Appendix C
Air Quality

METHODOLOGY AND ASSUMPTIONS FOR IMPACT ANALYSIS

Construction Activities

Direct Emissions

Direct emissions are primarily associated with exhaust from the operation of construction equipment, the application of architectural coatings (e.g., paints and primers), and dust from the disturbance of soil. In this EIR, the calculation of all direct construction-related emissions is based on procedures and emission rates described in Chapter 9 and the appendix to Chapter 9 of the CEQA Handbook (South Coast Air Quality Management District 1993).

The calculation of emissions from construction equipment exhaust was based on information provided by the Districts (County Sanitation Districts of Los Angeles County 1994b, 1994d). This information included:

- a schedule showing when construction would occur at the JWPCP,
- a description of the types of construction equipment that would be used under each construction contract,
- a description of the number of pieces of each type of equipment that would be used under each construction contract,
- a description of the number of days each type of equipment would be used under each construction contract, and
- a description of the hours per day each type of equipment would be used under each construction contract.

The calculation of emissions from architectural coatings was based on data provided by the Districts (County Sanitation Districts of Los Angeles County 1994d). These data included:

- an estimate of the amount of surface that would be painted during construction under each JWPCP contract and
- a description of the types of paints that would be used during construction of the JWPCP.

The calculation of emissions from disturbance of soil was based on data provided by the Districts (County Sanitation Districts of Los Angeles County 1994d). These data included an estimate of the amount of soil surface that would be disturbed during construction under each JWPCP contract.

The amounts of activities associated with the use of construction equipment, application of architectural coatings, and disturbance of soil were calculated for each calendar quarter during the construction period. The amounts of activities for each calendar quarter were multiplied by emissions factors from the CEQA Handbook (South Coast Air Quality Management District 1993) to estimate emissions by calendar quarter.

During construction at the JWPCP and the WRPs, asbestos could be removed during modification or demolition of existing asbestos-containing buildings. At the JWPCP, two buildings will be modified and two will be demolished using approved SCAQMD Rule 1403 procedures. Similarly, modifications to the WRPs should not involve the release of asbestos.

Indirect Emissions

Construction-related indirect emissions are primarily associated with commute trips made by construction employees at the JWPCP. The calculation of indirect emissions was conducted using the Mobile Assessment for Air Quality Impacts (MAAQI) model.

The MAAQI model was developed by the Aspen Environmental Group for the SCAQMD. In applying the model, the user provides estimates of land use development and trip-making activities. The model then applies trip length and emission rate data specific to geographic locations.

Data provided as input to the MAAQI model regarding the number of construction employees were based on information provided by the Districts (County Sanitation Districts of Los Angeles County 1994b, 1994d). This information included:

- a schedule showing when construction would occur under each of 18 JWPCP construction contracts and

- an estimate of the number of construction worker-days under each construction contract.

Microscale Carbon Monoxide Analysis

Microscale CO levels are closely associated with on-road vehicle traffic congestion. CO levels are highest near roadway facilities, particularly intersections with substantial congestion.

At its peak, construction of the JWPCP improvements would generate more than 10 times as many on-road vehicle trips as would operation of the JWPCP improvements. Roadway traffic congestion would, therefore, be affected to a substantially greater degree by construction of the proposed improvements of the JWPCP than by operation of the proposed improvements. As a result, the analysis of the transportation impacts of the JWPCP improvements and, subsequently, the microscale CO impacts of the JWPCP improvements focus on the construction period.

As described in Chapter 7 of this EIR, "Transportation", traffic associated with the JWPCP would have the largest effect on the intersection of Sepulveda Boulevard and Figueroa Street. Therefore, the microscale CO analysis also examined potential impacts at this intersection. Traffic volumes and intersection operating characteristics used in the microscale CO analysis are described in Chapter 7.

The microscale CO analysis was performed with CALINE4, a line-source dispersion model prepared by Caltrans (California Department of Transportation 1984). The ARB's EMFAC7F program was used to develop emission rates. The microscale CO analysis applied assumptions and procedures described in the CEQA Handbook (South Coast Air Quality Management District 1993) and Air Quality Technical Analysis Notes (California Department of Transportation 1988).

