STOEL RIVES LLP

ATTORNEYS AT LAW

DOCKET
11-AFC-1
DATE OCT 27 2011
RECD. OCT 27 2011

500 Capitol Mall, Suite 1600
Sacramento. California 95814
main 916.447 9700
fax 916.447.4781
imv.stoel.com

October 27, 2011

MELISSA A. FOSTER
Direct (916) 319-4673
mafoster@stoel.com

VIA EMAIL & HAND DELIVERY

Mr. Eric Solorio, Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re:Pio Pico Energy Center Project (11-AFC-01)
Application for Certification Refinement - Enhanced Water Treatment System

Dear Mr. Solorio:

Applicant Pio Pico Energy Center, LLC submits the enclosed refinement to its Application for Certification ("AFC") for the Pio Pico Energy Center Project ("PPEC"). The refinement proposes modifications to Applicant's originally proposed wastewater treatment and disposal method. Specifically, the original proposal sought approval of final wastewater disposal using the local sewer system. Since the AFC was filed, Applicant has determined that the local sewer system could not receive PPEC's wastewater as originally planned. Therefore, Applicant is now proposing a water-conserving Enhanced Water Treatment System.

The Enhanced Water Treatment System is more fully described and its environmental effects, if any, are analyzed and set forth in the enclosed AFC refinement. If you have any questions regarding the analysis or newly proposed wastewater treatment and disposal method, please do not hesitate to contact Maggie Fitzgerald or me.

Finally, please note a disk containing the AFC refinement will be served on all parties identified on the proof of service list. Should you determine additional paper copies are required beyond those you have requested, please let our office know.

Respectfully submitted,

Melissa A. Foster
MAF:jmw
Enclosure
cc: See Proof of Service List (Enclosure-Documents Provided on Disk Only)

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 —WVVW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *PIO PICO ENERGY CENTER, LLC*

Docket No. 11-AFC-1
PROOF OF SERVICE
(Revised 5/15111)

Pio Pico Energy Center, LLC
Letter to Eric Solorio, Siting Project Manager, California Energy Commission, dated October 27, 2011 re Application for Certification Refinement-Enhanced Water Treatment System

APPLICANT

Gary Chandler, President
Pio Pico Energy Center
P.O. Box 95592
South Jordan, UT 84095
rchandleraepexpoweriroup.com

David Jenkins, Project Manager
Pio Pico Energy Center, LLC
1293 E. Jessup Way
Mooresville, IN 46158
djenkinsa.abexpowergroup.com

APPLICANT'S CONSULTANTS

Maggie Fitzgerald, Project Manager
URS Corporation
2020 East 1st Street, Suite 400
Santa Ana, CA 92705
maqqie fitzqerald(@.urscoro.com

COUNSEL FOR APPLICANT

John A. McKinsey
Melissa A. Foster
Stoel Rives, LLP
500 Capitol Mall, Suite 1600
Sacramento, CA 95814
jamckinsey@stoel.com
mafosterRstoel.com

INTERESTED AGENCIES

California ISO
E-mail Preferred
e-recipient@caiso.com

ENERGY COMMISSION

CARLA PETERMAN
Commissioner and Presiding Member
cpeterma§eneroy.state.ca.us

Jim Bartridge
Adviser to Commissioner Peterman
jbartridAeneroy.state.ca.us

KAREN DOUGLAS
Commissioner and Associate Member
kldoucila eneroy.state.ca.us

Galen Lemei
Adviser to Commissioner Douglas
olemeipenerciy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud eneroy.state.ca.us

Eric Solorio
Siting Project Manager
esolorio@energy.state.ca.us

Kevin W. Bell
Staff Counsel
kwbell enercw.state.ca.us

Jennifer Jennings
Public Adviser
E-mail preferred
pubiicadviser@eneroy,state.ca.us

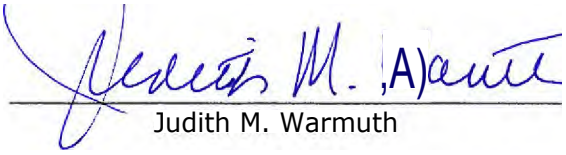
DECLARATION OF SERVICE

I, Judith M. Warmuth, declare that on October 27, 2011, I deposited copies of the aforementioned document and, if applicable, a disc containing the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

AND/OR

Transmission via electronic mail, personal delivery and first class U.S. mail were consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

1 declare under penalty of perjury that the foregoing i correct.



Judith M. Warmuth

Pio Pico Energy Center

AFC Refinement for the Enhanced Water Treatment System

Submitted to the

California Energy Commission

October 2011

Submitted by

Pio Pico Energy Center, LLC

With support from

URS

2020 East First Street, Suite 400
Santa Ana, California 92705

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.1 INTRODUCTION

The Pio Pico Energy Center (PPEC) Application for Certification (AFC) was filed in February 2011, and was accepted as "data adequate" in April 2011. PPEC, LLC, or the "Applicant," is proposing a refinement to the AFC for modifications to the originally defined wastewater treatment and disposal method. The location and description of the project facility, remaining project components, and other project characteristics have not changed, and are as described in the February 2011 AFC and the June 2011 AFC Refinement.

In the February 2011 AFC, the local sewer system was the planned method of final wastewater disposal for the PPEC project. Since the AFC was filed, the Applicant has had ongoing discussions with the City of San Diego regarding Total Dissolved Solids (TDS) limits for PPEC wastewater discharge. During these discussions, the City of San Diego informed the Applicant that the sewer adjacent to the project site does not connect to the Point Loma Wastewater Treatment Plant (WTP), but rather to the City's South Bay Water Reclamation Plant (WRP) that does not accept high TDS wastewater. The City advised that the Point Loma WTP is an acceptable site for disposal of high TDS wastewater, but that such high TDS wastewater could not be transported from the project site via the sewer system to the Point Loma WTP. Therefore, it is typically trucked to a receiving station within the Point Loma WTP system. In August of 2011 the City advised that the TDS limit on wastewater discharged to the South Bay WRP would be approximately 3,200 milligrams per liter (mg/L), which is the current TDS limit for Otay Mesa Generating Project's wastewater, with future restrictions to approximately 1,000 mg/L. The Applicant determined these lower local sewer system TDS limits would substantially increase the amount of process water required due to lower allowable cycles of concentration in the cooling system. Thus, the Applicant herein proposes a water-conserving Enhanced Water Treatment (EWT) System alternative to the disposal method proposed in the February 2011 AFC. The EWT System (1) reduces the amount of Otay Water District (OWD) supplied water consumed by PPEC; (2) reduces PPEC's discharged wastewater volume; and (3) revises the method of wastewater disposal. This enhancement includes the addition of wastewater treatment equipment that produces water suitable for recycling back to the incoming process water storage tank. As a result of this enhanced treatment and reuse, PPEC's final wastewater discharge volume will be significantly reduced, thereby enabling it to be economically trucked offsite for disposal, in lieu of discharging to the local sewer system as proposed in the February 2011 AFC.

1.2 ENHANCED WATER TREATMENT SYSTEM LOCATION AND DESCRIPTION

The location of the EWT System will be in an expansion of the water treatment building described in the AFC, increasing the square footage of the previously proposed water treatment building by approximately 9,200 square feet. Addition of the EWT System will not cause any changes to the process water treatment system equipment scope, or to the general layout and operation of the balance of plant equipment.

The EWT System adds additional processing equipment to the wastewater stream described in the February 2011 AFC. The water treatment processes as described in the AFC will remain unchanged upstream of the EWT System equipment and structures. The EWT System reduces the PPEC originally projected annual water consumption by 17 percent (by recycling) and

reduces the originally estimated annual wastewater volume by 82 percent. This significant reduction in final wastewater volume results in an increase in final wastewater TDS, therefore the final wastewater will be trucked to the City of San Diego Pump Station Number 1 (a receiving station within the Point Loma WTP system), located approximately 21 miles from the project site.

1.3 PROJECT SCHEDULE

The EWT System will be constructed as part of the water treatment system, in accordance with the original project schedule as provided in the February 2011 AFC, which notes that PPEC is expected to begin construction in 2013 following the California Energy Commission (CEC) approval of the AFC. As described in Section 3.9 of the February 2011 AFC, water and wastewater treatment system construction will occur during months 4 through 6 following receipt of the project's full notice to proceed.

1.4 PROJECT OWNERSHIP

As described in the February 2011 AFC, the project would be constructed, owned, and operated by PPEC, LLC.

1.5 SUMMARY OF ENVIRONMENTAL IMPACTS

As noted above, the EWT System adds processing equipment to the wastewater stream described in the AFC, reduces the PPEC originally projected annual water consumption, and significantly reduces the original projected annual wastewater volume. The EWT System does not alter overall project impacts previously identified in the February 2011 AFC, and presents no LORS-related compliance issues.

2.1 PROJECT OBJECTIVES/NEED

In the February 2011 AFC, the local sewer system was the planned method of wastewater disposal for the Pio Pico Energy Center (PPEC). In August 2011, the City of San Diego and the Applicant (PPEC, LLC) jointly determined that the sewer system could not receive the project wastewater as originally planned in the February 2011 AFC due to the project wastewater's projected level of Total Dissolved Solids (TDS). Upon review and analysis of several wastewater management options, the Applicant is proposing an environmentally and economically viable alternative to that included in the February 2011 AFC - an onsite Enhanced Water Treatment (EWT) System. The proposed EWT System will reduce the projected amount of incoming water used by the project, will reduce the wastewater volume, and will revise the method of wastewater disposal. Specifically, the EWT System is based on the addition of wastewater treatment equipment that provides water to be recycled back to the incoming process water storage tank. Moreover, the project's final wastewater discharge volume will be significantly reduced, thereby environmentally and economically enabling it to be trucked offsite for disposal, in lieu of discharging to the area sewer system, as originally outlined in the February 2011 AFC. It is important to note that the ultimate fate of the PPEC wastewater will not change; that is, it will still be managed by the Point Loma Wastewater Treatment Plant (WTP) before discharge via the Point Loma Ocean Outfall.

This AFC Refinement describes and addresses the proposed EWT System, which updates the wastewater treatment and disposal method described in the February 2011 AFC. This AFC Refinement is consistent with the PPEC project objectives and needs described in Section 2 of the February 2011 AFC.

