C-67	27
C-68	11.8
C-69	10.8
C-70	8.5
C-71	7.5
C-72	8
C-73	13.25
C-74	11.5
C-75	8.67
C-76	6.15
C-77	7.42
C-78	7.5
C-79	7.92
C-80	7.42
C-81	8.17
C-82	6.27
C-83	7.29
C-84	11
C-85	8.42
C-86	10.5
C-87	7.17
C-88	7.92
C-89	8
AVG	**9.06**

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Boring.urb924

Project Name: Central Reach Boring

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	25.36	254.97	92.98	0.01	193.71	10.08	203.79	40.46	9.27	49.73	29,796.37
2010 TOTALS (lbs/day mitigated)	25.36	254.97	92.98	0.01	100.38	10.08	110.46	20.97	9.27	30.24	29,796.37

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-5/13/2010 Active Days: 95	**25.36**	**254.97**	**92.98**	**0.01**	**193.71**	**10.08**	**203.79**	**40.46**	**9.27**	**49.73**	**29,796.37**
Fine Grading 01/01/2010-05/13/2010	24.88	248.30	90.60	0.00	193.68	9.82	203.50	40.45	9.03	49.48	28,859.46
Fine Grading Dust	0.00	0.00	0.00	0.00	193.66	0.00	193.66	40.44	0.00	40.44	0.00
Fine Grading Off Road Diesel	24.74	247.35	87.70	0.00	0.00	9.78	9.78	0.00	9.00	9.00	28,436.94
Fine Grading On Road Diesel	0.06	0.79	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	111.54
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-05/13/2010	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

Total Acres Disturbed: 14.14

Maximum Daily Acreage Disturbed: 2.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1470 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 26.32

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 24 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 24 hours per day

2 Generator Sets (549 hp) operating at a 0.74 load factor for 24 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 24 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 24 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 24 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2010 - 5/13/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 221.05

Off-Road Equipment:

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-5/13/2010 Active Days: 95	**25.36**	**254.97**	**92.98**	**0.01**	100.38	**10.08**	110.46	20.97	**9.27**	30.24	**29,796.37**
Fine Grading 01/01/2010-05/13/2010	24.88	248.30	90.60	0.00	100.35	9.82	110.17	20.96	9.03	29.99	28,859.46
Fine Grading Dust	0.00	0.00	0.00	0.00	100.34	0.00	100.34	20.95	0.00	20.95	0.00
Fine Grading Off Road Diesel	24.74	247.35	87.70	0.00	0.00	9.78	9.78	0.00	9.00	9.00	28,436.94
Fine Grading On Road Diesel	0.06	0.79	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	111.54
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-05/13/2010	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Boring.urb924

Project Name: Central Reach Boring

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	25.36	254.97	92.98	0.01	193.71	10.08	203.79	40.46	9.27	49.73	29,796.37
2010 TOTALS (lbs/day mitigated)	25.36	254.97	92.98	0.01	100.38	10.08	110.46	20.97	9.27	30.24	29,796.37

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-5/13/2010 Active Days: 95	**25.36**	**254.97**	**92.98**	**0.01**	**193.71**	**10.08**	**203.79**	**40.46**	**9.27**	**49.73**	**29,796.37**
Fine Grading 01/01/2010-05/13/2010	24.88	248.30	90.60	0.00	193.68	9.82	203.50	40.45	9.03	49.48	28,859.46
Fine Grading Dust	0.00	0.00	0.00	0.00	193.66	0.00	193.66	40.44	0.00	40.44	0.00
Fine Grading Off Road Diesel	24.74	247.35	87.70	0.00	0.00	9.78	9.78	0.00	9.00	9.00	28,436.94
Fine Grading On Road Diesel	0.06	0.79	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	111.54
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-05/13/2010	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

Total Acres Disturbed: 14.14

Maximum Daily Acreage Disturbed: 2.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1470 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 26.32

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 24 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 24 hours per day

2 Generator Sets (549 hp) operating at a 0.74 load factor for 24 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 24 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 24 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 24 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2010 - 5/13/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 221.05

Off-Road Equipment:

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-5/13/2010 Active Days: 95	**25.36**	**254.97**	**92.98**	**0.01**	100.38	**10.08**	110.46	20.97	**9.27**	30.24	**29,796.37**
Fine Grading 01/01/2010-05/13/2010	24.88	248.30	90.60	0.00	100.35	9.82	110.17	20.96	9.03	29.99	28,859.46
Fine Grading Dust	0.00	0.00	0.00	0.00	100.34	0.00	100.34	20.95	0.00	20.95	0.00
Fine Grading Off Road Diesel	24.74	247.35	87.70	0.00	0.00	9.78	9.78	0.00	9.00	9.00	28,436.94
Fine Grading On Road Diesel	0.06	0.79	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	111.54
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-05/13/2010	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.48	6.67	2.38	0.01	0.03	0.26	0.29	0.01	0.24	0.25	936.91
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Trenching.urb924

Project Name: Central Reach Trenching

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	14.90	112.91	61.09	0.05	61.81	6.85	68.66	12.93	6.30	19.23	12,366.88
2010 TOTALS (lbs/day mitigated)	14.90	112.91	61.09	0.05	32.11	6.85	38.96	6.73	6.30	13.03	12,366.88

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-12/14/2010 Active Days: 248	**14.90**	**112.91**	**61.09**	**0.05**	**61.81**	**6.85**	**68.66**	**12.93**	**6.30**	**19.23**	**12,366.88**
Asphalt 01/01/2010-12/14/2010	5.43	35.07	21.38	0.00	0.01	2.66	2.67	0.00	2.45	2.45	3,107.16
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.35	34.93	19.03	0.00	0.00	2.65	2.65	0.00	2.44	2.44	2,826.45
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Fine Grading 01/01/2010-12/14/2010	7.37	48.49	29.23	0.01	61.66	3.05	64.71	12.88	2.81	15.69	5,137.53
Fine Grading Dust	0.00	0.00	0.00	0.00	61.64	0.00	61.64	12.87	0.00	12.87	0.00
Fine Grading Off Road Diesel	7.15	46.28	25.89	0.00	0.00	2.96	2.96	0.00	2.73	2.73	4,537.38
Fine Grading On Road Diesel	0.15	2.06	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08	289.17
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-12/14/2010	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description
Total Acres Disturbed: 19.84
Maximum Daily Acreage Disturbed: 0.08
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 515.56 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 68.23
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
2 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/1/2010 - 12/14/2010 - Haul Truck Emissions for Pipeline
Total Acres Disturbed: 20.08
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 972.58
Off-Road Equipment:

Phase: Paving 1/1/2010 - 12/14/2010 - Default Paving Description
Acres to be Paved: 0.02
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-12/14/2010 Active Days: 248	**14.90**	**112.91**	**61.09**	**0.05**	32.11	**6.85**	38.96	6.73	**6.30**	13.03	**12,366.88**
Asphalt 01/01/2010-12/14/2010	5.43	35.07	21.38	0.00	0.01	2.66	2.67	0.00	2.45	2.45	3,107.16
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.35	34.93	19.03	0.00	0.00	2.65	2.65	0.00	2.44	2.44	2,826.45
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Fine Grading 01/01/2010-12/14/2010	7.37	48.49	29.23	0.01	31.96	3.05	35.01	6.68	2.81	9.48	5,137.53
Fine Grading Dust	0.00	0.00	0.00	0.00	31.93	0.00	31.93	6.67	0.00	6.67	0.00
Fine Grading Off Road Diesel	7.15	46.28	25.89	0.00	0.00	2.96	2.96	0.00	2.73	2.73	4,537.38
Fine Grading On Road Diesel	0.15	2.06	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08	289.17
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-12/14/2010	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Trenching.urb924