Operational Activities

Criteria Pollutants

The following is a description of the methodology and assumptions used to analyze ozone precursors (NO_x and ROG), sulfur oxide (SO_x), and PM10 pollutants and, separately, carbon monoxide (CO) pollutants. CO microscale analysis results are discussed separately because all other emissions (direct and indirect) are generally addressed by estimating mass emission rates, whereas impacts identified in the CO microscale analysis are addressed by estimating emission concentrations via computer models.

Ozone Precursors, Sulfur Oxides, and PM10. The estimation of emissions associated with operation of new facilities and modified existing facilities at the JWPCP was divided into two categories: direct and indirect emissions. Direct emissions are those that would be produced by onsite operation of the new and modified existing JWPCP facilities. Indirect emissions are those that would be produced by additional commute trips made by new employees hired to operate the new and modified JWPCP facilities. The methodology and assumptions for estimation of direct and indirect emissions are described below.

Emissions associated with fuel combustion equipment were estimated as follows. The SCAQMD's CEQA Handbook guidelines require that emissions estimates include all direct emissions from combustion equipment plus indirect emissions associated with electrical energy purchased from the local electric utility. However, electrical requirements at the JWPCP are satisfied by the gas-turbine-based combined cycle power plant (CCPP) fueled primarily by digester gas. The SCE grid provides backup power. Currently, the gas turbines and steam turbine at the CCPP provide approximately 15 megawatts (MW), while JWPCP's electrical requirements average 13 MW. Therefore, under normal circumstances, surplus power produced by CCPP is exported to SCE.

Area and stationary-source emissions increases at the JWPCP are attributable to several sources. These sources, and the basis for the increase in emission estimates are as follows:

- primary treatment (15 mgd),
- secondary treatment (200 mgd),
- solids handling (77% increase)
- gas turbine - digester gas (2.68 MM cf/day),
- gas turbine - natural gas (0.74 MM cf/day),
- gas turbine - diesel (50.0 gallons/day), and
- internal-combustion engine - digester gas (0.02 MM cf/day).

Emissions were estimated using information provided by the sanitation districts. Emission estimates were based on source tests and on estimates of future emission limits mandated by the SCAQMD.

Indirect operational emissions are primarily associated with commute trips made by employees hired to operate the new or modified facilities at the JWPCP. The calculation of indirect emissions was conducted using the MAAQI model. For a description of MAAQI, see "Indirect Emissions" under "Construction Activities" above.

Carbon Monoxide. A microscale CO analysis of project-related impacts from operations was not conducted. As discussed above in "Microscale Carbon Monoxide Analysis" under "Construction Activities", a microscale CO analysis of project-related construction traffic was conducted. The increase in the number of employees from operation of the project is less than one-tenth the increase that would result from construction of the project. Therefore, the microscale CO air quality analysis focuses on construction-related travel.

Air Toxics

The wastewater treatment plant scenarios that represent a "worst-case" exposure to the surrounding population were modeled to determine the resulting incremental health risk impacts (maximum individual cancer risk, and acute and chronic hazard indexes) associated with the proposed incremental increase in flow capacities.

Dispersion modeling of each expanded facility's emissions was conducted using the Industrial Source Complex Short Term (ISCST2) model version 93109. All regulatory default options were used in the model, except for the "calms processes" option, which SCAQMD recommended not be used. The ISCST2 model calculates the maximum ground-level concentrations for any given compound or substance.

ISCST2 requires source-specific information and meteorological data. The meteorological input data (supplied by SCAQMD) used for this modeling consists of hourly surface data for 1981 (the worst-case meteorological year required to be used by the SCAQMD) and upper air mixing-height information. ISCST2 requires emission rate inputs for all targeted substances that are emitted from each source. Table C-1 lists each modeled facility's emission sources and corresponding input data, such as location of meteorological stations and basis of emission rates. Additional details describing the risk assessment dispersion modeling and assumptions are described below.