The PPEC project objectives and needs described in Section 2.0, Project Objectives/Needs of the February 2011 AFC have not changed.

3.1 INTRODUCTION

The Pio Pico Energy Center (PPEC) Application for Certification (AFC) was filed in February 2011, and was accepted as "data adequate" in April 2011. PPEC, LLC (the "Applicant") previously submitted a refinement to the AFC in June 2011 for minor modifications to a proposed gas line route. This refinement is based on modification and enhancement of the previously proposed water treatment and disposal system due to recent input from the City of San Diego. The Applicant recently learned the City of San Diego will impose a Total Dissolved Solids (TDS) limit of 1,000 milligrams per liter (mg/L) for wastewater discharge to the local sewer system that conveys wastewater to the City of San Diego's South Bay Water Reclamation Plant (WRP). At the recommendation of the City of San Diego, final treated wastewater will now be trucked to the City of San Diego's industrial wastewater disposal facility that ultimately discharges to the City's Point Loma Wastewater Treatment Plant (WTP), as that facility does not have a restriction on TDS.

The Applicant proposes an enhancement to the water treatment system previously described in the February 2011 AFC that: (1) reduces the amount of Otay Water District (OWD) supplied water consumed by PPEC; (2) reduces PPEC's discharged wastewater volume; and (3) revises the method of wastewater disposal. The PPEC's Enhanced Water Treatment (EWT) System consists primarily of a high-pH reverse osmosis (RO) that produces water suitable for reuse as plant makeup water. As a result of this enhanced treatment and reuse, PPEC's final wastewater discharge volume will be significantly reduced, thereby enabling it to be economically trucked offsite for disposal, in lieu of discharging to the local sewer system as outlined in the AFC. The location and description of the project facility, other project components, and other project characteristics are unchanged from those described in the February 2011 AFC and the AFC Refinement of June 2011.

As described in the February 2011 AFC and the April 2011 Data Adequacy Supplement, PPEC would require 378 acre-feet per year of recycled water for process water needs. The EWT System reduces the originally projected annual process water consumption from 378 acre-feet per year (afy) to 314 afy, equating to a 17 percent reduction in annual water use of recycled water. Furthermore, the enhancement reduces the originally projected annual wastewater volume from 77 acre-feet per year to 14 acre-feet per year, equating to a 82 percent reduction in annual wastewater volume. This significant reduction in final wastewater volume results in a substantial increase in the TDS levels in the final wastewater stream. Therefore, final wastewater will not be discharged to the local City sewer system and instead it will be trucked to the City of San Diego Pump Station Number 1, located approximately 21 miles from the project site. In the event that the planned recycled water supply system expansion does not become operational during the PPEC's service life, and PPEC is required to use potable water for its process water supply, the EWT System would similarly reduce water consumption and wastewater production.

As originally defined in the February 2011 AFC, the two process wastewater streams are the cooling system blowdown and the oil/water separator effluent. Both of these streams will be routed to the Wastewater Collection Tank (same volume and dimensions as described in the February 2011 AFC). This collection tank will now be defined as the Process Wastewater Collection Tank, to differentiate from final wastewater produced by the EWT System. Rather than discharge the process wastewater from the Process Wastewater Collection Tank to the sewer as originally defined, the process wastewater will be conveyed to an added onsite high-pH

RO system. The RO system will recycle 80 to 90 percent of the treated process wastewater for reuse as makeup water. As noted above, the EWT System reduces both the required supply volume and the final discharge volume. Due to high TDS, the final wastewater will not be discharged directly to the local sewer, but rather stored in a new 20,000 gallon wastewater treatment RO reject tank, to be called the Final Wastewater Storage Tank (FWST). Water from the FWST will then be pumped into a tanker truck and transported to the City of San Diego's industrial wastewater disposal facility referred to as Pump Station Number 1. Approximately three trucks per day would be needed during an average operation day; however, a maximum of seven trucks would be needed if the facility operated 24-hours a day on extremely hot days, which is highly unlikely. Sanitary wastewater will be disposed of separately via a short connection to an existing sewer main in Calzada de la Fuente along the north project site boundary, as described in the February 2011 AFC.

Changes to project site layout associated with the EWT System include the expansion of the water treatment building, addition of the 20,000 gallon FWST, and addition of a tanker truck loading area. The footprint of the water treatment building will be expanded by 50 feet (ft) on the east and by 40 ft on the south to accommodate the new EWT equipment. The original building was 6,300 square feet (105 ft by 60 ft); the enlarged building will be 15,500 square feet (155 ft by 100 ft). The height of the building will be the same as originally proposed (15 ft). The dimensions of the FWST will be approximately 11 ft in diameter by 30 ft high (see Revised Table 3.5-1). See the Revised Figure 3.1-3A, Site Arrangement for the revisions to the site layout.

REVISED TABLE 3.5-1
MAJOR EQUIPMENT INFORMATION

Description	Capacity	Dimensions		
		Length (ft)	Width (ft)	Height (ft)
Combustion Turbines (3)	103 MW	130	30	40
Intercooler Heat Exchangers (3)	120 MMBtu/hr[1]	44	15	13.5
CTG Stacks (3)	--	--	14.5 diameter	100
Variable Bleed Vents, with Silencers (3)	--	--	12	53
Hot SCR	--	70	25	35
Wet Cooling Components (12)	120 MMBtu/hr	26	14	22
Dry Cooling Components (9)		47	14	15
Raw Water Storage Tank	500,000 gal	--	54 diameter	30
Demineralized Water Storage Tank	240,000 gal	--	38 diameter	30
Process Wastewater Collection Tank[2]	95,000 gal	--	26 diameter	24
Final Wastewater Storage Tank[3]	20,000 gal	--	11 diameter	30
Gas Compressor Enclosure (3)	--	50	17	15

[1] MMBtu/hr = million British Thermal Units per hour

[2] The Wastewater Collection Tank described in the February 2011 AFC is now the Process Wastewater Collection Tank. It has the same dimensions as originally proposed.

[3] The EWT System now includes an additional 20,000 gallon tank; all other items are the same as shown on Table 3.5-1 in the February 2011 AFC.

3.2 ENHANCED WATER TREATMENT SYSTEM DESCRIPTION

3.2.1 Location and Setting

The EWT System consists of an enlarged water treatment building containing the high-pH RO wastewater treatment system, additional piping, proposed FWST and proposed transport tanker staging area, as shown on Revised Figure 3.1-3A, Site Arrangement. Addition of the EWT System does not result in any changes to the power block area layout or the majority of balance of plant equipment.

3.2.2 Physical Setting

As described above, the EWT System would be contained within the same 9.99-acre project site previously described in the AFC. Therefore, the EWT System would not change the topography, geological, seismic, or hydrological conditions described for the project study area in the February 2011 AFC and June 2011 AFC Refinement.

3.2.3 Water Treatment Processes

The EWT System includes additional processing equipment for the wastewater stream described in AFC Section 3.5.7.4, Wastewater Treatment and Discharge. The water treatment processes for cooling system makeup water and demineralized water, as described in AFC Section 3.5.7.3, Water Treatment, which are upstream of the EWT System equipment and structures, remain unchanged. Revised Figure 3.5-4A, Water Balance Flow Diagram, shows the revised water balance flow diagram with the enhanced process equipment shown in a red revision box. This new EWT System consists of: (1) a high-pH RO wastewater treatment system; (2) water recycle piping; (3) FWST; and (4) a wastewater tanker truck loading area.

As described in the February 2011 AFC, process wastewater (blowdown) from the wet surface-to-air coolers and the oil/water separator effluent will be stored in the existing 95,000 gallon tank, now called the Process Wastewater Collection Tank. Wastewater will no longer be disposed of into the local sewer, but will now be treated to produce both a recycled water stream and a final wastewater effluent.

The EWT System equipment will be housed in an expansion of the water treatment building previously shown in the AFC. EWT System equipment consists of a reaction tank and chemical feeds for softening, a ceramic membrane filter, an ion exchange water softener, cartridge filtration, and RO equipment. Pretreatment processes upstream of the RO are designed to reduce the hardness, metals, and suspended solids in the wastewater. The RO process is designed to operate at an elevated pH that controls biological, organic, and particulate fouling, eliminates scaling due to calcium and metal salts, and increases organics rejection.

The recycled water stream produced from the EWT System will be piped back to the Raw Water Tank (same volume and dimensions as described in the February 2011 AFC) for process water use. This will reduce the demand for water supply and will slightly improve the overall quality of the service water.

The EWT System does not change operations of the combustion turbines or cooling system. The quality of the cooling system blowdown that feeds into the EWT System will have the same constituent level limitations as in the original February 2011 AFC.

The very small volume of EWT RO reject, a highly saline wastewater, is the final wastewater effluent that will be stored in the dedicated FWST. This final wastewater stream will be transferred to tanker trucks and then transported to the City of San Diego's industrial wastewater disposal facility. The number of tanker trucks will depend on the amount of final wastewater produced, which depends on the ambient conditions and number of hours that PPEC operates (refer to Section 3.6 for additional information).

The EWT process does not alter the sanitary waste stream as originally described in the February 2011 AFC. The sanitary wastewater will still be discharged to the East Otay Mesa Sewer Maintenance District's sewer system.

Additional chemicals used in the proposed EWT process include the following, based on an average day with 4,000 hours per year operation:

Sodium Bisulfite	13 dry-lbs/day
Soda Ash	372 dry-lbs/day
Caustic Soda	463 dry-lbs/day
Hydrochloric Acid	72 dry-lbs/day
Antiscalant	2 dry-lbs/day
Citric Acid	5 dry-lbs/day
NA-EDTA	1.5 dry lbs/day
RO and Membrane Cleaners	4.5 dry lbs/day

A seven to fourteen day supply of these chemicals will be stored in compliance with LORS either inside the expanded water treatment building or in portable containers adjacent to the building.

3.3 CIVIL/STRUCTURAL FEATURES

With the exception of an expanded water treatment building and an additional water storage tank, there are no changes to the buildings, structures or other civil/structural features described in the February 2011 AFC.

The fire protection system has been updated to feed directly from the local OWD system in Alta Road. Revised Figure 3.5-5, Fire Protection System, is provided in this AFC Refinement to reflect the changes to the western portion of the site resulting from the EWT System.