Project Name: Central Reach Trenching

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	14.90	112.91	61.09	0.05	61.81	6.85	68.66	12.93	6.30	19.23	12,366.88
2010 TOTALS (lbs/day mitigated)	14.90	112.91	61.09	0.05	32.11	6.85	38.96	6.73	6.30	13.03	12,366.88

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-12/14/2010 Active Days: 248	**14.90**	**112.91**	**61.09**	**0.05**	**61.81**	**6.85**	**68.66**	**12.93**	**6.30**	**19.23**	**12,366.88**
Asphalt 01/01/2010-12/14/2010	5.43	35.07	21.38	0.00	0.01	2.66	2.67	0.00	2.45	2.45	3,107.16
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.35	34.93	19.03	0.00	0.00	2.65	2.65	0.00	2.44	2.44	2,826.45
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Fine Grading 01/01/2010-12/14/2010	7.37	48.49	29.23	0.01	61.66	3.05	64.71	12.88	2.81	15.69	5,137.53
Fine Grading Dust	0.00	0.00	0.00	0.00	61.64	0.00	61.64	12.87	0.00	12.87	0.00
Fine Grading Off Road Diesel	7.15	46.28	25.89	0.00	0.00	2.96	2.96	0.00	2.73	2.73	4,537.38
Fine Grading On Road Diesel	0.15	2.06	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08	289.17
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-12/14/2010	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

12/6/2009 02:27:21 PM

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description

Total Acres Disturbed: 19.84

Maximum Daily Acreage Disturbed: 0.08

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 515.56 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 68.23

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/1/2010 - 12/14/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 20.08

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 972.58

Off-Road Equipment:

Phase: Paving 1/1/2010 - 12/14/2010 - Default Paving Description

Acres to be Paved: 0.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

12/6/2009 02:27:21 PM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-12/14/2010 Active Days: 248	**14.90**	**112.91**	**61.09**	**0.05**	32.11	**6.85**	38.96	6.73	**6.30**	13.03	**12,366.88**
Asphalt 01/01/2010-12/14/2010	5.43	35.07	21.38	0.00	0.01	2.66	2.67	0.00	2.45	2.45	3,107.16
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.35	34.93	19.03	0.00	0.00	2.65	2.65	0.00	2.44	2.44	2,826.45
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Fine Grading 01/01/2010-12/14/2010	7.37	48.49	29.23	0.01	31.96	3.05	35.01	6.68	2.81	9.48	5,137.53
Fine Grading Dust	0.00	0.00	0.00	0.00	31.93	0.00	31.93	6.67	0.00	6.67	0.00
Fine Grading Off Road Diesel	7.15	46.28	25.89	0.00	0.00	2.96	2.96	0.00	2.73	2.73	4,537.38
Fine Grading On Road Diesel	0.15	2.06	0.74	0.00	0.01	0.08	0.09	0.00	0.07	0.08	289.17
Fine Grading Worker Trips	0.08	0.15	2.61	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.98
Mass Grading 01/01/2010-12/14/2010	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	2.10	29.36	10.48	0.04	0.14	1.14	1.28	0.05	1.05	1.09	4,122.19
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description

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

PM10: 61% PM25: 61%

10/26/2009 11:12:55 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Pump Station.urb924

Project Name: Mockingbird Connection Pump Station

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.91	50.70	22.03	0.02	20.03	2.48	22.06	4.19	2.28	6.05	5,708.12
2010 TOTALS (lbs/day mitigated)	5.91	50.70	22.03	0.02	10.39	2.48	12.42	2.17	2.28	4.04	5,708.12

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	4.66	39.79	19.24	0.01	**20.03**	2.03	**22.06**	**4.19**	1.87	**6.05**	4,167.72
Fine Grading 01/01/2010-01/31/2010	4.66	39.79	19.24	0.01	20.03	2.03	22.06	4.19	1.87	6.05	4,167.72
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	4.31	35.49	16.42	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,418.85
Fine Grading On Road Diesel	0.30	4.23	1.51	0.01	0.02	0.16	0.18	0.01	0.15	0.16	593.38
Fine Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-8/13/2010 Active Days: 140	5.91	50.70	22.03	0.02	0.08	2.48	2.56	0.03	2.28	2.31	5,708.12
Building 02/01/2010-08/15/2010	4.61	32.59	15.56	0.00	0.00	1.78	1.78	0.00	1.63	1.63	3,165.08
Building Off Road Diesel	4.61	32.56	15.52	0.00	0.00	1.77	1.77	0.00	1.63	1.63	3,156.39
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18

Mass Grading 02/01/2010-08/15/2010	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 8/16/2010-8/27/2010 Active Days: 10	4.74	26.26	14.49	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,559.35
Asphalt 08/16/2010-08/28/2010	3.88	26.26	14.48	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,558.11
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.62	24.32	11.74	0.00	0.00	1.75	1.75	0.00	1.61	1.61	2,052.90
Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.42
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Coating 08/16/2010-08/28/2010	0.86	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Architectural Coating	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 140

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

10/26/2009 11:12:55 AM

Phase: Mass Grading 2/1/2010 - 8/15/2010 - Haul Truck Emissions for construction materials
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 600
Off-Road Equipment:

Phase: Paving 8/16/2010 - 8/28/2010 - Default Paving Description
Acres to be Paved: 0.25
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
1 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Building Construction 2/1/2010 - 8/15/2010 - Pump Station Construction
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day
1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
2 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Architectural Coating 8/16/2010 - 8/28/2010 - Pump Station Painting/Coating
Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50
Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

10/26/2009 11:12:55 AM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	4.66	39.79	19.24	0.01	10.39	2.03	12.42	2.17	1.87	4.04	4,167.72
Fine Grading 01/01/2010-01/31/2010	4.66	39.79	19.24	0.01	10.39	2.03	12.42	2.17	1.87	4.04	4,167.72
Fine Grading Dust	0.00	0.00	0.00	0.00	10.36	0.00	10.36	2.16	0.00	2.16	0.00
Fine Grading Off Road Diesel	4.31	35.49	16.42	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,418.85
Fine Grading On Road Diesel	0.30	4.23	1.51	0.01	0.02	0.16	0.18	0.01	0.15	0.16	593.38
Fine Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-8/13/2010 Active Days: 140	5.91	50.70	22.03	0.02	0.08	2.48	2.56	0.03	2.28	2.31	5,708.12
Building 02/01/2010-08/15/2010	4.61	32.59	15.56	0.00	0.00	1.78	1.78	0.00	1.63	1.63	3,165.08
Building Off Road Diesel	4.61	32.56	15.52	0.00	0.00	1.77	1.77	0.00	1.63	1.63	3,156.39
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Mass Grading 02/01/2010-08/15/2010	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 8/16/2010-8/27/2010 Active Days: 10	4.74	26.26	14.49	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,559.35
Asphalt 08/16/2010-08/28/2010	3.88	26.26	14.48	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,558.11
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.62	24.32	11.74	0.00	0.00	1.75	1.75	0.00	1.61	1.61	2,052.90
Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.42
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Coating 08/16/2010-08/28/2010	0.86	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Architectural Coating	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Pump Station.urb924