Accidental Release of Acutely Hazardous Materials

In addition to the release of toxic air pollutants during daily operations, the potential exists for an accidental release of acutely hazardous materials during earthquakes, process upsets, or other unforeseen events. Evaluation of this impact consists of examining existing and proposed procedures established to minimize this hazard. Discussion of accidental releases is found in Chapter 10, "Public Health".

Odors

The significance of potential project-related odor impacts is qualitatively described in this EIR.

Potential odor impacts are assessed in this EIR by considering several factors, including:

- the recent historical record of odor complaints,
- the size of the existing facilities and proposed facility improvements,
- the location of existing facilities and facility improvements on the project sites,
- the location of potential offsite sensitive receptors,
- prevailing wind directions, and
- effectiveness of proposed odor control technologies and existing odor control strategy program.

The record of recent odor complaints is particularly important. The potential for odor impacts is determined by a complex interaction between the other five listed factors. Because the record of recent odor complaints comprehensively takes into account the other five factors, it is considered to be a good indicator in most cases of the overall potential for future odor impacts.

RISK ASSESSMENT DISPERSION MODELING INFORMATION AND ASSUMPTIONS

Tables C-2 through C-5 present information used to conduct the risk assessment dispersion modeling. Table C-2 shows JWPCP source and emission information. Table C-3 shows JWPCP sources removed from service. Table C-4 lists the assumptions used for modeling the JWPCP expansion. Table C-5 lists the assumptions used for modeling the San Jose Creek WRP (Stage IV), Los Coyotes WRP, and Whittier Narrows WRP expansions. Risk assessment dispersion modeling was not conducted for the Los Coyotes WRP 12.5-mgd expansion or 25-mgd expansion or for the JWPCP 35-mgd capacity decrease scenarios because no impacts resulted from the larger flow scenarios that were modeled above.

Tables C-6 through C-13 present results of the risk assessment modeling. Table C-6 shows the individual source contribution to health risk for the 15-mgd JWPCP expansion. Table C-7 shows each individual compound's contribution to health risk for this 15-mgd expansion.

Table C-8 shows the individual source contribution to health risk for the 25-mgd San Jose Creek WRP expansion. Table C-9 shows each individual compound's contribution to health risk for this expansion.

Table C-10 shows the individual source contribution to health risk for the Whittier Narrows WRP 37.5-mgd expansion. Table C-11 shows each individual compound's contribution to health risk for this expansion.

Table C-12 shows the individual source contribution to health risk for the Los Coyotes WRP 37.5-mgd expansion. Table C-13 shows each individual compound's contribution to health risk for this expansion.

BIOSOLIDS DISPOSAL AND REUSE METHODOLOGY AND ASSUMPTIONS

The criteria air pollutant emissions associated with the transport of biosolids to disposal and reuse sites were assessed for two future scenarios. The first scenario was a baseline, or "no project", condition; the second scenario was a "with project" condition.

The baseline scenario was developed assuming that existing biosolids quantities are transported. The "with project" scenario assumed an increase in the quantities of transported biosolids. Under the proposed project, quantities would increase rather than remain at baseline quantities. Therefore, project-related air quality impacts are defined as the increase in air pollutant emissions, rather than the emissions associated with the baseline scenario.

The following methodology and assumptions were applied in analyzing both baseline and "with project" scenarios:

- emissions estimates were made using the MAAQI model,
- future-year (2010) conditions were assumed,
- transport by heavy-duty truck was assumed,
- transport of 4,767 tons per week of waste to Puente Hills was assumed,
- transport of the remaining biosolids to remote landfills was assumed, and
- a maximum distance of 198 miles to the remote landfills was assumed.

The baseline scenario assumed the transport of 5,954 tons per week of waste to remote landfills. The "with project" scenario assumed the transport of 11,180 tons per week to remote landfills. As of November 1994, the actual combination of remote landfill sites that would be used for disposal and reuse is unknown. Therefore, the maximum distance of 198 miles to the remote landfills was analyzed for purposes of magnitude comparison and represents an upper bound on the range of potential impacts.