3.3.1 Buildings

The water treatment building will be expanded by approximately 9,200 square feet to house the EWT System equipment as shown on Revised Figure 3.1-3A, Site Arrangement. The original proposed water treatment building was 6,300 square feet and the revised building will now be 15,500 total square feet. The type of foundation will be the same, either mat foundation or

individual spread footings. There are no changes to any of the other buildings described in the February 2011 AFC.

Revised Figure 3.4-3, Preliminary Grading and Drainage Plan, shows the changes to the site to accommodate the expanded building. The modifications associated with the EWT would not substantially change stormwater management at the site. See discussion in Section 5.5, Water Resources, in this AFC Refinement for additional information.

3.3.2 Yard Tanks

The EWT System includes an additional 20,000 gallon FWST. Similar to the other storage tanks described in the February 2011 AFC, the FWST will be vertical and cylindrical and supported on a suitable foundation. The foundation will be approximately three feet deep. The over excavation required to construct the foundation is estimated to be approximately five feet deep and will be finalized based on final geotechnical design. The tank and associated piping will be painted carbon steel, similar to the other water storage tanks.

3.3.3 Sanitary System

The sanitary system will be the same as described in the February 2011 AFC. Sanitary wastes will not be affected by the EWT System, and will be discharged to an existing sewer main in Calzada de la Fuente, along the north project site boundary.

3.4 WATER SUPPLY AND WASTEWATER CHARACTERIZATION

Recycled or potable water from OWD will still be the primary source of process water for the PPEC. As described above, the EWT System pumps the process wastewater through a chemical treatment, filtration, and high-pH RO system to create two effluent streams – one a high quality, high volume product stream that is recycled for reuse as makeup water, and one a low quality, low volume reject stream that is disposed of offsite.

3.4.1 Process Water and Wastewater Qualities

The high quality EWT product stream is of better quality than the incoming OWD supplied water and will contribute approximately 17 percent of the required makeup water required by PPEC. See Revised Table 3.5-5 for the expected water quality of the EWT recycled water stream and Revised Figure 3.5-4A for the revised water balance flow diagram.

REVISED TABLE 3.5-5
EXPECTED AVERAGE WATER QUALITY OF OWD RECYCLED WATER, OWD POTABLE WATER, AND EWT RECYCLED WATER

Constituent	Units	OWD Recycled Water[1]	OWD Potable Water[2]	EWT Recycled Water[3]
Conductivity	S/cm	1,450	895	77
pH		6.9	8.1	7.0
Total Suspended Solids	ppm	2	NA	NA
Total Dissolved Solids	ppm	887	545	50
Ion Chemistry, as CaCO3				

Constituent	Units	OWD Recycled Water[1]	OWD Potable Water[2]	EWT Recycled Water[3]
Total Alkalinity	mg/L	85	122	13
Hardness	mg/L	279	249	0
Calcium	mg/L	167	59	0
Cations				
Magnesium	mg/L	112	24	0
Sodium	mg/L	332	87	50
Potassium	mg/L	22	4.6	0
Bicarbonate	mg/L	85	NA	13
Sulfate	mg/L	245	180	3
Chloride	mg/L	326	89	34
Nitrate-Nitrite	mg/L	52	ND	0
Trace Metals				
Aluminum	mg/L	0.057	NA	0.002
Antimony	mg/L	< 0.001	NA	0
Arsenic	mg/L	0.0015	ND	0
Barium	mg/L	0.086	NA	0.003
Beryllium	mg/L	< 0.001	NA	0
Boron	mg/L	0.41	0.14	0.012
Cadmium	mg/L	< 0.0005	NA	0
Chromium	mg/L	0.0024	NA	0
Cyanide	mg/L	< 0.005	NA	0
Copper	mg/L	0.05	0.444	0.003
Fluoride	mg/L	0.525	0.9	0
Iron	mg/L	0.03	NA	0.001
Lead	mg/L	0.00078	NA	0
Manganese	mg/L	< 0.002	NA	0
Mercury	mg/L	< 0.0002	NA	0
Nickel	mg/L	< 0.005	NA	0
Selenium	mg/L	< 0.005	NA	0
Silver	mg/L	0.0012	NA	0
Thallium	mg/L	< 0.001	NA	0
Zinc	mg/L	0.09	NA	0.002
Silica, SiO2	mg/L	12	NA	0

Notes:

1. Water quality for recycled water is based on data for the Ralph W. Chapman Water Recycling Facility for 2007, 2008, and 2009 (OWD, 2008, 2009b, and 2010b), as provided in Appendix I-2 of the February 2011 AFC. Seasonal variability of the recycled water quality is considered. The recycled water distributed by OWD has received tertiary treatment that meets California Title 22 requirements for reuse. In addition, the recycled water system includes storage facilities for blending and reducing variability in quality and flows.

2. Water quality for potable water is from Otay Water District, 2009 and 2010. No margin has been added to the two samples used to estimate potable water quality.

3. The EWT System process pumps the process wastewater through a chemical treatment, filtration, and high-pH RO system. The high quality effluent stream is recycled for reuse as makeup water.

mg/L = milligrams per liter
NA = not available
ND = not detected, detection limit not available
ppm = parts per million
S/cm = microsiemens per centimeter
- = not estimated

The EWT System's RO reject (Final Wastewater) is much lower in volume than the originally proposed PPEC wastewater volume but has a much higher TDS than the original process wastewater. See Revised Table 3.5-7 for the EWT final wastewater characterization and industrial wastewater limits as required by the City of San Diego's trucked industrial waste generator permit.

REVISED TABLE 3.5-7
FINAL PROCESS WASTEWATER CHARACTERIZATION

Constituent	Units	EWT Final Wastewater[1]	Industrial Wastewater Limits[2]
Conductivity	S/cm	41,234	NA
pH		10.0	5 to 12.5
Total Suspended Solids	ppm	49	100[3]
Total Dissolved Solids	ppm	26,719	NA
Ion Chemistry, as $CaCO_3$			
Total Alkalinity	mg/L	831	NA
Hardness	mg/L	7,777	NA
Calcium	mg/L	4,691	NA
Cations			
Magnesium	mg/L	3,086	NA
Sodium	mg/L	12,616	NA
Potassium	mg/L	663	NA
Bicarbonate	mg/L	831	NA
Sulfate	mg/L	9,428	NA
Chloride	mg/L	9,240	NA
Nitrate-Nitrite	mg/L	1,317	NA
Trace Metals			
Aluminum	mg/L	-	NA
Antimony	mg/L	-	NA
Arsenic	mg/L	-	NA
Barium	mg/L	-	NA
Beryllium	mg/L	-	NA
Boron	mg/L	-	NA
Cadmium	mg/L	-	1.0
Chromium	mg/L	-	5.0
Cyanide	mg/L	-	1.9
Copper	mg/L	2.13	11.0
Fluoride	mg/L	-	NA
Iron	mg/L	0.67	NA
Lead	mg/L	-	5.0
Manganese	mg/L	-	NA
Mercury	mg/L	-	NA
Nickel	mg/L	-	13
Selenium	mg/L	-	NA
Silver	mg/L	-	NA
Thallium	mg/L	-	NA
Zinc	mg/L	2.2	24
Silica, SiO2	mg/L	321	NA

Notes:

[1] Estimated by Kiewit and based on a worse-case use of recycled water, not potable water, with EWT product recycled into the makeup. Process wastewater quality assumes chemical addition and materials upgrades to equipment in contact with wastewater. Trace metals given at their minimum detection limit were not propagated throughout the system. Conductivity is a field measurement but is estimated in the table. The final wastewater is trucked off site to an industrial disposal facility operated by the City of San Diego.

[2] Based on City of San Diego Metropolitan Wastewater Department's Industrial Wastewater Control Program's Current Limits for trucked industrial wastewater.

[3] Federal pretreatment standards for power plant discharges to a sewer system limit total suspended solids for a maximum one day at 100 mg/L and average 30-day to 30 mg/L (40 CFR 423)

mg/L = milligrams per liter

NA = not applicable, since no limit established for the parameter

ND = not detected, detection limit not available

ppm = parts per million

S/cm = microsiemens per centimeter

- = not estimated

3.4.2 Process Water Supply and Wastewater Discharge Quantities

As a result of the EWT System, PPEC's overall process water need is reduced by approximately 17 percent on an annual basis. Revised Table 3.5-4 compares the maximum daily, average daily and annual incoming OWD recycled water supply flows with the flows using the EWT System. New Table 3.5-4A provides a similar summary based on potable water supply.

REVISED TABLE 3.5-4
DAILY AND ANNUAL WATER FLOWS BASED ON RECYCLED WATER SUPPLY

Flow Stream	AFC Maximum Daily (1,000 gpd)	With EWT Maximum Daily (1,000 gpd)	AFC Average Daily (1,000 gpd)	With EWT Average Daily (1,000 gpd)	AFC Annual (afy)	With EWT Annual (afy)
Process Water Supply (Recycled Water)						
Cooling System Makeup	248	417	124	159	139	178
UF and RO Systems	315	368	147	159	165	178
Evaporative Cooler Makeup	255	55	64	16	71	18
Service Water	7	7	3	3	3	3
Recycled EWT Product	0	(141)	0	(57)	0	(63)
Total Process Water Requirements	825	706	338	280	378	314
Domestic Water Supply	3	3	1	1	1	1
Process Wastewater						
Cooling System Blowdown	124	143	57	57	64	64
Oil-water-separator	26	28	12	12	13	13
Total Process Wastewater	150	171	69	69	77	77
Recycled EWT Product	0	(141)	0	(57)	0	(63)
Sanitary Wastewater	3	3	1	1	1	1
Total Wastewater to County Sewer (without EWT)	153	-	70	-	78	-
Final Wastewater Trucked to Disposal Facility (with EWT)	-	30	-	12	-	14

afy acre-feet per year
gpd gallons per day
UF ultra filtration
RO reverse osmosis
See Revised Figure 3.5-4A for water balance flow diagram and Revised Figure 3.5-4B for water balance flow values.