Project Name: Mockingbird Connection Pump Station

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.91	50.70	22.03	0.02	20.03	2.48	22.06	4.19	2.28	6.05	5,708.12
2010 TOTALS (lbs/day mitigated)	5.91	50.70	22.03	0.02	10.39	2.48	12.42	2.17	2.28	4.04	5,708.12

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	4.66	39.79	19.24	0.01	**20.03**	2.03	**22.06**	**4.19**	1.87	**6.05**	4,167.72
Fine Grading 01/01/2010-01/31/2010	4.66	39.79	19.24	0.01	20.03	2.03	22.06	4.19	1.87	6.05	4,167.72
Fine Grading Dust	0.00	0.00	0.00	0.00	20.00	0.00	20.00	4.18	0.00	4.18	0.00
Fine Grading Off Road Diesel	4.31	35.49	16.42	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,418.85
Fine Grading On Road Diesel	0.30	4.23	1.51	0.01	0.02	0.16	0.18	0.01	0.15	0.16	593.38
Fine Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-8/13/2010 Active Days: 140	5.91	50.70	22.03	0.02	0.08	2.48	2.56	0.03	2.28	2.31	5,708.12
Building 02/01/2010-08/15/2010	4.61	32.59	15.56	0.00	0.00	1.78	1.78	0.00	1.63	1.63	3,165.08
Building Off Road Diesel	4.61	32.56	15.52	0.00	0.00	1.77	1.77	0.00	1.63	1.63	3,156.39
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18

Mass Grading 02/01/2010-08/15/2010	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 8/16/2010-8/27/2010 Active Days: 10	4.74	26.26	14.49	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,559.35
Asphalt 08/16/2010-08/28/2010	3.88	26.26	14.48	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,558.11
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.62	24.32	11.74	0.00	0.00	1.75	1.75	0.00	1.61	1.61	2,052.90
Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.42
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Coating 08/16/2010-08/28/2010	0.86	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Architectural Coating	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 140

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

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Phase: Mass Grading 2/1/2010 - 8/15/2010 - Haul Truck Emissions for construction materials

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 600

Off-Road Equipment:

Phase: Paving 8/16/2010 - 8/28/2010 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Building Construction 2/1/2010 - 8/15/2010 - Pump Station Construction

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

2 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Architectural Coating 8/16/2010 - 8/28/2010 - Pump Station Painting/Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	4.66	39.79	19.24	0.01	10.39	2.03	12.42	2.17	1.87	4.04	4,167.72
Fine Grading 01/01/2010-01/31/2010	4.66	39.79	19.24	0.01	10.39	2.03	12.42	2.17	1.87	4.04	4,167.72
Fine Grading Dust	0.00	0.00	0.00	0.00	10.36	0.00	10.36	2.16	0.00	2.16	0.00
Fine Grading Off Road Diesel	4.31	35.49	16.42	0.00	0.00	1.86	1.86	0.00	1.71	1.71	3,418.85
Fine Grading On Road Diesel	0.30	4.23	1.51	0.01	0.02	0.16	0.18	0.01	0.15	0.16	593.38
Fine Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-8/13/2010 Active Days: 140	5.91	50.70	22.03	0.02	0.08	2.48	2.56	0.03	2.28	2.31	5,708.12
Building 02/01/2010-08/15/2010	4.61	32.59	15.56	0.00	0.00	1.78	1.78	0.00	1.63	1.63	3,165.08
Building Off Road Diesel	4.61	32.56	15.52	0.00	0.00	1.77	1.77	0.00	1.63	1.63	3,156.39
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Mass Grading 02/01/2010-08/15/2010	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	1.30	18.11	6.46	0.02	0.08	0.70	0.79	0.03	0.65	0.67	2,543.04
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 8/16/2010-8/27/2010 Active Days: 10	4.74	26.26	14.49	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,559.35
Asphalt 08/16/2010-08/28/2010	3.88	26.26	14.48	0.01	0.02	1.83	1.85	0.01	1.68	1.69	2,558.11
Paving Off-Gas	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.62	24.32	11.74	0.00	0.00	1.75	1.75	0.00	1.61	1.61	2,052.90
Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.42
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Coating 08/16/2010-08/28/2010	0.86	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Architectural Coating	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Tank.urb924

Project Name: Mockingbird Reservoir

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.68	47.19	28.75	0.04	80.01	2.39	82.40	16.71	2.20	18.91	6,878.37
2010 TOTALS (lbs/day mitigated)	5.68	47.19	28.75	0.04	41.46	2.39	43.85	8.66	2.20	10.86	6,878.37

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	**5.68**	46.79	25.53	0.00	**80.01**	**2.39**	**82.40**	**16.71**	**2.20**	**18.91**	4,461.24
Mass Grading 01/01/2010-01/31/2010	5.68	46.79	25.53	0.00	80.01	2.39	82.40	16.71	2.20	18.91	4,461.24
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	5.55	45.51	23.80	0.00	0.00	2.34	2.34	0.00	2.15	2.15	4,136.22
Mass Grading On Road Diesel	0.09	1.21	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.54
Mass Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-2/12/2010 Active Days: 10	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32

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Time Slice 2/15/2010-3/26/2010 Active Days: 30	4.43	42.97	27.24	0.04	0.15	1.95	2.09	0.05	1.79	1.84	6,285.00
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 02/15/2010-03/26/2010	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 3/29/2010-4/7/2010 Active Days: 8	4.73	**47.19**	**28.75**	**0.04**	0.17	2.11	2.28	0.06	1.94	1.99	**6,878.37**
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 03/29/2010-04/07/2010	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/8/2010-4/29/2010 Active Days: 16	4.00	36.93	25.08	0.03	0.12	1.71	1.83	0.04	1.57	1.61	5,437.32
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32

Fine Grading 04/08/2010-04/29/2010	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/30/2010-11/30/2010 Active Days: 153	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 12/1/2010-12/15/2010 Active Days: 11	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Asphalt 12/01/2010-12/15/2010	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.48	23.70	11.86	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,096.21
Paving On Road Diesel	0.07	0.98	0.35	0.00	0.00	0.04	0.04	0.00	0.04	0.04	138.31
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79

Phase Assumptions

Phase: Fine Grading 3/29/2010 - 4/7/2010 - Concrete hauling - 25 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

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Phase: Fine Grading 4/8/2010 - 4/29/2010 - Concrete hauling - 8 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
  20 lbs per acre-day
On Road Truck Travel (VMT): 160
Off-Road Equipment:

Phase: Fine Grading 2/15/2010 - 3/26/2010 - Steel reinforcement hauling - 3 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
  20 lbs per acre-day
On Road Truck Travel (VMT): 360
Off-Road Equipment:

Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 4
Fugitive Dust Level of Detail: Default
  20 lbs per acre-day
On Road Truck Travel (VMT): 40
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 12/1/2010 - 12/15/2010 - Default Paving Description
Acres to be Paved: 1
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