Once emissions were estimated for the baseline and "with project" scenarios in 2010, the emissions were compared to determine the impact of the project, which is defined as the increase in emissions. These increases were then compared to emissions thresholds for the SCAB and the SEDAB, to determine the significance of the impacts.

Table C-1. Dispersion Model Input Data Summary

Facility	Modeled Sources (Added/Modified Equipment)	Basis of Emission Rates	Meteorological Data (Surface Data/Upper Air Data
JWPCP (15 mgd increase)	15 odor scubbers, 2 SIPS engines, 1 gas turbine, 4 wash-water filters, existing digester gas pretreatment system, existing digester gas compressor station, sludge truck unloading station, 8 flares, 3 laboratory vents, 4 biological reactor vents, 2 mixed liquor conveyance channels, 2 clarifier banks, and 14 digesters	JWPCP AB2588 Data (1989 and 1991)	Compton/El Monte
San Jose Creek WRP (25 mgd increase)	8 aeration tanks, 12 secondary clarifiers (including weirs), 10 tertiary filters, existing effluent structure, and existing outfall vent	San Jose Creek AB2588 Data (1991)	Pico Rivera/Ontario
Whittier Narrows WRP (37.5 mgd increase)	12 aeration tanks, 17 secondary clarifiers (including weirs), existing chlorine delivery station, 18 tertiary filters, new effluent structure	Whittier Narrows AB2588 Data (1991)	Pico Rivera/Ontario
Los Coyotes WRP (37.5 mgd increase)	12 aeration tanks, 18 secondary clarifiers (including weirs), existing chlorine delivery station, 16 tertiary filters, existing effluent structure	Los Coyotes AB2588 Data (1991)	Long Beach/Ontario

Table C-2. JWPCP Source and Emission Information

Source Model ID No.	Source Description	Source Type	Basis of Emission Rate
90022X	Centrifuge Bldg. No. 1 APC System	Point	Used SP1 (venting centrifuge Bldg. No. 1) JWPCP AB2588 emission data and adjusted for new flow rate.
90023X	Centrifuge Bldg. No. 2 APC System	Point	Used composite of SP2 and SP3 (venting Centrifuge Bldg. No. 2) JWPCP AB2588 emission data and adjusted for new flow rate.
90025X	Sludge Storage Silos APC System	Point	Used composite of SP4A and SP4B (venting sludge storage silos) JWPCP AB2588 emission data and adjusted for new flow rate.
90026X	Centrate Treatment APC System	Point	Used S4 JWPCP AB2588 emission data and adjusted for new flow rate.
90024X	Solids Dewatering APC System	Point	Used composite of SP1, SP2 and SP3 (venting centrifuge Bldg Nos. 1 and 2) JWPCP AB2588 emission data and adjusted for new flow rate.
90021X	DAF APC System	Point	Used S4 (venting DAF) JWPCP AB2588 emission data and adjusted for new flow rate.
90018X	E-F Reactor Inlet Channel APC System	Point	Used composite of S1 and S2 (venting inlet channels to A-D biological reactors) JWPCP AB2588 emission data and adjusted for new flow rate.
90019X	G-H Reactor Inlet Channel APC System	Point	Used composite of S1 and S2 (venting inlet channels to A-D biological reactors) JWPCP AB2588 emission data and adjusted for new flow rate.
90001X	Central Odor Scrubber	Point	Used composite of P1A, P1B, P2A, P2B, P3 through P11 (venting various primary treatment processes) JWPCP AB2588 emission data and adjusted for new flow rate.
90034X	Digester Cleanings So. Sta. APC System	Point	Used digester cleanings So. station JWPCP AB2588 emission data and adjusted for new flow rate.
90035X	Digester Cleanings No. Sta. APC System	Point	Used digester cleanings So. station JWPCP AB2588 emission data and adjusted for new flow rate.
90036X	E1 Skimmings APC System	Point	Used composite of P14 (venting screening Sta. No. 2 and E3 effluent channel) JWPCP AB2588 emission data and adjusted for new flow rate.
90037X	E2/E3 Skimmings APC System	Point	Used composite of P14 (venting screening Sta. No. 2 and E3 effluent channel) JWPCP AB2588 emission data and adjusted for new flow rate.
90038X	E4 Skimmings APC System	Point	Used composite of P14 (venting screening Sta. No. 2 and E3 effluent channel) JWPCP AB2588 emission data and adjusted for new flow rate.
90077X and 90078X	Mixed Liquor Conveyance Channel APC System	Point	Used mixed liquor conveyance channel JWPCP AB2588 emission data and adjusted for 50% VOC scrubbing efficiency.
80051X	South Flaring Sta. No. 1	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
800512X	South Flaring Sta. No. 2	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.