NEW TABLE 3.5-4A
DAILY AND ANNUAL WATER FLOWS BASED ON POTABLE WATER SUPPLY

Flow Stream	With EWT Maximum Dail (1,000 gpd)	With EWT Average Daily (1,000 gpd)	With EWT Annual (afy)
Process Water Supply (Potable Water)			
Cooling System Makeup	413	154	172
UF and RO Systems	387	165	185
Evaporative Cooler Makeup	7	2	2
Service Water	7	3	3
Recycled EWT Product	(114)	(46)	(51)
Total Process Water Requirements	700	278	311
Domestic Water Supply	3	1	1
Process Wastewater			
Cooling System Blowdown	109	43	48
Oil-water-separator	29	13	14
Total Process Wastewater	138	56	62
Recycled EWT Product	(114)	(46)	(51)
Sanitary Wastewater	3	1	1
Total Wastewater to County Sewer (without EWT)	-	-	-
Final Wastewater Trucked to Disposal Facility (with EWT)	24	10	11

afy acre-feet per year
gpd gallons per day
UF ultra filtration
RO reverse osmosis
See Revised Figure 3.5-4A for water balance flow diagram and New Figure 3.5-4C for water balance flow values.

As expected, for every gallon of wastewater that is recycled, the disposal volume is reduced accordingly. The 63 afy re-introduced to the process reduces the amount of final wastewater disposal by the same amount. This relationship and the comparative disposed wastewater volumes are shown in Revised Table 3.5-4 above.

Comparatively speaking, the EWT System reduces PPEC's annual wastewater disposal volume by approximately 82 percent.

Based on 21 gallons per minute (gpm) of final wastewater produced on a peak average day (see Revised Figure 3.5-4B, Water Balance Flow Values) and an average of 11 hours per day of plant operation, approximately 14,000 gallons of final wastewater will be produced per day. Wastewater haul trucks with two tanks have approximately 7,000 gallons of capacity. The majority of haul trucks that haul wastewater to the City of San Diego's Pump Station Number 1 have approximately 4,500 gallons of capacity. Assuming that each tanker truck has a capacity of approximately 4,500 gallons, an average of three trucks per day will be required to haul the wastewater to the disposal facility. The maximum daily wastewater volume of 30,000 gallons represents an extreme operating scenario in which the PPEC would be operating at full load for 24 hours a day during ambient air temperature of 93°F for the entire 24-hour period. Under this extreme and highly unlikely operating scenario, as many as seven 4,500 gallon wastewater haul trucks per day would be required.

3.5 CONSTRUCTION SCHEDULE AND WORKFORCE

Construction of the proposed EWT System would occur according to the schedule and workforce described in Section 3.9 of the February 2011 AFC. No additional construction workers are expected to be required for the EWT System; therefore, there are no changes to the project workforce projections shown on Table 3.9-2A of the February 2011 AFC. The EWT capital cost is estimated to be approximately $7 million.

3.6 OPERATIONS AND MAINTENANCE

As described in Section 3.10.4 of the February 2011 AFC, PPEC, LLC will construct, own, operate, and maintain the EWT System, including the EWT System components.

No additional operational workers are expected to be required for the enhanced EWT System; therefore, there are no changes to the project workforce projections shown on Table 3.9-2B of the February 2011 AFC. Additional annual operations and maintenance (O&M) cost associated with the EWT System are estimated to be approximately $86,000.

Final process wastewater will be trucked offsite by a licensed waste hauler via local roads to the City of San Diego industrial wastewater disposal facility. This facility is located at Pump Station Number 1 at 3350 East Harbor Drive in San Diego, approximately 21 miles from the project site. New Figure 5.11-10, EWT Wastewater Traffic Haul Route shows the location of the disposal facility and truck route. The estimated number of wastewater haul trucks during average peak operations would be three trucks in one day, assuming that each truck can haul 4,500 gallons.

The demineralized water storage tank has a process water capacity of 240,000 gallons. In the event that there is an interruption in the delivery of water supplied by OWD that results in a total loss of water supply, the PPEC would be able to operate for approximately 8.5 hours during average operations (i.e., 240,000 gallons / 490 gpm / 60 minutes per hour). OWD's water supply system includes several reservoirs that provide storage capability and allow OWD to regulate flows to meet demands. In addition, OWD has ongoing capital improvement and maintenance programs to ensure reliability in water deliveries.

The FWST has a capacity of 20,000 gallons. In the event that there is a temporary interruption in the wastewater haul truck service or the City of San Diego has a temporary unplanned shutdown at Pump Station Number 1, PPEC can operate for approximately 18.5 hours during average operations and approximately 14.5 hours during peak operations (i.e. 20,000 gallons / 18 gpm / 60 minutes per hour and 20,000 gallons / 23 gpm / 60 minutes per hour, respectively). The City of San Diego operates a highly reliable wastewater collection and treatment system. Preventative maintenance is performed during scheduled outages during the night. In the unlikely event that Pump Station Number 1 is shut down, additional PPEC backup provisions include onsite storage and bringing in additional temporary wastewater storage trucks or containers.

3.7 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

No applicable LORS in addition to those identified in the February 2011 AFC were identified for the EWT System enhancement.

3.8 REFERENCES

Pio Pico Energy Center, LLC. 2011. Pio Pico Energy Center Application for Certification (AFC). February 9, 2011.

Pio Pico Energy Center, LLC. 2011. Pio Pico Energy Center Application for Certification (AFC), Data Adequacy Supplement. April 2011.

Pio Pico Energy Center, LLC. 2011. Pio Pico Energy Center Application for Certification (AFC) Refinement. June 2011.

As discussed in the February 2011 Application for Certification (AFC) for the Pio Pico Energy Center (PPEC), Title 14 of the California Code of Regulations Section 15126.6 requires an applicant to consider "the range of reasonable alternatives to the project, including the 'no project alternative,'…which will feasibly attain most of the basic objectives of the project, but will avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives."

The Enhanced Water Treatment (EWT) System analyzed in this AFC Refinement does not change the conclusions previously presented in Section 4.0 of the February 2011 AFC or Section 4.0 of the June 2011 AFC Refinement.

4.1 PROJECT OBJECTIVES AND SCOPE OF THE ALTERNATIVES ANALYSIS

The EWT System does not change the Project Objectives and Scope of the Alternatives Analysis previously discussed in the February 2011 AFC.

4.2 NO PROJECT ALTERNATIVE

The EWT System does not change the analysis of the No Project Alternative previously discussed in the February 2011 AFC.

4.3 GENERATION TECHNOLOGY ALTERNATIVES

The EWT System does not change the analysis of generation technology alternatives previously discussed in the February 2011 AFC.

4.4 WATER/COOLING/WASTEWATER CYCLE ALTERNATIVES

The EWT System does not change the analysis of the cooling system alternatives previously discussed in the February 2011 AFC.

In the February 2011 AFC Section 3.5.7.4, the Applicant described and analyzed the sewer interconnection to the County's Johnson Canyon trunk line with ultimate discharge to the Point Loma Wastewater Treatment Plant (WTP). Under this scenario, the project wastewater Total Dissolved Solids (TDS) levels were not limited because the Point Loma WTP could easily accommodate the PPEC's TDS levels. After the AFC was filed, the Applicant (PPEC, LLC) began its dialog with the City of San Diego Public Utilities – Industrial Wastewater Control Program Division. The Applicant soon learned that the Johnson Canyon trunk line conveys wastewater to the City's South Bay Water Reclamation Plant (WRP), not the Point Loma WTP. The South Bay WRP is designed to treat up to 15 million gallons per day (mgd) of raw wastewater to secondary and tertiary standards to produce recycled water that has a TDS limit of 1,200 milligrams per liter (mg/L) and a TDS goal of 1,000 mg/L. Due to an increase in the number of industries discharging high TDS wastestreams, which make it difficult for the South Bay WRP to meet the TDS requirements for recycled water, the City is beginning to impose strict TDS limits on its customers' incoming wastewaters. Both parties came to the conclusion that it was not effective to treat PPEC wastewater to a point that the South Bay WRP (via the County's Johnson Canyon trunk line) could accommodate it. Furthermore, the Applicant

determined that the best alternative was to reduce the wastewater volume to a point that it could environmentally and economically be transported and discharged into the Point Loma WTP system (i.e., trucked to Pump Station Number 1).

In order to solve the TDS concentration issue, the Applicant set goals to not increase water consumption and to optimize the benefits/conservation versus capital/operations and maintenance (O&M) expenses. Because the water supply will be recycled water that has a TDS concentration of 1,000 mg/L, which is the same as the City's imposed wastewater TDS limit (also 1,000 mg/L), there could be no cycling-up of the PPEC's cooling water (up to 5,000 mg/L as shown on Table 3.5-6 in the February 2011 AFC). This constraint on cycling greatly increases water consumption and efficiency due to the incoming cooling water stream flowing straight-through, that is, the wastewater discharge rate would be the same as the incoming water rate. This is referred to as "once-through cooling." Once-through cooling greatly increases process water demands with little or no gain in output.

The Applicant and the City of San Diego worked diligently in the months that followed the February 2011 AFC. It was concluded that the proposed EWT System which includes on-site wastewater concentrating with associated water reuse as presented in this AFC Refinement offered the best environmental and economical solution. The EWT System does not increase water consumption and optimizes the benefits/conservation versus capital/O&M expenses. The EWT System actually reduces project water demands by approximately 17 percent (from 378 acre feet per year [afy] to 314 afy). Regarding the second goal to optimize benefits/conservation versus capital and O&M expenses, the broad range of wastewater TDS treatment levels begins at "once-through cooling" which affords no additional capital costs, no additional energy costs, but high O&M costs that are directly due to greatly increased water demands. On the other end of the spectrum, "zero liquid discharge" (ZLD) treats and returns nearly all the wastewater volume back to the incoming process tank. This greatly reduces the incoming water demand, but greatly increases capital, energy and labor demands. While the final wastewater discharge volume would be substantially less with a ZLD system, the capital, labor and energy costs associated with a ZLD system would not be economically feasible. As presented in Section 5.5.2.7 in the February 2011 AFC, the estimated capital cost for the ZLD system is on the order of $15 million and the annual O&M costs are on the order of $2 million.