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Phase: Building Construction 2/1/2010 - 11/30/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	**5.68**	46.79	25.53	0.00	41.46	**2.39**	43.85	8.66	**2.20**	10.86	4,461.24
Mass Grading 01/01/2010-01/31/2010	5.68	46.79	25.53	0.00	41.46	2.39	43.85	8.66	2.20	10.86	4,461.24
Mass Grading Dust	0.00	0.00	0.00	0.00	41.45	0.00	41.45	8.66	0.00	8.66	0.00
Mass Grading Off Road Diesel	5.55	45.51	23.80	0.00	0.00	2.34	2.34	0.00	2.15	2.15	4,136.22
Mass Grading On Road Diesel	0.09	1.21	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.54
Mass Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-2/12/2010 Active Days: 10	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 2/15/2010-3/26/2010 Active Days: 30	4.43	42.97	27.24	0.04	0.15	1.95	2.09	0.05	1.79	1.84	6,285.00
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32

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Fine Grading 02/15/2010-03/26/2010	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 3/29/2010-4/7/2010 Active Days: 8	4.73	**47.19**	**28.75**	**0.04**	0.17	2.11	2.28	0.06	1.94	1.99	**6,878.37**
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 03/29/2010-04/07/2010	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/8/2010-4/29/2010 Active Days: 16	4.00	36.93	25.08	0.03	0.12	1.71	1.83	0.04	1.57	1.61	5,437.32
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 04/08/2010-04/29/2010	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 4/30/2010-11/30/2010 Active Days: 153	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 12/1/2010-12/15/2010 Active Days: 11	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Asphalt 12/01/2010-12/15/2010	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.48	23.70	11.86	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,096.21
Paving On Road Diesel	0.07	0.98	0.35	0.00	0.00	0.04	0.04	0.00	0.04	0.04	138.31
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\2007\07-0377\Air\URBEMIS\Tank.urb924

Project Name: Mockingbird Reservoir

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	5.68	47.19	28.75	0.04	80.01	2.39	82.40	16.71	2.20	18.91	6,878.37
2010 TOTALS (lbs/day mitigated)	5.68	47.19	28.75	0.04	41.46	2.39	43.85	8.66	2.20	10.86	6,878.37

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	**5.68**	46.79	25.53	0.00	**80.01**	**2.39**	**82.40**	**16.71**	**2.20**	**18.91**	4,461.24
Mass Grading 01/01/2010-01/31/2010	5.68	46.79	25.53	0.00	80.01	2.39	82.40	16.71	2.20	18.91	4,461.24
Mass Grading Dust	0.00	0.00	0.00	0.00	80.00	0.00	80.00	16.71	0.00	16.71	0.00
Mass Grading Off Road Diesel	5.55	45.51	23.80	0.00	0.00	2.34	2.34	0.00	2.15	2.15	4,136.22
Mass Grading On Road Diesel	0.09	1.21	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.54
Mass Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-2/12/2010 Active Days: 10	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32

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Time Slice 2/15/2010-3/26/2010 Active Days: 30	4.43	42.97	27.24	0.04	0.15	1.95	2.09	0.05	1.79	1.84	6,285.00
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 02/15/2010-03/26/2010	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 3/29/2010-4/7/2010 Active Days: 8	4.73	**47.19**	**28.75**	**0.04**	0.17	2.11	2.28	0.06	1.94	1.99	**6,878.37**
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 03/29/2010-04/07/2010	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/8/2010-4/29/2010 Active Days: 16	4.00	36.93	25.08	0.03	0.12	1.71	1.83	0.04	1.57	1.61	5,437.32
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32

Fine Grading 04/08/2010-04/29/2010	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/30/2010-11/30/2010 Active Days: 153	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 12/1/2010-12/15/2010 Active Days: 11	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Asphalt 12/01/2010-12/15/2010	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.48	23.70	11.86	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,096.21
Paving On Road Diesel	0.07	0.98	0.35	0.00	0.00	0.04	0.04	0.00	0.04	0.04	138.31
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79

Phase Assumptions

Phase: Fine Grading 3/29/2010 - 4/7/2010 - Concrete hauling - 25 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

Phase: Fine Grading 4/8/2010 - 4/29/2010 - Concrete hauling - 8 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 160

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Off-Road Equipment:

Phase: Fine Grading 2/15/2010 - 3/26/2010 - Steel reinforcement hauling - 3 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 360
Off-Road Equipment:

Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 4
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 40
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 12/1/2010 - 12/15/2010 - Default Paving Description
Acres to be Paved: 1
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Building Construction 2/1/2010 - 11/30/2010 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2010-1/29/2010 Active Days: 21	**5.68**	46.79	25.53	0.00	41.46	**2.39**	43.85	8.66	**2.20**	10.86	4,461.24
Mass Grading 01/01/2010-01/31/2010	5.68	46.79	25.53	0.00	41.46	2.39	43.85	8.66	2.20	10.86	4,461.24
Mass Grading Dust	0.00	0.00	0.00	0.00	41.45	0.00	41.45	8.66	0.00	8.66	0.00
Mass Grading Off Road Diesel	5.55	45.51	23.80	0.00	0.00	2.34	2.34	0.00	2.15	2.15	4,136.22
Mass Grading On Road Diesel	0.09	1.21	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.54
Mass Grading Worker Trips	0.04	0.08	1.30	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.49
Time Slice 2/1/2010-2/12/2010 Active Days: 10	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 2/15/2010-3/26/2010 Active Days: 30	4.43	42.97	27.24	0.04	0.15	1.95	2.09	0.05	1.79	1.84	6,285.00
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 02/15/2010-03/26/2010	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.78	10.87	3.88	0.01	0.05	0.42	0.47	0.02	0.39	0.40	1,525.82
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 3/29/2010-4/7/2010 Active Days: 8	4.73	**47.19**	**28.75**	**0.04**	0.17	2.11	2.28	0.06	1.94	1.99	**6,878.37**
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 03/29/2010-04/07/2010	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	1.08	15.09	5.39	0.02	0.07	0.59	0.66	0.02	0.54	0.56	2,119.20
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/8/2010-4/29/2010 Active Days: 16	4.00	36.93	25.08	0.03	0.12	1.71	1.83	0.04	1.57	1.61	5,437.32
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Fine Grading 04/08/2010-04/29/2010	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.35	4.83	1.72	0.01	0.02	0.19	0.21	0.01	0.17	0.18	678.14
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Time Slice 4/30/2010-11/30/2010 Active Days: 153	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building 02/01/2010-11/30/2010	3.65	32.10	23.36	0.02	0.10	1.52	1.62	0.03	1.40	1.43	4,759.17
Building Off Road Diesel	2.75	23.35	9.95	0.00	0.00	1.17	1.17	0.00	1.07	1.07	2,335.51
Building Vendor Trips	0.66	8.31	5.77	0.01	0.05	0.33	0.38	0.02	0.30	0.32	1,513.35
Building Worker Trips	0.23	0.44	7.64	0.01	0.04	0.03	0.07	0.02	0.02	0.04	910.32
Time Slice 12/1/2010-12/15/2010 Active Days: 11	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Asphalt 12/01/2010-12/15/2010	3.85	24.81	14.30	0.00	0.02	1.75	1.77	0.01	1.61	1.62	2,483.31
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.48	23.70	11.86	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,096.21
Paving On Road Diesel	0.07	0.98	0.35	0.00	0.00	0.04	0.04	0.00	0.04	0.04	138.31
Paving Worker Trips	0.06	0.12	2.09	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