Table C-2. Continued

Source Model ID No.	Source Description	Source Type	Basis of Emission Rate
80053X	South Flaring Sta. No. 3	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80054X	South Flaring Sta. No. 4	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80055X	South Flaring Sta. No. 5	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80038X	North Flaring Sta. No. 5	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80039X	North Flaring Sta. No. 6	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80040X	North Flaring Sta. No. 7	Point	Used North Flare (pilot mode) JWPCP AB2588 emission data and same flow rate.
80026X	TEF Turbine No. 4	Point	Used turbine (full load) JWPCP AB2588 emission data and adjusted for digester gas feed rate.
80028X	TEF Turbine No. 5	Point	This turbine is assumed to be in standby mode and therefore was not modeled.
80012X	Boiler House No. 3, No. 11	Point	This boiler is assumed to be in standby mode and therefore was not modeled.
80020X	SIPS No. 4	Point	Used SIPS engine JWPCP AB2588 emission data and same exhaust flow rate.
80021X	SIPS No. 5	Point	Used SIPS engine JWPCP AB2588 emission data and same exhaust flow rate.
50001X	Washwater Filters (Nos. 1, 2, 3 and 4)	Area	Used San Jose Creek Tertiary Filters AB2588 emission data and adjusted for influent process flow.
50023X	Gas Pretreatment System (Fugitive)	Area	Used gas pretreatment system JWPCP AB2588 emission data and adjusted for inlet digester gas flow.
50024X	Gas Compressors Station (Fugitive)	Area	Used gas pretreatment system JWPCP AB2588 emission data and adjusted for inlet digester gas flow.
50029X	Sludge Truck Loading	Area	Used sludge conveyor belt JWPCP AB2588 emission data (with no change in mass emission rate).
50020X	Digesters (Fugitive)	Area	Used digester JWPCP AB2588 emission data (with no change in mass emission rate).
80001X through 80005X	Biological Reactor Vents (Nos. 1, 2, 3, and 4).	Point	Used biological reactor vent JWPCP AB2588 emission data and adjusted for influent flow.
50010X and 50011X	Secondary Clarifiers (Banks Nos. 1 and 2).	Area	Used mixed liquor conveyance channel JWPCP AB2588 emission data and adjusted for influent flow.
90028X through 90030X	Laboratory Vents	Point	Used laboratory vent JWPCP AB2588 emission data and same flow rate.

Table C-3. JWPCP Sources Removed from Service (Health Risk Credit)

Source Description	Replacement Unit/Process	Source Model ID No.
SP1	Centrifuge Bldg. No. 1 APC System	90022X
SP2	Centrifuge Bldg. No. 2 APC System	90023X
SP3	Centrifuge Bldg. No. 2 APC System	90023X
SP4A	Sludge Storage Silos APC System	90025X
SP4B	Sludge Storage Silos APC System	90025X
S4	DAF APC System	90021X
P1A	Central Odor Scrubber	90001X
P1B	Central Odor Scrubber	90001X
P2A	Central Odor Scrubber	90001X
P2B	Central Odor Scrubber	90001X
P3	Central Odor Scrubber	90001X
P4	Central Odor Scrubber	90001X
P5	Central Odor Scrubber	90001X
P6	Central Odor Scrubber	90001X
P7	Central Odor Scrubber	90001X
P8	Central Odor Scrubber	90001X
P9	Central Odor Scrubber	90001X
P10	Central Odor Scrubber	90001X
P11	Central Odor Scrubber	90001X
Laboratory Hood Vents	There will be no CFC-113 emissions by the year 2010 because use of this compound will be phased out.	90028X, 90029X and 90030X
Digester Screening Blower	Digester Cleanings So. Station APC System	90034X
Middle Flaring Station (all flares)	Three new flares at North Flaring Station	80038X, 80039X and 80040X
PEPS (all engines)	Removed from operating status and placed in standby.	—