The EWT System presents a balance between water conservation and expenses. The PPEC project now will use an enhanced RO treatment system that will further increase the overall recovery rate to approximately 82 percent, compared to approximately 72 percent for the process water system presented in the February 2011 AFC. As a result, the EWT System reduces the originally projected annual wastewater volume from 78 afy to 14 afy. As presented in Sections 3.5 and 3.6 of this AFC Refinement, the estimated capital cost for the EWT System is approximately $7 million and the annual O&M costs are approximately $86,000.

4.5 SITE LOCATION AND LINEAR ROUTE ALTERNATIVES □ SCREENING AND COMPARATIVE ANALYSIS

Because the City of San Diego will impose a 1,000 mg/L TDS limit on wastewater discharge from the PPEC, the project will no longer discharge process wastewater to the sewer main along Calzada de la Fuente. The project, however, will continue to discharge sanitary wastewater to this sewer main as set forth in the February 2011 AFC. For the project to discharge wastewater

with TDS greater than 1,000 mg/l, it would have to connect to a sewer line that conveys wastewater to the Point Loma WTP. The closest connection is the City of Chula Vista's Salt Creek Interceptor line, located more than five miles north of the project site and across the Otay River through Multiple Species Conservation Program (MSCP) land. Notwithstanding the environmental impacts associated with construction of a pipeline across the Otay River, there is the possibility that the City of San Diego and the City of Chula Vista could reach an agreement and build a diversion structure that would reroute the Salt Creek Interceptor from the Point Loma facility to the South Bay facility. Furthermore, building a pipeline across the Otay River and through MSCP land would be prohibitively expensive on its own. The EWT System does not change the site location and other linear route alternatives previously discussed in the February 2011 AFC and June 2011 AFC Refinement.

4.5.1 Alternative Site Locations

The EWT System does not change the analysis of Alternative Site Locations previously discussed in the February 2011 AFC.

4.5.2 Comparative Summary of Alternative Sites Ability to Meet Screening Criteria

The EWT System does not change the Comparative Summary of Alternative Sites' Ability to Meet Screening Criteria previously discussed in the February 2011 AFC.

4.5.3 Environmental Impacts

The EWT System does not change the Environmental Impacts analyzed for the alternative sites previously discussed in the February 2011 AFC.

4.5.4 Detailed Comparison of Two Feasible Alternatives

The EWT System does not change the Detailed Comparison of Two Feasible Alternatives previously analyzed in the February 2011 AFC.

4.5.5 Environmental, Engineering, and Economic Merits Summary

The EWT System does not change the Environmental, Engineering, and Economic Merits Summary previously addressed in the February 2011 AFC.

5.1 INTRODUCTION

This section presents a description of the affected environment, potential environmental consequences, cumulative impacts, mitigation measures, and applicable laws, ordinances, regulations, and standards (LORS), and permits associated with the Enhanced Water Treatment (EWT) System described in Section 3.0 of this AFC Refinement. The EWT System includes new structures within the Pio Pico Energy Center (PPEC) project site footprint previously described in February 2011 AFC. Refer to Revised Figure 3.1-3A for the modified Site Arrangement.

The resources analyzed in this section are as follows:

- Section 5.2: Air Quality
- Section 5.3: Geological Hazards and Resources
- Section 5.4: Soils
- Section 5.5: Water Resources
- Section 5.6: Biological Resources
- Section 5.7: Cultural Resources
- Section 5.8: Paleontological Resources
- Section 5.9: Land Use
- Section 5.10: Socioeconomics
- Section 5.11: Traffic and Transportation
- Section 5.12: Noise
- Section 5.13: Visual Resources
- Section 5.14: Waste Management
- Section 5.15: Hazardous Materials Handling
- Section 5.16: Public Health
- Section 5.17: Worker Safety

5.2 AIR QUALITY

This section presents a discussion of the potential impacts related to air quality from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.2.1 Affected Environment

The EWT System is located within the study area previously evaluated in Section 5.2.1 in the AFC (February 2011), and is subject to the same geographic, topographic, meteorological, climate, and air quality conditions. Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.2.1 in the AFC (February 2011).

5.2.2 Environmental Consequences

The EWT will require a nominal increase to the water treatment building size, additional wastewater storage tank, and additional water treatment equipment. Construction of the EWT System will result in a less-than-significant increase in emissions compared to those analyzed in Section 5.2.4.1 of the AFC (February 2011; revised August 2011). Therefore, construction impacts of the project would not result in additional impacts than those of the discussion presented in Section 5.2.4.4 of the AFC (February 2011; revised August 2011).

Similarly, operation of the EWT System would not involve emissions in excess of those identified in Section 5.2.4.4 of the AFC (February 2011; revised August 2011). Operation of the EWT System will not affect the Total Dissolved Solids (TDS) level in cooling water. As a result, there will be no change to emissions from the cooling system. The new Final Wastewater Storage Tank (FWST) is small (11 feet in diameter, 30 feet tall) and is not expected to affect dispersion of air emissions from any of the sources. The new configuration of structures will be included in the modeling for the supplemental compliance demonstration currently being prepared.

As described in Section 3.4 of this AFC Refinement, the EWT System will require an average of three daily truck trips, for final wastewater disposal from the PPEC site to Pump Station Number 1 located approximately 21 miles from the site. It is anticipated that there will be a maximum of 1,120 truck trips per year associated with the wastewater transport activity. Emissions from these truck trips are summarized in Table 5.2-1 below. This minimal increase in emissions from truck trips does not result in significant operational impacts to air quality. Impacts from operation of the project are unchanged from the discussion presented in Section 5.2.4.4 of the AFC (February 2011; revised August 2011).

NEW TABLE 5.2-1
ONROAD EMISSIONS FROM WATER DISPOSAL TRUCKS

Number of Trips Per Year	Average Round Trip Haul Distance (miles)	Vehicle Miles Traveled Per Year	Emission Factors (lb/vmt)1					
			NOx	CO	VOC	SOx	PM10/ PM2.5	CO22
1120	42	47,040	0.032	0.016	0.0028	0.000	0.0014	4.13
			Annual Emissions (Tons/Yr)					MTCO2
			0.75	0.38	0.07	0.00	0.03	88.01

Notes:
[1] From EMFAC 2007 V.2.3, heavy-heavy duty Diesel trucks, fleet average for calendar year 2011, San Diego County. See Table G-2.21 for details.
[2] Calculation methods and emission factors from ARB, "Regulation for the Mandatory Reporting of Greenhouse Gas Emissions," December 2007.
CO carbon monoxide
CO2 carbon dioxide
MTCO2 metric tons of carbon monoxide
NOx nitrogen oxides
PM2.5 particulates less than 2.5 microns
PM10 particulates less than 10 microns
SOx oxides of sulfur
VOC volatile organic compounds

5.2.3 Cumulative Impacts

The EWT System will not result in additional significant impacts to air quality as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to air quality resources beyond those addressed in Section 5.2.5 of the AFC (February 2011).

5.2.4 Conditions of Certification

Air quality Conditions of Certification have not yet been proposed for the project. The EWT System poses the same effect to air quality as previously addressed in Section 5.2.7 of the AFC (February 2011). Therefore, the mitigation measures proposed for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.2.7 of the AFC (February 2011).

5.2.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable air quality LORS described in Sections 5.2.3 and 5.2.6 of the AFC (February 2011; revised March 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.2.8 of the AFC (February 2011).

5.2.6 References

No references in addition to those presented in Section 5.2.9 of the AFC (February 2011) were used for this AFC Refinement.

5.3 GEOLOGICAL HAZARDS AND RESOURCES

This section presents a discussion of the potential impacts related to geological hazards and resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.3.1 Affected Environment

The EWT System is located within the study area previously evaluated in Section 5.3.1 in the AFC (February 2011), and is subject to the same regional and local geology described in Sections 5.3.1.1 through 5.3.1.4 of the AFC (February 2011). The EWT System would also be subject to the geological hazard characterizations pertaining to plate tectonic setting, seismicity and seismotectonic, Quaternary fault, seismic shaking, ground rupture, liquefaction, mass wasting and slope stability, subsidence and settlement, expansive soil, and geologic resource conditions addressed in Sections 5.3.1.5 through 5.3.1.14 of the AFC (February 2011). Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.3.1 in the AFC (February 2011).

5.3.2 Environmental Consequences

As described in Section 5.3.2 of the AFC (February 2011), the PPEC project, including the EWT System, will be designed and constructed to meet 2007 California Building Code (CBC) industrial facility standards. As a result, impacts from construction and operation of the EWT System are unchanged from the discussion presented in Section 5.3.2 of the AFC (February 2011).

5.3.3 Cumulative Impacts

The modifications will not result in additional impacts to geological hazards and resources as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to geological hazards and geologic resources beyond those addressed in Section 5.3.3 of the AFC (February 2011).

5.3.4 Conditions of Certification

The EWT System poses the same effect to geological hazards and resources as previously addressed in Section 5.3 of the AFC (February 2011). Therefore, the Conditions of Certification for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.3.4 of the AFC (February 2011).

5.3.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the EWT System, will comply with applicable geologic hazards and resources LORS described in Section 5.3.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.3.5.5 of the AFC (February 2011).

5.3.6 References

No references in addition to those presented in Section 5.3.6 of the AFC (February 2011) were used for this AFC Refinement.

5.4 SOILS

This section presents a discussion of the potential impacts related to soils from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.4.1 Affected Environment

The EWT System is within the same project site footprint described in the AFC (February 2011); therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.4.1 in the AFC (February 2011).

5.4.2 Environmental Consequences

Construction and operation of the EWT System would not involve activities or conditions in excess of those identified in Section 5.4.2 of the AFC (February 2011). As a result, impacts from the project are unchanged from the discussion presented in Section 5.4.2 of the AFC (February 2011).

5.4.3 Cumulative Impacts

The EWT System will not result in additional impacts to soils as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to soil resources beyond those addressed in Section 5.4.3 of the AFC (February 2011).

5.4.4 Conditions of Certification

The EWT System poses the same effect to soils as previously addressed in Section 5.4.2 of the AFC (February 2011). Therefore, the Conditions of Certification for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.4.4 of the AFC (February 2011).

5.4.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable soil-related LORS described in Section 5.4.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.4.5.5 of the AFC (February 2011).

5.4.6 References

No references in addition to those presented in Section 5.4.6 of the AFC (February 2011) were used for this AFC Refinement.