APPENDIX B

LST ANALYSIS INFORMATION

Localized Significance Threshold Calculations

SCAQMD LINEAR REGRESSION METHOD*

Three-Acre Threshold

CO	
X-value Area of Site (acreage)	y-value LST (mass/day) **
2	883
5	1577
3	**1114**

NO_X	
X-value Area of Site (acreage)	y-value LST (mass/day) **
2	170
5	270
3	**203**

PM-10	
X-value Area of Site (acreage)	y-value LST (mass/day) **
2	7
5	13
3	**8**

PM-2.5	
X-value Area of Site (acreage)	y-value LST (mass/day) **
2	4
5	8
3	**5**

Notes: Value calculated shown in bold
* Excel formula obtained from Appendix K of LST Methodology.
Acreages and corresponding LST values obtained from Appendix C of LST methodology.
** receptor distance is 25 meters

APPENDIX C

GHG EMISSIONS ESTIMATES

Construction Emissions

Boring/Tunneling

Year 2010	Annual Tons	Annual MT CO2
Off-Road Diesel	1,350.75	1,225.38
On-Road Diesel-soil hauling	5.30	4.81
Worker trips	14.77	13.40
On-Road Diesel-pipe hauling	44.50	40.37
	Total	1,283.96

Trenching

Year 2010	Annual Tons	Annual MT CO2
Off-Road Diesel	562.64	510.42
On-Road Diesel-soil hauling	35.86	32.53
Trenching Worker trips	38.56	34.98
On-Road Diesel-pipe hauling	511.15	463.71
Asphalt	385.29	349.53
	Total	1,391.17

Pump Station

Year 2010	Annual Tons	Annual MT CO2
Site Grading	43.76	39.70
Building Construction	399.57	362.48
Asphalt	12.79	11.60
Painting/Coating	0.01	0.01
	Total	413.79

Reservoir

Year 2010	Annual Tons	Annual MT CO2
Site Grading	46.84	42.49
Building Construction	553.17	501.83
Asphalt	13.66	12.39
	Total	556.71

Construction Method	Total Tons CO2	Total MT CO2
Boring	1,415.32	1,283.96
Trenching	1,533.50	1,391.17
Pump Station	456.13	413.79
Second Pump Station	456.13	413.79
Reservoir	613.67	556.71
	Total	4,059.42

* Annual tons obtained from URBEMIS output.

Electricity Usage and GHG Emissions

Electricity Usage Calculations

2005 Project Alignment

Facility	Hp	Quantity	Wh/day Consumed	MWh/year Consumed
San Bernardino Pump Station	2,500	1	27,900,000.00	10,183.50
Wells *	350	5	NA	9,450.00
			Total	**19,633.50**

Realignment Alternative

Facility	Hp	Quantity	Wh/day Consumed	MWh/year Consumed
San Bernardino Pump	2,500	1	27,900,000.00	10,183.50
Wells*	350	5	NA	9,450.00
Sterling Pump Station*	4,000	1	44,640,000.00	1,339.20
			Subtotal Consumed	20,972.70

	Drop (feet)	KWh generated @ 35% efficiency	Wh/day Generated	MWh/year Generated
Sterling Hydroelectric Station[1]	300	265	6,360,000.00	1,113.00
			Total	**19,859.70**

Realignment Alternative with Additional Connections

Facility	Hp	Quantity	Wh/day Consumed	MWh/year Consumed
San Bernardino Pump Station	2,500	1	27,900,000.00	10,183.50
Wells*	350	5	NA	9,450.00
Sterling Pump Station*	4,000	1	44,640,000.00	1,339.20
Clay Street Pump Station	2,400	1	26,784,000.00	9,776.16
Mockingbird Pump Station	2,800	1	31,248,000.00	11,405.52
			Subtotal Consume	42,154.38
	Drop (feet)	**KWh generated @ 35% efficiency**	**Wh/day Generated**	**MWh/year Generated**
Sterling Hydroelectric Station[1]	300	265	6,360,000.00	1,113.00
			Total	**41,041.38**

Note: 2005 Project Alternative - Pump Station assumed to operate at 62% capacity 24 hours a day. Wells assumed to operate 7,200 hours per year. 750 watt-hours per horsepower was used.
Realignment Alternative - Sterling Pump Station assumed to operate at 62% capacity for 24 hours per day.

*30 days used insead of 365 days as the Sterling Pump Station will only run a few weeks a year while the Mills Water Treatment Plant is out of service for maintenace.

[1] Estimated to run for approximately 25 weeks a year

Realignment Alternative with Additional Facilities - Clay Street and Mockingbird Pump Stations assumed to operate at 62% capacity for 24 hours per day.

Carbon Dioxide Emissions Calculations

In-state carbon intensity range (Mt/GWh)		Fraction generated In-state		Imported Carbon intensity Range (Mt/GWh)		Fraction Imported	
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
187	280	0.68	0.78	544	735	0.22	0.32

Average Carbon Intensity	343.12 MtCO2/GWh

Project Emissions (MtCO2/yr) =	Average Carbon Intensity (MtCO2/GWh) X	Electricity Usage/year (GWh/year)

Annual Electricity Usage

Facility	MWh/year	GWh/year	MtCO2/yr
2005 Project Pump Station	10,183.50	10.18	3,494.16
Wells*	9,450.00	9.45	3,242.48
Sterling Pump Station*	1,339.20	1.34	459.51
Clay Street Pump Station	9,776.16	9.78	3,354.40
Mockingbird Pump Station	11,405.52	11.41	3,913.46
Subtotal Consumed			14,464.01
Sterling Hydroelectric Station[1]	1,113.00	1.11	381.89256
		Total	**14,082.12**

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Boring.urb924

Project Name: Central Reach Boring

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2010 TOTALS (tons/year unmitigated)	1,415.33
2010 TOTALS (tons/year mitigated)	1,415.33
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	CO2
2010	1,415.33
Fine Grading 01/01/2010-05/13/2010	1,370.82
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,350.75
Fine Grading On Road Diesel	5.30
Fine Grading Worker Trips	14.77
Mass Grading 01/01/2010-05/13/2010	44.50
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	44.50
Mass Grading Worker Trips	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

Total Acres Disturbed: 14.14

Maximum Daily Acreage Disturbed: 2.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1470 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 26.32

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 24 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 24 hours per day

2 Generator Sets (549 hp) operating at a 0.74 load factor for 24 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 24 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 24 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 24 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2010 - 5/13/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 221.05

Off-Road Equipment:

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	CO2
2010	1,415.33
Fine Grading 01/01/2010-05/13/2010	1,370.82
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,350.75
Fine Grading On Road Diesel	5.30
Fine Grading Worker Trips	14.77
Mass Grading 01/01/2010-05/13/2010	44.50
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	44.50
Mass Grading Worker Trips	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Trenching.urb924

Project Name: Central Reach Trenching

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2010 TOTALS (tons/year unmitigated)	1,533.49
2010 TOTALS (tons/year mitigated)	1,533.49
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	CO2
2010	1,533.49
Asphalt 01/01/2010-12/14/2010	385.29
Paving Off-Gas	0.00
Paving Off Road Diesel	350.48
Paving On Road Diesel	0.10
Paving Worker Trips	34.71
Fine Grading 01/01/2010-12/14/2010	637.05
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	562.64
Fine Grading On Road Diesel	35.86
Fine Grading Worker Trips	38.56
Mass Grading 01/01/2010-12/14/2010	511.15
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	511.15
Mass Grading Worker Trips	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description