Table C-4. List of Assumptions Used for Modeling JWPCP Expansion

1. Both of the two added SIPS engines will be operated continuously.

2. Only one of the two additional gas turbines will be operated and the other gas turbine will be placed into standby mode. Note: Emissions from the existing gas turbines remain unchanged.

3. The addition of another boiler in Boiler House No. 3 will not modeled since it will be utilized in standby mode.

4. Ammonia was added to the list of emissions for the two proposed operating SIPS engines and the operating gas turbine. A maximum ammonia concentration of 20 ppm (@ 15% O_2 per the SCAQMD permit) is allowed to be emitted from the SCR system and therefore, was used to calculate the mass emissions from the gas turbines. A 10 ppm ammonia concentration (@ 15% O_2) was used to determine the mass emissions from the SIPS engines assuming the two new SIPS engines will be equipped with SCR systems.

5. All added flares (8 total) where assumed to be in "pilot mode". The South Flaring Station was assumed to be located where the proposed propane tank storage was planned.

6. Any emissions associated with the addition of a polymer mix tank are assumed insignificant and therefore, were not modeled. This decision was based on a review of the 1989 AB2588 modeling results for the existing JWPCP polymer mix stations and their associated health risks which are insignificant when compared to the other facility sources.

7. Overall, less chlorine will be required for effluent disinfection under the facility expansion scenarios therefore, it is assumed that there will be no increase in chlorine emissions attributed to the expansion. Note: no health risk credit was taken for this reduction in emissions.

8. The proposed biological reactors and secondary clarifies are assumed to be of the same configuration as the existing with respect to covers. Reactors E-F and G-H were assumed to have two vents each, and Reactor I (being smaller in size) was assumed to have one vent.

9. All emissions are based on the JWPCP AB2588 (1989 and 1991) reported emission rates except for the proposed washwater filters. These filters were assumed to have similar emissions as the San Jose Creek WRP tertiary filters and therefore, the San Jose Creek AB2588 reported emissions were used to estimate the emissions from the proposed washwater filters at JWPCP.

10. All of the rectangular digesters will be removed from service as part of the proposed facility expansion. Note: no health risk credit was taken for the reduction in fugitive emissions associated with the rectangular digesters.

11. Assumed that three laboratory hood vents (identical to existing vents) will be installed as part of the JWPCP laboratory expansion.

12. APC System, S4, and the South Flaring Station were not included in AB2588 HRA (baseline) and therefore were not included when determining health risk credit.

13. An APC system was added to secondary treatment to vent the off gases from the mixed liquor conveyance channels. The APC System was modeled using the following information: a 50% VOC removal efficiency; a flow rate of 3,000 cfm for the 400 MGD scenario; an 18" stack diameter; and a 14' stack height.

Table C-5. List of Assumptions Used for Modeling San Jose Creek WRP (Stage IV), Whittier Narrows WRP, and Los Coyotes WRP Expansions

1. All emission rates are based on 1991 AB2588 reported values and were adjusted according to plant/process influent flow.

2. The aeration tanks and tertiary filters were modeled to emit from their respective areas.

3. The secondary clarifier and weir emissions were modeled to be emitted from the clarifier area only.

4. Emissions from the chlorination and dechlorination processes were assumed to be emitted from the effluent structure.

5. Based on a May 1993 PEEP Addendum, no formaldehyde emissions from dechlorination processes were modeled.

6. The effluent structure at Whittier Narrows WRP was assumed to be located just south (near the west end) of the chlorination tanks.