5.5 WATER RESOURCES

This section presents a discussion of the potential impacts related to water resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.5.1 Affected Environment

The EWT System consists of an enlarged water treatment building containing the high-pH reverse osmosis (RO) wastewater treatment system and additional piping, and a proposed Final Wastewater Storage Tank (FWST), as shown on Revised Figure 3.1-3A, Site Arrangement. All of these features are contained within the same 9.99-acre project site previously described in the AFC and located within the study area previously evaluated in Section 5.5.1 in the AFC (February 2011) and AFC Refinement (June 2011), and is therefore subject to the same physiographic, topographic, climate, and water quality conditions. There are no changes to the proposed offsite linears as shown on Figure 5.5-3 (Revised) presented in the June 2011 AFC Refinement. The modifications associated with the EWT System would not cross any additional Federal Emergency Management Agency (FEMA)-designated flood hazard areas or any additional intermittent streams or Clean Water Act (CWA) jurisdictional features. Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.5.1 in the AFC (February 2011) and the AFC Refinement (June 2011).

Instead of discharging directly to the sewer main adjacent to the project site, PPEC will haul the final process wastewater to the City of San Diego's industrial wastewater disposal facility, which is located at Pump Station Number 1. Industrial wastewater received at this facility is combined with wastewater from the southern portion of the San Diego Metropolitan service area and conveyed to Pump Station Number 2. The pumping capacity of Pump Station Number 1 is approximately 160 million gallons per day (mgd). Pump Station Number 2 receives the wastewater from Pump Station Number 1 and wastewater from the north and central regions of the Metro system and conveys the combined wastewater to the Point Loma Wastewater Treatment Plant (WTP). The pumping capacity of Pump Station Number 2 is approximately 432 mgd. The Point Loma WTP is a chemically-assisted primary treatment plant and is the final treatment facility prior to discharge to the Point Loma Ocean Outfall (PLOO). Discharges from the PLOO are permitted under California Regional Water Quality Control Board San Diego Region's Order Number R9-2002-0225, *Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean Through the Point Loma Ocean Outfall, San Diego County*. The Point Loma WTP and PLOO have an average dry weather design flow of 240 mgd and a peak wet weather flow of 432 mgd.

5.5.2 Project Water and Wastewater Needs

Recycled or potable water from the Otay Water Distruct (OWD) will still be the primary source of process water for PPEC. The PPEC's EWT System consists primarily of a high-pH RO system that produces water suitable for reuse as plant makeup water. As a result of this enhanced

treatment and reuse, PPEC's consumption of OWD supplied water and the amount of final wastewater discharged will be significantly reduced.

The EWT System includes additional processing equipment to the wastewater stream described in the February 2011 AFC Section 3.5.7.4, Wastewater Treatment and Discharge. The EWT process is highlighted in a red revision box on Revised Figure 3.5-4A, Water Balance Flow Diagram. The water treatment processes for cooling system makeup water and demineralized water, as described in AFC Section 3.5.7.3, Water Treatment, which are upstream of the EWT System equipment and structures, remain unchanged. The revised water balances correspond to the heat and mass balance diagrams summarized in the February 2011 AFC Table 3.5-2 and shown on Figures 3.5-2A through 3.5-2D, which remain unchanged.

Revised Table 3.5-4 of this AFC Refinement (which also replaces Table 5.5-3 in the February 2011 AFC) shows the maximum daily, average daily, and average annual water supply and wastewater disposal flows assuming that recycled water from OWD is the process water source. New Table 3.5-4A of this AFC Refinement summarizes the flows assuming that potable water is the process water source.

5.5.3 Environmental Consequences

5.5.3.1 Water Supply Effects

Construction of the proposed EWT System would occur according to the schedule and workforce described in Section 3.9 of the February 2011 AFC. There would be no change in the amount of water used during construction; therefore, the estimated construction water supply flows summarized in the February 2011 AFC and April 2011 Data Adequacy Supplement are unchanged. Therefore, construction impacts of the project would not result in any additional impacts beyond those analyzed in Section 5.5.3.1 of the AFC (February 2011).

As a result of the EWT System, PPEC's overall process water need is reduced by approximately 17 percent on an annual basis. Revised Table 3.5-4 of this AFC Refinement (which also replaces Table 5.5-3 in the February 2011 AFC) compares the maximum daily, average daily and annual incoming OWD recycled water supply flows with the flows using the EWT System. New Table 3.5-4A of this AFC Refinement provides a similar summary based on potable water supply. With the EWT System, PPEC would use approximately 314 acre-feet per year (afy) of recycled water or approximately 311 afy of potable water for process water needs. Potable water needed for domestic use would remain the same (i.e., approximately 1 afy) as previously described in the February 2011 AFC.

Until sufficient quantities of recycled water become available, the project will use potable water supplied by OWD for process and domestic water needs. OWD confirmed that it has adequate potable water supply to meet the project's demands (see will-serve letter in Appendix I-1 of the February 2011 AFC). As requested by CEC, OWD prepared a Water Supply Assessment (WSA) for PPEC in conformance with Senate Bill 610 that documents and demonstrates that OWD has sufficient potable water to supply PPEC. The WSA was approved by OWD on October 5, 2011. The WSA concluded "that sufficient water supplies are planned for and are intended to be made available over a 20-year planning horizon under normal supply conditions and in single and multiple dry years to meet the projected demand of the PPEC Project and other planned

development projects within the District" (OWD, 2011). Therefore, the impact on potable water supply or other users of this source would be considered less than significant.

5.5.3.2 Water Quality Effects – Surface Water

Construction activities associated with the EWT System would be similar to those analyzed in Section 5.5.3.1 through 5.5.3.5 of the AFC (February 2011) and the AFC Refinement (June 2011). Construction practices and Best Management Practices (BMPs) would be the same as previously described in Section 5.5.3.2 of the AFC. Therefore, construction impacts of the project would not result in any additional impacts to water resources beyond those analyzed in Section 5.5.3 of the AFC (February 2011) or the AFC Refinement (June 2011).

The site grading and drainage plan for PPEC is shown on Revised Figure 3.4-3, Preliminary Grading and Drainage Plan of this AFC Refinement. As a result of the enlarged water treatment building associated with the EWT System, the project will increase the amount of impervious surface area slightly (i.e., by approximately 0.2 acre), such that the total amount of impervious surface area would still be approximately 29 percent of the 9.99-acre site. Therefore, there are no substantial changes to the preliminary drainage calculations or sizing of the onsite detention basin as provided in the February 2011 AFC.

The EWT System will have a wastewater truck loading area, as shown on Revised Figure 3.1-3A, Site Arrangement. This area will be located south of the stormwater detention basin. BMPs would be implemented to prevent the discharge of final process wastewater into the stormwater detention basin. These could include:

- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills.
- Grade wastewater loading area to drain to oil/water separator and not to stormwater detention basin.
- Properly maintain wastewater transfer system, replace damaged transfer pipes when necessary.
- Keep the wastewater transfer area clean at all times by cleaning up spills immediately.
- Make sure that the wastewater haul trucks are loaded only at authorized transfer area.
- Use licensed truck haulers.
- Develop and implement a spill prevention control and response plan.

Therefore, with implementation of the BMPs described above, as well as those described previously in the AFC, the operation impacts of the project would not result in any additional impacts to water resources beyond those analyzed in Section 5.5.3 of the AFC (February 2011) or the AFC Refinement (June 2011).

5.5.3.3 Wastewater Discharge Effects

Construction activities associated with the EWT System would be similar to those analyzed in the AFC. Construction wastewater discharges would be the same as previously described in Sections 5.5.2.10 and 5.5.3.2 of the AFC (February 2011) and the Data Adequacy Supplement (April 2011). Therefore, construction impacts of the project would not result in any additional impacts beyond those analyzed in Section 5.5.3 of the AFC (February 2011) or the Data Adequacy Supplement (April 2011).

During operations, PPEC will no longer discharge process wastewater to the sewer main adjacent to the site. As a result of the enhanced treatment and reuse, PPEC's final wastewater discharge volume will be significantly reduced, thereby enabling it to be economically trucked offsite for disposal, in lieu of discharging to the local sewer system as outlined in the AFC. As shown on Revised Table 3.5-4, the EWT System reduces PPEC's annual wastewater disposal volume from approximately 77 afy to approximately 14 afy, or approximately 82 percent.

The final process wastewater will now be hauled by truck to the City of San Diego's industrial wastewater disposal facility, i.e. Pump Station Number 1. During average PPEC operations, approximately 12,000 gallons per day will be hauled to the disposal facility (See Revised Table 3.5-4 of this AFC Refinement). Based on 21 gallons per minute (gpm) of final wastewater produced on a peak average day (see Revised Figure 3.5-4B, Water Balance Flow Values) and an average of 11 hours per day of plant operation, approximately 14,000 gallons of final wastewater will be produced annually. Under worst case conditions, assuming 24-hour operations and 93°F ambient temperatures, as much as 30,000 gallons per day could be hauled. The quality of the hauled wastewater would meet the requirements set forth by the City of San Diego for trucked industrial waste generators as shown on Revised Table 3.5-7 of this AFC Refinement. In the will-serve letter from the City of San Diego, the City has confirmed that it has sufficient hydraulic and treatment capacity to accommodate PPEC's industrial wastewater (See Appendix I-1 Supplement)

Approximately 20 million gallons per year of trucked industrial wastewater and approximately 24.5 million gallons per year of trucked sanitary wastewater are currently hauled to the wastewater disposal facility (City of San Diego, 2011), which corresponds to approximately 0.13 million gallons per day (mgd) on average. The amount of hauled wastewater received at Pump Station Number 1 is approximately 1 percent of the facility's 160 mgd pumping capacity. PPEC's quantity of wastewater discharge (maximum of 0.03 mgd), whether it uses recycled water or potable water, would be de minimus compared to the total capacity of the disposal facility.