Total Acres Disturbed: 19.84

Maximum Daily Acreage Disturbed: 0.08

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 515.56 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 68.23

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/1/2010 - 12/14/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 20.08

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 972.58

Off-Road Equipment:

Phase: Paving 1/1/2010 - 12/14/2010 - Default Paving Description

Acres to be Paved: 0.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	CO2
2010	1,533.49
Asphalt 01/01/2010-12/14/2010	385.29
Paving Off-Gas	0.00
Paving Off Road Diesel	350.48
Paving On Road Diesel	0.10
Paving Worker Trips	34.71
Fine Grading 01/01/2010-12/14/2010	637.05
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	562.64
Fine Grading On Road Diesel	35.86
Fine Grading Worker Trips	38.56
Mass Grading 01/01/2010-12/14/2010	511.15
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	511.15
Mass Grading Worker Trips	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 12/14/2010 - Pipeline Trenching/Excavation Description

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

PM10: 61% PM25: 61%

10/26/2009 11:13:29 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Pump Station.urb924

Project Name: Mockingbird Connection Pump Station

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2010 TOTALS (tons/year unmitigated)	456.13
2010 TOTALS (tons/year mitigated)	456.13
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	CO2
2010	456.13
Fine Grading 01/01/2010-01/31/2010	43.76
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	35.90
Fine Grading On Road Diesel	6.23
Fine Grading Worker Trips	1.63
Building 02/01/2010-08/15/2010	221.56
Building Off Road Diesel	220.95
Building Vendor Trips	0.39
Building Worker Trips	0.22
Mass Grading 02/01/2010-08/15/2010	178.01
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	178.01
Mass Grading Worker Trips	0.00

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Asphalt 08/16/2010-08/28/2010	12.79
Paving Off-Gas	0.00
Paving Off Road Diesel	10.26
Paving On Road Diesel	1.28
Paving Worker Trips	1.24
Coating 08/16/2010-08/28/2010	0.01
Architectural Coating	0.00
Coating Worker Trips	0.01

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 1
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 140
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 2/1/2010 - 8/15/2010 - Haul Truck Emissions for construction materials
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 600
Off-Road Equipment:

Phase: Paving 8/16/2010 - 8/28/2010 - Default Paving Description
Acres to be Paved: 0.25
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
1 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

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Phase: Building Construction 2/1/2010 - 8/15/2010 - Pump Station Construction

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

2 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Architectural Coating 8/16/2010 - 8/28/2010 - Pump Station Painting/Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	CO2
2010	456.13
Fine Grading 01/01/2010-01/31/2010	43.76
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	35.90
Fine Grading On Road Diesel	6.23
Fine Grading Worker Trips	1.63
Building 02/01/2010-08/15/2010	221.56
Building Off Road Diesel	220.95
Building Vendor Trips	0.39
Building Worker Trips	0.22

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Mass Grading 02/01/2010-08/15/2010	178.01
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	0.00
Mass Grading On Road Diesel	178.01
Mass Grading Worker Trips	0.00
Asphalt 08/16/2010-08/28/2010	12.79
Paving Off-Gas	0.00
Paving Off Road Diesel	10.26
Paving On Road Diesel	1.28
Paving Worker Trips	1.24
Coating 08/16/2010-08/28/2010	0.01
Architectural Coating	0.00
Coating Worker Trips	0.01

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Tank.urb924

Project Name: Mockingbird Reservoir

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2010 TOTALS (tons/year unmitigated)	613.66
2010 TOTALS (tons/year mitigated)	613.66
Percent Reduction	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	CO2
2010	613.66
Mass Grading 01/01/2010-01/31/2010	46.84
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	43.43
Mass Grading On Road Diesel	1.78
Mass Grading Worker Trips	1.63
Building 02/01/2010-11/30/2010	516.37
Building Off Road Diesel	253.40
Building Vendor Trips	164.20
Building Worker Trips	98.77
Fine Grading 02/15/2010-03/26/2010	22.89
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	22.89
Fine Grading Worker Trips	0.00

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Fine Grading 03/29/2010-04/07/2010	8.48
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	8.48
Fine Grading Worker Trips	0.00
Fine Grading 04/08/2010-04/29/2010	5.43
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	5.43
Fine Grading Worker Trips	0.00
Asphalt 12/01/2010-12/15/2010	13.66
Paving Off-Gas	0.00
Paving Off Road Diesel	11.53
Paving On Road Diesel	0.76
Paving Worker Trips	1.37

Phase Assumptions

Phase: Fine Grading 3/29/2010 - 4/7/2010 - Concrete hauling - 25 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 500
Off-Road Equipment:

Phase: Fine Grading 4/8/2010 - 4/29/2010 - Concrete hauling - 8 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 160
Off-Road Equipment:

Phase: Fine Grading 2/15/2010 - 3/26/2010 - Steel reinforcement hauling - 3 loads per day
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 360
Off-Road Equipment:

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Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 4
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 40
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 12/1/2010 - 12/15/2010 - Default Paving Description
Acres to be Paved: 1
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Building Construction 2/1/2010 - 11/30/2010 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	CO2
2010	613.66
Mass Grading 01/01/2010-01/31/2010	46.84
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	43.43
Mass Grading On Road Diesel	1.78
Mass Grading Worker Trips	1.63

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Building 02/01/2010-11/30/2010	516.37
Building Off Road Diesel	253.40
Building Vendor Trips	164.20
Building Worker Trips	98.77
Fine Grading 02/15/2010-03/26/2010	22.89
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	22.89
Fine Grading Worker Trips	0.00
Fine Grading 03/29/2010-04/07/2010	8.48
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	8.48
Fine Grading Worker Trips	0.00
Fine Grading 04/08/2010-04/29/2010	5.43
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	0.00
Fine Grading On Road Diesel	5.43
Fine Grading Worker Trips	0.00
Asphalt 12/01/2010-12/15/2010	13.66
Paving Off-Gas	0.00
Paving Off Road Diesel	11.53
Paving On Road Diesel	0.76
Paving Worker Trips	1.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

RIVERSIDE-CORONA FEEDER REALIGNMENT

NEPA FEDERAL GENERAL CONFORMITY ANALYSIS SUPPORTING INFORMATION

Federal Conformity Calculation Assumptions

The following summary provides further clarification regarding the calculations for the federal conformity analysis.