Table C-6. JWPCP Source Contribution to Health Risk (Based on MEI)

Source Description	Cancer Risk for 15 MGD Exp. (in a million)	Approximate Contribution
Centrifuge Bldg. No. 1 APC System	0.2359	19.82%
Centrifuge Bldg. No. 2 APC System	0.0370	3.11%
Sludge Storage Silos APC System	0.0095	0.80%
Centrate Treatment APC System	0.0171	1.44%
Solids Dewatering APC System	0.1085	9.12%
DAF APC System	0.0309	2.60%
E-F Reactor Inlet Channel APC System	0.0026	0.22%
G-H Reactor Inlet Channel APC System	0.0017	0.14%
Central Odor Scrubber	0.1794	15.07%
Digester Cleanings So. Sta. APC System	0.0622	5.23%
Digester Cleanings No. Sta. APC System	0.0113	0.95%
E1 Skimmings APC System	0.0148	1.24%
E2/E3 Skimmings APC System	0.0238	2.00%
E4 Skimmings APC System	0.0232	1.95%
Laboratory Hoods	0.0028	0.24%
South Flaring Sta. Nos. 1, 2, 3, 4 and 5	0.1003	8.43%
North Flaring Sta. Nos. 5, 6 and 7	0.0089	0.75%
TEF Turbine No. 4	0.0070	0.59%
SIPS Nos. 4 and 5	0.0061	0.51%
Washwater Filters	0.0003	0.03%
Gas Pretreatment System and Gas Compressor Station. (Fugitive)	0.0000	0.00%
Sludge Truck Loading	0.0003	0.03%
Digesters (Fugitive)	0.0001	0.01%
Biological Reactor Vents	0.0166	1.39%
Mixed Liquor Conveyance Channels APC System	0.2177	18.29%
Secondary Clarifiers	0.0722	6.07%

Note: Individual source health risks do not reflect health risk credit.

Table C-7. JWPCP Compound Contribution to Health Risk (Based on MEI)

Compound	Cancer Risk for 15 MGD Exp. (in a million)	Approximate Contribution
Acetaldehyde	0.0007	0.06%
Acrolein	---	---
Ammonia	---	---
Benzene	0.4187	35.18%
1,3-Butadiene	0.1297	10.90%
Carbon Tetrachloride	0.0101	0.85%
Chlorobenzene	---	---
Chloroform	0.0696	5.85%
p-Dichlorobenzene	0.0810	6.81%
Ethylene Dibromide	---	---
Ethylene Dichloride	0.0058	0.49%
Fluorocarbons	---	---
Formaldehyde	0.0219	1.84%
Freon 11	---	---
H2S	---	---
Methyl Chloroform	---	---
Methylene Chloride	0.0800	6.72%
Perchloroethylene	0.2344	19.69%
Toluene	---	--
Trichloroethylene	0.0015	0.13%
Vinyl Chloride	0.1368	11.49%
Xylenes	---	---

Note: Individual compound health risks do not reflect health risk credit.

Table C-8. San Jose Creek WRP (Stage IV) Source Contribution to Health Risk (Based on MEI)

Source Description	Cancer Risk (in a million)	Approximate Contribution
Aeration Tanks	0.48	81%
Secondary Clarifiers (Including Weirs)	0.01	2%
Tertiary Filters	0.01	2%
Effluent Structure	0.09	15%
Outfall Vent	0.00	0%

Table C-9. San Jose Creek WRP (Stage IV) Compound Contribution to Health Risk (Based on MEI)

Compound	Cancer Risk (in a million)	Approximate Contribution
Benzene	0.01	2%
Carbon Tetrachloride	0.00	0%
Chlorobenzene	0.00	0%
Chloroform	0.17	29%
p-Dichlorobenzene	0.14	24%
Formaldehyde	0.01	2%
Methyl Chloroform	0.00	0%
Methylene Chloride	0.01	2%
Perchloroethylene	0.25	42%
Styrene	0.00	0%
Toluene	0.00	0%
Trichloroethylene	0.00	0%
Xylenes	0.00	0%