As reported in the *2010 Annual Report and Summary Point Loma Wastewater Treatment Plant and Ocean Outfall* (City of San Diego, 2010), the Point Loma WTP's average annual influent and effluent flow was 156.7 mgd. The average influent Total Dissolved Solids (TDS) concentration was 1,678 milligrams per liter (mg/L) and the effluent concentration was 1,684 mg/L, corresponding to a TDS effluent load of approximately 360,000 metric tons per year (mt/yr). While TDS is monitored and reported, there is no discharge limit for TDS from the Point Loma WTP. The PPEC's contribution to TDS load (even with the assumption of a maximum flow of 0.03 mgd with a maximum TDS concentration of 30,000 mg/L, PPEC's worst-case contribution would be less than 1,000 mt/yr) is negligible compared to the TDS effluent load

from the Point Loma WTP. Similarly, PPEC's contribution to other constituents would be negligible.

The sanitary system will be the same as described in the February 2011 AFC. Sanitary wastes will not be affected by the EWT System, and will be discharged to the East Otay Mesa Sewer Maintenance District's existing sewer system, which will be conveyed via the existing system to the San Diego Metropolitan Water District (MWD) sewage system for treatment and disposal. As discussed in the February 2011 AFC, a short connection will be made to an existing 12-inch sewer main in Calzada de la Fuente along the north project site boundary or to an existing 15-inch sewer main in Alta Road along the west project site boundary. The East Otay Mesa Sewer Maintenance District currently owns 1.0 mgd capacity in the MWD system (County of San Diego, 2010).

As a result of the EWT System, only sanitary wastewater will be discharged to this sewer system. The peak daily discharge to the local sewer from PPEC will be reduced from approximately 0.15 mgd to approximately 0.003 mgd, or approximately 0.3 percent of the East Otay Mesa Sewer Maintenance District's 1.0 mgd allotment and substantially less than one percent of the 174 mgd wastewater treatment capacity at the South Bay Water Reclamation Plant (WRP).

The project will comply with all permit requirements. Therefore, impacts associated with wastewater discharges will be less than significant.

5.5.3.4 Flooding

Flooding impacts of the EWT System would be similar to those identified in Section 5.5.3.4 of the AFC (February 2011) and AFC Refinement (June 2011). As a result, impacts from operation of the project are unchanged from the discussion presented in Section 5.5.3 of the AFC (February 2011) and AFC Refinement (June 2011).

5.5.3.5 Effect on Groundwater

The modifications will not result in additional impacts to groundwater resources or groundwater quality as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant impacts to groundwater resources beyond those addressed in Section 5.5.3.5 of the AFC (February 2011).

5.5.3.6 Cumulative Impacts

The modifications will not result in additional impacts to water resources or water quality as a result of the proposed project refinement. As a result of the EWT System, the amount of OWD supplied water consumed by PPEC and the amount of wastewater discharged will be less than that described in Section 5.5.3.6 of the AFC (February 2011). The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to water resources beyond those addressed in Section 5.5.3.6 of the AFC (February 2011).

5.5.4 Mitigation Measures and Conditions of Certification

Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.5.4 of the AFC (February 2011).

5.5.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable water resources and water quality LORS described in Section 5.5.5 of the AFC (February 2011).

5.5.6 Agencies Involved and Agency Contacts

See the following Revised Table 5.5-6, Agency Contacts, for agency contacts.

REVISED TABLE 5.5-6
AGENCY CONTACTS

Issue	Agency/Address	Contact	Title	Telephone/Email
Water Supply	Otay Water District 2554 Sweetwater Springs Blvd Spring Valley, CA 91978-2004	David Charles	Public Services Manager	(619) 670-2243 dcharles@otaywater.gov
Water Quality Industrial General Permit	California Regional Water Quality Control Board, San Diego Region 9	Christina Arias	Senior Water Resource Control Engineer	(858) 627-3931 CArias@waterboards.ca.gov
Wastewater Discharge	City of San Diego, Metropolitan Wastewater 9192 Topaz Way San Diego, CA 92123-1119	Cody Wilkinson	Pretreatment Inspector, Industrial Wastewater Control Program	(858) 654-4117 WilkinsonC@sandiego.gov
Stormwater Management	County of San Diego, Dept of Public Works 5201 Ruffin Road, Suite D, MSO336 San Diego, CA 92123	Ed Sinsay	DPW Project Manager	(858) 694-2486 Ed.Sinsay@sdcounty.ca.gov
Sanitary Wastewater Discharge	County of San Diego, Dept of Public Works 5500 Overland Avenue Suite 315 San Diego, CA 92123	Daniel Brogadir	Land Use and Environmental Group (LUEG) Program Manager	(858) 694-2714 Daniel.Brogadir@sdcounty.ca.gov
Process Wastewater Discharge	City of San Diego, Dept of Public Works Industrial Wastewater Control Program 9192 Topaz Way San Diego, CA 92123	Barbara Sharatz	Pretreatment Program Manager	(858) 654-4106 BSharatz@sandiego.gov
Waters of the U.S.	United States Army Corps of Engineers (USACE) 911 Wilshire Blvd 1525 Los Angeles, CA 90017	TBD	TBD	(213) 452-3908

5.5.7 Permits Required and Permit Schedule

The water-related permits that are required for the project and the timing are identified in Revised Table 5.5-7, Permits Required. Now that the final wastewater will be trucked to Pump Station 1, the project will be required to obtain a trucked industrial waste generator discharge permit from the City of San Diego, which has been added to the table.

REVISED TABLE 5.5-7
PERMITS REQUIRED

Responsible Party	Permit/Approval	Schedule
San Diego RWQCB	Construction Activities Stormwater General Permit; California RWQCB Water Quality (Addresses stormwater during construction)	30 days prior to construction
San Diego RWQCB	Industrial Activities Stormwater General Permit; California RWQCB Water Quality (Addresses stormwater during plant operation)	30 days prior to start of plant operations
East Otay Mesa Sewer Maintenance District	Sewer Connection Permit	Prior to discharge
City of San Diego	Trucked Industrial Waste Generator Discharge Permit	45 days prior to discharge
USACE	404 Nationwide Permit	TBD

5.5.8 References

Additional references to those presented in Section 5.5.8 of the AFC (February 2011) that were used for this AFC Refinement are provided below.

City of San Diego Public Utilities Water and Wastewater, 2010. Annual Reports and Summary Point Loma Wastewater Treatment Plant and Ocean Outfall. Monitoring and Reporting Program No. R9-2009-0001, NPDES No. CA 0107409. June 30, 2010. http://www.sandiego.gov/mwwd/environment/plantmonitoring.shtml. Accessed September 2011.

City of San Diego Public Utilities Water and Wastewater. 2011. Combined Annual Pretreatment Report. http://www.sandiego.gov/mwwd/environment/iwcp/pdf/10pretreatmenetreport.pdf. March 2011.

City of San Diego Public Utilities Water and Wastewater Industrial Wastewater Control Program, 2011. Trucked Waste Requirements and Procedures Rev 05/10. http://www.sandiego.gov/mwwd/environment/iwcp/pdf/tw_req_and_proc.pdf. Accessed September 2011.

Otay Water District. 2011. Otay Water District, Water Supply Assessment Report, Pio Pico Energy Center. Prepared in consultation with Atkins North America, Inc. and San Diego County Water Authority. July 2011. Approved October 5, 2011.

5.6 BIOLOGICAL RESOURCES

This section presents a discussion of the potential impacts related to biological resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.6.1 Affected Environment

The EWT System is located within the same project site footprint and study area previously evaluated in Section 5.5.1 in the AFC (February 2011). Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.6.2 in the AFC (February 2011).

5.6.2 Environmental Consequences

Construction and operation of the EWT System would not involve activities or conditions in excess of those identified in Section 5.6.3 of the AFC (February 2011), with the exception of final wastewater being trucked offsite daily while the plant is operational. The wastewater disposal truck route is entirely within exiting paved roads and does not pose impacts to biological resources (see new Figure 5.11-10, EWT Wastewater Traffic Haul Route). As a result, impacts from the project are unchanged from the discussion presented in Section 5.6.3 of the AFC (February 2011).

5.6.3 Cumulative Impacts

The EWT System will not result in additional impacts to biological resources as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to biological resources beyond those addressed in Section 5.6.4 of the AFC (February 2011).

5.6.4 Conditions of Certification

Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.6.5 of the AFC (February 2011).

5.6.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable biological resources LORS described in Section 5.6.6 of the AFC (February 2011). The project would not require changes to the permits required and permit schedule described in Section 5.6.8 of the AFC (February 2011) and PPEC Data Adequacy Supplement (April 2011).

5.6.6 References

No references in addition to those presented in Section 5.6.9 of the AFC (February 2011) and the PPEC Data Adequacy Supplement (April 2011) were used for this AFC Refinement.

5.7 CULTURAL RESOURCES

This section presents a discussion of the potential impacts related to cultural resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.7.1 Affected Environment

Since the EWT System is located within the project site footprint presented in the February 2011 AFC, the affected environment is unchanged from that presented in Section 5.7.1 of the AFC (February 2011) and in subsequent PPEC Data Adequacy and Data Request Responses.

5.7.2 Environmental Consequences

Construction of the EWT System would not result in any potential direct impacts to cultural resources in addition to the discussion presented in Section 5.7.2 of the AFC (February 2011) and subsequent PPEC Data Responses.

Section 5.7.2 of the AFC (February 2011) and subsequent PPEC Data Responses concluded that operation of the proposed project and its related facilities would have no impacts on cultural resources. Similarly, operation of the EWT System would have no impacts on cultural resources.

5.7.3 Cumulative Impacts

The EWT System is not expected to result in additional impacts to historic architecture or archaeological resources. Therefore, impacts from the construction and operation of the project, including the EWT System, are not expected to result in any significant cumulative impacts to cultural resources beyond those address in Section 5.7.3 of the AFC (February 2011) and subsequent PPEC Data Responses.

5.7.4 Conditions of Certifications and Mitigation Measures

The EWT System addressed in this AFC Refinement poses the same effect to cultural resources addressed in Section 5.7.2 of the AFC (February 2011), and the subsequent PPEC Data Responses. Therefore, the Conditions of Certification for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.7.4 of the AFC (February 2011).

5.7.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable cultural resources LORS described in Section 5.7.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.7.7 of the AFC (February 2011).

5.7.6 References

No references in addition to those presented in Section 5.7.8 of the AFC (February 2011), PPEC Data Adequacy Supplement (April 2011), and the subsequent PPEC Data Responses were used for this AFC Refinement.