1. Daily emissions from the Reaches E, F, and G 2008 Refinement EIR, attached as Appendix J were used and multiplied by 205 working days to represent the annual emissions that would result from construction, which takes into account weather, holidays and other interruptions of work.
2. Mockingbird Connection annual emissions includes pipeline construction using the trenching method, the pump station, and reservoir. Daily emissions were estimated utilizing WMWD's Van Buren Boulevard Pipeline Project Initial Study/Mitigated Negative Declaration, adopted 2007 (SCH#2007091063), which assumed 2,300 LF of pipeline could be constructed in 3 months. Therefore, construction of the pipeline alignment would last for approximately 161 working days. It is assumed that 60 percent of the Mockingbird Connection pipeline construction/trenching is completed during the same year that the pump station and reservoir/tank are built; therefore, emissions total reflect 60 percent of the total pipeline emissions. Annual emissions estimates for the Mockingbird pump station reflect a total of approximately 171 construction work days and are shown in the following output. Annual emissions estimates for the Mockingbird reservoir/tank reflect a total of approximately 249 construction work days and are shown in the following output.
3. It is not anticipated that the entire Phase 2 facilities would be constructed concurrently within one year. It is reasonable to assume that some percentage of multiple construction components and facilities can be constructed within a given year. Reasonable assumptions for the progression of linear construction and facilities were utilized and the worst-case emissions were presented. The worst-case scenario for construction of Phase 2 would include the trenching of the Central Reach north of the Santa Ana River crossing, boring of the Central Reach crossing the Santa Ana River and any crossings northward, and complete construction of the Clay Street Connection facilities.
4. For this type of project, a total of approximately 205 construction work days occur per year as an average, which take into account weather, holidays and other interruptions of work. The following output for the entire Central Reach trenching alignment represents this total. However, only approximately 20% of the Central Reach trenching alignment is located north of the Santa Ana River; therefore, 20% of the annual emissions is reflected in the SEIR/EIS table.
5. Total annualized emissions estimates for all of the Central Reach boring reflects a total of approximately 95 construction work days as contained in the following output. Approximately 60% of the Central Reach boring is located across and north of the Santa Ana River; therefore, 60% of the total annualized emissions is reflected in the SEIR/EIS table.
6. Clay Street Connection includes pipeline construction using the trenching method and a pump station. Daily emissions were estimated utilizing WMWD's Van Buren Boulevard Pipeline Project Initial Study/Mitigated Negative Declaration, adopted 2007 (SCH#2007091063), which assumed 2,300 LF of pipeline could be constructed in 3 months. Therefore, construction of the pipeline alignment would last for approximately 201 working days. Annual emissions estimates for the Clay Street pump station were assumed to be equivalent to the Mockingbird pump station and reflect a total of approximately 171 construction work days as contained in the following output.
7. Long-term emissions are the annualized emissions from maintenance vehicle trips as contained in the following output.

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Central Reach Boring.urb924

Project Name: Central Reach Boring

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	1.20	12.11	4.42	0.00	9.20	0.48	9.68	1.92	0.44	2.36	1,415.33
2010 TOTALS (tons/year mitigated)	1.20	12.11	4.42	0.00	4.77	0.48	5.25	1.00	0.44	1.44	1,415.33
Percent Reduction	0.00	0.00	0.00	0.00	48.18	0.00	45.80	48.17	0.00	39.19	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	1.20	12.11	4.42	0.00	9.20	0.48	9.68	1.92	0.44	2.36	1,415.33
Fine Grading 01/01/2010-05/13/2010	1.18	11.79	4.30	0.00	9.20	0.47	9.67	1.92	0.43	2.35	1,370.82
Fine Grading Dust	0.00	0.00	0.00	0.00	9.20	0.00	9.20	1.92	0.00	1.92	0.00
Fine Grading Off Road Diesel	1.18	11.75	4.17	0.00	0.00	0.46	0.46	0.00	0.43	0.43	1,350.75
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.77
Mass Grading 01/01/2010-05/13/2010	0.02	0.32	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.50
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.02	0.32	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.50
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

Total Acres Disturbed: 14.14

Maximum Daily Acreage Disturbed: 2.02

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1470 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 26.32

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 24 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 24 hours per day

2 Generator Sets (549 hp) operating at a 0.74 load factor for 24 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 24 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 24 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 24 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2010 - 5/13/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 221.05

Off-Road Equipment:

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	1.20	12.11	4.42	0.00	4.77	0.48	5.25	1.00	0.44	1.44	1,415.33
Fine Grading 01/01/2010-05/13/2010	1.18	11.79	4.30	0.00	4.77	0.47	5.23	1.00	0.43	1.42	1,370.82
Fine Grading Dust	0.00	0.00	0.00	0.00	4.77	0.00	4.77	1.00	0.00	1.00	0.00
Fine Grading Off Road Diesel	1.18	11.75	4.17	0.00	0.00	0.46	0.46	0.00	0.43	0.43	1,350.75
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.77
Mass Grading 01/01/2010-05/13/2010	0.02	0.32	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.50
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.02	0.32	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.50
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 5/13/2010 - Boring/Tunneling Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\NEPA 10 mo trenching.urb924

Project Name: Central Reach Trenching

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	1.58	12.25	6.50	0.01	6.34	0.73	7.07	1.33	0.67	2.00	1,362.47
2010 TOTALS (tons/year mitigated)	1.58	12.25	6.50	0.01	3.29	0.73	4.02	0.69	0.67	1.36	1,362.47
Percent Reduction	0.00	0.00	0.00	0.00	48.03	0.00	43.08	47.94	0.00	31.85	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	1.58	12.25	6.50	0.01	6.34	0.73	7.07	1.33	0.67	2.00	1,362.47
Asphalt 01/01/2010-10/14/2010	0.56	3.59	2.19	0.00	0.00	0.27	0.27	0.00	0.25	0.25	318.50
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.55	3.58	1.95	0.00	0.00	0.27	0.27	0.00	0.25	0.25	289.71
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Paving Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.69
Fine Grading 01/01/2010-10/14/2010	0.76	5.01	3.01	0.00	6.32	0.31	6.63	1.32	0.29	1.61	532.81
Fine Grading Dust	0.00	0.00	0.00	0.00	6.32	0.00	6.32	1.32	0.00	1.32	0.00
Fine Grading Off Road Diesel	0.73	4.74	2.65	0.00	0.00	0.30	0.30	0.00	0.28	0.28	465.08
Fine Grading On Road Diesel	0.02	0.26	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	35.86
Fine Grading Worker Trips	0.01	0.02	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.88
Mass Grading 01/01/2010-10/14/2010	0.26	3.64	1.30	0.00	0.02	0.14	0.16	0.01	0.13	0.14	511.15
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.26	3.64	1.30	0.00	0.02	0.14	0.16	0.01	0.13	0.14	511.15
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 10/14/2010 - Pipeline Trenching/Excavation Description

Total Acres Disturbed: 19.84

Maximum Daily Acreage Disturbed: 0.08

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 515.56 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 82.54

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 1/1/2010 - 10/14/2010 - Haul Truck Emissions for Pipeline

Total Acres Disturbed: 20.08

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 1176.59

Off-Road Equipment:

Phase: Paving 1/1/2010 - 10/14/2010 - Default Paving Description

Acres to be Paved: 0.02

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	1.58	12.25	6.50	0.01	3.29	0.73	4.02	0.69	0.67	1.36	1,362.47
Asphalt 01/01/2010-10/14/2010	0.56	3.59	2.19	0.00	0.00	0.27	0.27	0.00	0.25	0.25	318.50
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.55	3.58	1.95	0.00	0.00	0.27	0.27	0.00	0.25	0.25	289.71
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Paving Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.69
Fine Grading 01/01/2010-10/14/2010	0.76	5.01	3.01	0.00	3.28	0.31	3.59	0.68	0.29	0.97	532.81
Fine Grading Dust	0.00	0.00	0.00	0.00	3.27	0.00	3.27	0.68	0.00	0.68	0.00
Fine Grading Off Road Diesel	0.73	4.74	2.65	0.00	0.00	0.30	0.30	0.00	0.28	0.28	465.08
Fine Grading On Road Diesel	0.02	0.26	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	35.86
Fine Grading Worker Trips	0.01	0.02	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.88
Mass Grading 01/01/2010-10/14/2010	0.26	3.64	1.30	0.00	0.02	0.14	0.16	0.01	0.13	0.14	511.15
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.26	3.64	1.30	0.00	0.02	0.14	0.16	0.01	0.13	0.14	511.15
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 10/14/2010 - Pipeline Trenching/Excavation Description