Table C-10. Whittier Narrows WRP Source Contribution to Health Risk (Based on MEI)

Source Description	Cancer Risk (in a million)	Approximate Contribution
Aeration Tanks	0.40	42%
Secondary Clarifiers (Including Weirs)	0.00	0%
Tertiary Filters	0.00	0%
Effluent Structure	0.55	58%
Chlorine Station	0.00	0%

Table C-11. Whittier Narrows WRP Compound Contribution to Health Risk (Based on MEI)

Compound	Cancer Risk (in a million)	Approximate Contribution
Benzene	0.02	2%
Chlorine	0.00	0%
Chloroform	0.44	46%
p-Dichlorobenzene	0.28	29%
Formaldehyde	0.00	0%
Methyl Chloroform	0.00	0%
Methylene Chloride	0.02	2%
Perchloroethylene	0.19	20%
Styrene	0.00	0%
Toluene	0.00	0%
Xylenes	0.00	0%

Table C-12. Los Coyotes WRP Source Contribution to Health Risk (Based on MEI)

Source Description	Cancer Risk (in a million)	Approximate Contribution
Aeration Tanks	0.15	18%
Secondary Clarifiers (Including Weirs)	0.00	0%
Tertiary Filters	0.00	0%
Effluent Structure	0.68	82%
Chlorine Station	0.00	0%

Table C-13. Los Coyotes WRP Compound Contribution to Health Risk (Based on MEI)

Compound	Cancer Risk (in a million)	Approximate Contribution
Benzene	0.01	1%
Chlorine	0.00	0%
Chloroform	0.50	60%
p-Dichlorobenzene	0.27	33%
Formaldehyde	0.00	0%
Methyl Chloroform	0.00	0%
Methylene Chloride	0.01	1%
Perchloroethylene	0.04	5%
Styrene	0.00	0%
Toluene	0.00	0%
Trichloroethylene	0.00	0%
Xylenes	0.00	0%

Table C-14. Emissions from Biosolids Transport

Scenario and Segment	Emissions in Pounds per Day									
	Emissions in the South Coast Air Basin					Emissions in the Southeast Desert Air Basin				
	CO	ROG	NO_x	PM10	SO_x	CO	ROG	NO_x	PM10	SO_x
2010 With Project Scenario										
JWPCP to SCAB/SEDAB border	142.7	15.3	160.4	11.9	9.4	-	-	-	-	-
SCAB/SEDAB border to remote landfill	-	-	-	-	-	327.1	34.2	370.6	27.6	21.8
JWPCP to Puente Hills	33.6	4.6	18.7	1.8	1.4	-	-	-	-	-
Total	176.3	19.9	179.1	13.7	10.8	327.1	34.2	370.6	27.6	21.8
2010 Baseline Scenario										
JWPCP to SCAB/SEDAB border	77.0	8.2	86.5	6.4	5.1	-	-	-	-	-
SCAB/SEDAB border to remote landfill	-	-	-	-	-	176.4	18.5	199.9	14.9	11.7
JWPCP to Puente Hills	33.6	4.6	18.7	1.8	1.4	-	-	-	-	-
Total	110.6	12.8	105.2	8.2	6.5	176.4	18.5	199.9	14.9	11.7
Net Project-Related Emissions	65.7	7.1	73.9	5.5	4.3	150.7	15.7	170.7	12.7	10.1

Note: A dash "-" indicates the segment is not located in the subject air basin.

Net project-related emissions is the change from the baseline scenario to the "with project" scenario.

Significance thresholds in the SCAB: 550 pounds/day CO, 55 pounds/day ROG, 55 pounds/day NO_x, 150 pounds/day PM10, and 150 pounds/day SO_x.

Significance thresholds in the SEDAB: 550 pounds/day CO, 75 pounds/day ROG, 100 pounds/day NO_x, 150 pounds/day PM10, and 150 pounds/day SO_x.

Source: MAAQI model.