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Pump Station.urb924

Project Name: Mockingbird Connection Pump Station

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.49	4.10	1.82	0.00	0.22	0.20	0.42	0.05	0.19	0.23	456.13
2010 TOTALS (tons/year mitigated)	0.49	4.10	1.82	0.00	0.12	0.20	0.32	0.02	0.19	0.21	456.13
Percent Reduction	0.00	0.00	0.00	0.00	46.78	0.00	24.08	46.00	0.00	9.05	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.49	4.10	1.82	0.00	0.22	0.20	0.42	0.05	0.19	0.23	456.13
Fine Grading 01/01/2010-01/31/2010	0.05	0.42	0.20	0.00	0.21	0.02	0.23	0.04	0.02	0.06	43.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.05	0.37	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	35.90
Fine Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.23
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
Building 02/01/2010-08/15/2010	0.32	2.28	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	221.56
Building Off Road Diesel	0.32	2.28	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	220.95
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Mass Grading 02/01/2010-08/15/2010	0.09	1.27	0.45	0.00	0.01	0.05	0.06	0.00	0.05	0.05	178.01
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.09	1.27	0.45	0.00	0.01	0.05	0.06	0.00	0.05	0.05	178.01
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt 08/16/2010-08/28/2010	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.79
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.12	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.26
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Coating 08/16/2010-08/28/2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

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Phase Assumptions

Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 140

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day

1 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Mass Grading 2/1/2010 - 8/15/2010 - Haul Truck Emissions for construction materials

Total Acres Disturbed: 1

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 600

Off-Road Equipment:

Phase: Paving 8/16/2010 - 8/28/2010 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

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Phase: Building Construction 2/1/2010 - 8/15/2010 - Pump Station Construction

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

2 Welders (45 hp) operating at a 0.45 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Architectural Coating 8/16/2010 - 8/28/2010 - Pump Station Painting/Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.49	4.10	1.82	0.00	0.12	0.20	0.32	0.02	0.19	0.21	456.13
Fine Grading 01/01/2010-01/31/2010	0.05	0.42	0.20	0.00	0.11	0.02	0.13	0.02	0.02	0.04	43.76
Fine Grading Dust	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.05	0.37	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	35.90
Fine Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.23
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
Building 02/01/2010-08/15/2010	0.32	2.28	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	221.56
Building Off Road Diesel	0.32	2.28	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	220.95
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22

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Mass Grading 02/01/2010-08/15/2010	0.09	1.27	0.45	0.00	0.01	0.05	0.06	0.00	0.05	0.05	178.01
Mass Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading On Road Diesel	0.09	1.27	0.45	0.00	0.01	0.05	0.06	0.00	0.05	0.05	178.01
Mass Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt 08/16/2010-08/28/2010	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.79
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.12	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.26
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Coating 08/16/2010-08/28/2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/1/2010 - 1/31/2010 - Pump Station Grading

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

PM10: 61% PM25: 61%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\2007\07-0377\Air\URBEMIS\Tank.urb924

Project Name: Mockingbird Reservoir

Project Location: Riverside County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.50	4.37	2.97	0.00	0.85	0.21	1.06	0.18	0.19	0.37	613.66
2010 TOTALS (tons/year mitigated)	0.50	4.37	2.97	0.00	0.45	0.21	0.66	0.09	0.19	0.29	613.66
Percent Reduction	0.00	0.00	0.00	0.00	47.52	0.00	38.11	47.09	0.00	22.69	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.50	4.37	2.97	0.00	0.85	0.21	1.06	0.18	0.19	0.37	613.66
Mass Grading 01/01/2010-01/31/2010	0.06	0.49	0.27	0.00	0.84	0.03	0.87	0.18	0.02	0.20	46.84
Mass Grading Dust	0.00	0.00	0.00	0.00	0.84	0.00	0.84	0.18	0.00	0.18	0.00
Mass Grading Off Road Diesel	0.06	0.48	0.25	0.00	0.00	0.02	0.02	0.00	0.02	0.02	43.43
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
Building 02/01/2010-11/30/2010	0.40	3.48	2.53	0.00	0.01	0.17	0.18	0.00	0.15	0.16	516.37
Building Off Road Diesel	0.30	2.53	1.08	0.00	0.00	0.13	0.13	0.00	0.12	0.12	253.40
Building Vendor Trips	0.07	0.90	0.63	0.00	0.01	0.04	0.04	0.00	0.03	0.03	164.20
Building Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.77
Fine Grading 02/15/2010-03/26/2010	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.89
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.89
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 03/29/2010-04/07/2010	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.48
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.48
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fine Grading 04/08/2010-04/29/2010	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt 12/01/2010-12/15/2010	0.02	0.14	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.66
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	11.53
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37

Phase Assumptions

Phase: Fine Grading 2/15/2010 - 3/26/2010 - Steel reinforcement hauling - 3 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 360

Off-Road Equipment:

Phase: Fine Grading 3/29/2010 - 4/7/2010 - Concrete hauling - 25 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

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Phase: Fine Grading 4/8/2010 - 4/29/2010 - Concrete hauling - 8 loads per day

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 160

Off-Road Equipment:

Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 40

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 10 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 10 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Phase: Paving 12/1/2010 - 12/15/2010 - Default Paving Description

Acres to be Paved: 1

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 10 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 10 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

11/30/2009 11:36:39 AM

Phase: Building Construction 2/1/2010 - 11/30/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 10 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 10 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 10 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 10 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.50	4.37	2.97	0.00	0.45	0.21	0.66	0.09	0.19	0.29	613.66
Mass Grading 01/01/2010-01/31/2010	0.06	0.49	0.27	0.00	0.44	0.03	0.46	0.09	0.02	0.11	46.84
Mass Grading Dust	0.00	0.00	0.00	0.00	0.44	0.00	0.44	0.09	0.00	0.09	0.00
Mass Grading Off Road Diesel	0.06	0.48	0.25	0.00	0.00	0.02	0.02	0.00	0.02	0.02	43.43
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63
Building 02/01/2010-11/30/2010	0.40	3.48	2.53	0.00	0.01	0.17	0.18	0.00	0.15	0.16	516.37
Building Off Road Diesel	0.30	2.53	1.08	0.00	0.00	0.13	0.13	0.00	0.12	0.12	253.40
Building Vendor Trips	0.07	0.90	0.63	0.00	0.01	0.04	0.04	0.00	0.03	0.03	164.20
Building Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	98.77
Fine Grading 02/15/2010-03/26/2010	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.89
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.89
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fine Grading 03/29/2010-04/07/2010	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.48
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.48
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading 04/08/2010-04/29/2010	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt 12/01/2010-12/15/2010	0.02	0.14	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.66
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	11.53
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2010 - 1/31/2010 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%