5.8 PALEONTOLOGICAL RESOURCES

This section presents a discussion of the potential impacts related to paleontological resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.8.1 Affected Environment

Since the EWT System is located within the same project site footprint presented in the February 2011 AFC, the affected environment is unchanged from that presented in Section 5.8.1 of the AFC (February 2011).

5.8.2 Environmental Consequences

Construction of the EWT System would not result in any potential direct impacts to paleontological resources in addition to the discussion presented in Section 5.8.2 of the AFC (February 2011).

Section 5.8.2 of the AFC (February 2011) concluded that operation of the proposed project and its related facilities would have no impacts on paleontological resources. Similarly, operation of the EWT System would have no impacts on paleontological resources.

5.8.3 Cumulative Impacts

The EWT System will not result in additional impacts to paleontological resources. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to paleontological resources beyond those addressed in Section 5.8.3 of the AFC (February 2011).

5.8.4 Conditions of Certification

The EWT System addressed in this AFC Refinement poses the same effect to paleontological resources addressed in Section 5.8.2 of the AFC (February 2011). Therefore, the Conditions of Certification for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.8.4 of the AFC (February 2011).

5.8.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable paleontological resource LORS described in Sections 5.8.5 of the AFC (February 2011).

5.8.6 References

No references in addition to those presented in Section 5.8.8 of the AFC (February 2011) and the PPEC Data Adequacy Supplement (April 2011) were used for this AFC Refinement.

5.9 LAND USE

This section presents a discussion of the potential impacts related to land use from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.9.1 Affected Environment

Since the EWT System is located within the same project site footprint presented in the February 2011 AFC, the affected environment is unchanged from that presented in Section 5.9.1 of the AFC (February 2011).

5.9.2 Environmental Consequences

Construction and operation of the EWT System would not result in changes to the project with respect to potential effects on existing land uses and land use resources of the project area, as analyzed in Sections 5.9.2 in the AFC (February 2011). Therefore, the environmental consequences resulting from the EWT System is unchanged from that presented in Section 5.9.2 in the AFC (February 2011).

5.9.3 Cumulative Impacts

The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to land use beyond those addressed in Section 5.9.3 of the AFC (February 2011).

5.9.4 Conditions of Certification

Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.9.4 of the AFC (February 2011).

5.9.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the EWT System, would not require changes to the permits, fees required, and associated schedules described in Section 5.9.5 of the AFC (February 2011). In addition, the proposed expansion to the water treatment building and new water storage tank will be consistent with applicable San Diego County General Plan/Otay Subregional Plan goals and policies, San Diego County Zoning Ordinance and East Otay Mesa Business Park Specific Plan development standards and regulations.

5.9.6 References

No references in addition to those presented in Section 5.9.6 of the AFC (February 2011) and the PPEC Data Adequacy Supplement (April 2011) were used for this AFC Refinement.

5.10 SOCIOECONOMICS

This section presents a discussion of the potential impacts related to socioeconomics from the Enhanced Water Treatment (EWT) System Enhancement, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.10.1 Affected Environment

The EWT System is located within the study area previously evaluated in Section 5.10.1.1 in the AFC (February 2011), and is subject to the same population, housing, economic base, employment, public services and utilities, and fiscal resources identified in Sections 5.10.1.2 through 5.10.1.4 of the AFC (February 2011). Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.10.1 in the AFC (February 2011).

5.10.2 Environmental Consequences

Construction and operation of the EWT System would not result in changes to the project including labor force needs, demands on public services, and environmental justice considerations. Construction and operation of the EWT System would result in changes to fiscal impacts, which are analyzed below.

School Impact and Fire Mitigation Fees

As a result of the increased dimensions of the water treatment building (i.e., from 6,300 square feet [sf] to 15,500 sf, which is an increase of 9,200 sf), the project would be required to pay additional school impact and fire mitigation fees, which are calculated based on square footage of applicable covered and enclosed spaces. The project's estimated fees (based on the preliminary project design) were provided in the Response to CEC Data Request Set 1 (July 2011), Data Requests SOCIO-41 and SOCIO-42. As a result of the EWT System, the total applicable square footage of covered and enclosed space subject to fees increases from 13,850 sf to 23,050 sf. Accordingly, the total estimated school fees for the project, as proposed with the EWT System, are $4,379.50 for the San Ysidro Elementary School District (calculated at $0.19/sf) and $5,993 for the Sweetwater Union High School District ($0.26/sf). Similarly, the estimated Fire Mitigation Fee for the San Diego Rural Fire Protection District would be $10,603, which is based on the assessed development mitigation fee of $0.46/sf. The fees identified above are estimates based on the preliminary project design, and the actual school impact and fire mitigation fees would be calculated from the project final design dimensions. The project EWT System would result in increased school impact fees and fire mitigation fees, but would not result in new impacts to socioeconomics. Therefore, the environmental consequences resulting from the EWT System is unchanged from that presented in Section 5.10.2 in the AFC (February 2011).

Sales Tax

The EWT System is subject to a San Diego County sales tax rate of 7.75 percent, based on the California State Board of Equalization (2011). Construction of the EWT System is estimated to result in local (i.e., San Diego County) expenditures of approximately $163,300 in materials and supplies. As a result, the EWT System would contribute approximately $12,700 in sales tax revenues. The increased revenues due to sales tax resulting from the EWT System are considered beneficial fiscal impacts.

Indirect and Induced Economic Effects

Construction of the EWT System is not expected to require construction workers in addition to those identified in the PPEC AFC (February 2011). The EWT System would require an estimated $163,300 in expenditures for locally-purchased materials and supplies, which would result in secondary (indirect and induced) impacts. IMPLAN Profession Version 2.0.1025 was used to create an input/output model assessing the secondary economic impacts (indirect and induced impacts) resulting from the construction of the EWT System. The modeling impact was based on an estimated total capital cost of $7 million for the EWT System facilities and estimated expenditures of $163,300 for locally-purchased (San Diego County) materials and supplies.

The resulting indirect and induced effects of the EWT System construction occurring within San Diego County would be negligible for employment impacts (i.e., no change to indirect and induced employment effects as analyzed in the February 2011 AFC) and approximately $98,675 and $8,324,697 in indirect and induced income impacts, respectively (based on the annual local construction expenditure for materials and supplies). The EWT System output for dollars generated for other industries supplying the power generation was estimated at $230,871 and $678,177 for indirect and induced impacts to output, respectively.

Operation of the EWT System is expected to require no change to the operation workers analyzed in the PPEC AFC (February 2011), but would require an additional estimated $86,000 of locally-purchased expenditures for supplies and services. The resulting indirect and induced effects of the EWT System construction occurring within San Diego County would be negligible for employment impacts (i.e., no change to indirect and induced employment effects as analyzed in the February 2011 AFC) and approximately $4,436 and $10,386 in indirect and induced income impacts, respectively (based on the annual local construction expenditure for materials and supplies). The EWT System output for dollars generated for other industries supplying the power generation industry was estimated at $11,037 and $29,222 for indirect and induced impacts to output, respectively.

The indirect and induced economic effects of the project during construction and operation are considered beneficial impacts on the project region.

5.10.3 Cumulative Impacts

The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to socioeconomics beyond those addressed in Section 5.10.4 of the AFC (February 2011).

5.10.4 Conditions of Certification

Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.10.5 of the AFC (February 2011).

5.10.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the EWT System, would not require changes to the permits, types of fees required, and associated schedules described in Section 5.10.6.5 of the AFC (February 2011).

5.10.6 References

No references in addition to those presented in Section 5.10.7 of the AFC (February 2011) were used for this AFC Refinement.

5.11 TRAFFIC AND TRANSPORTATION

This section presents a discussion of the potential impacts related to traffic and transportation from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.11.1 Affected Environment

The affected environment resulting from the EWT System is unchanged from the traffic study area presented in Section 5.11.1 of the February 2011 AFC, with the exception of an approximately 21-mile new EWT wastewater truck route originating from the project site via State Route 125 (SR-125), State Route 54 (SR-54) and Interstate 5 (I-5) towards the wastewater disposal facility at the City of San Diego Pump Station Number 1 located at 3350 East Harbor Drive within the City of San Diego. New Figure 5.11-10 illustrates the proposed EWT wastewater truck haul route. The majority of the affected study intersections were previously evaluated in the February 2011 AFC. All but one intersection, La Media Road at State Route 905 (SR-905), are located along the new EWT wastewater truck route. Similarly, five of the six study roadway segments (with the exception of SR-905 between La Media Road and Piper Ranch Road) will also be along the new EWT wastewater truck route. Additionally, two new study roadway segments, SR-54 and I-5, not previously analyzed in the February 2011 AFC, comprise the remaining westerly and northerly segment of the new EWT wastewater truck route and are evaluated as part of this AFC Refinement.

Key roadway characteristics of the two new study roadway segments in addition to the roadways and intersections previously evaluated in the February 201 AFC are described below:

State Route 54 (SR-54) - SR-54, otherwise known as the South Bay Freeway, is a 6-lane expressway originating from I-5 near the coastline then continuing east inland for several miles towards SR-125. Current Average Annual Daily Traffic (AADT) is 126,000 vehicles per day between SR-125 and I-5. The alignment is relative straight with flat to mildly sloping grades.

Interstate 5 (I-5) - I-5 is a major north-south route the length of California extending from San Diego County towards the northerly states of Oregon and Washington. Along the project study EWT wastewater truck route, I-5 provides for five mainline lanes in each direction with shoulders and a center divider. I-5 generally follows a northerly trending alignment with relatively flat horizontal profile. There is adequate median width separating the opposing travel way and wide shoulders for roadway stops and emergencies. There are no identified geometric features that would affect public safety. Current AADT is 178,000 vehicles just north of SR-54.

California Department of Transportation's (Caltrans') maximum allowable weight restrictions described in Section 5.11.1.1 of the February 2011 AFC shall apply to the aforementioned state routes.

5.11.2 Environmental Consequences

The following analysis evaluates potential project impacts to the study roadway segments and intersection from the addition of the EWT System to the PPEC project.

The EWT System wastewater traffic route follows the construction and operational route areas previously analyzed in Section 5.11.2 of the February 2011 AFC. The addition of the EWT System extends the analysis area to segments of SR-54 and I-5 which are evaluated in this amendment. The EWT System wastewater truck route assumes the primary route via SR-125, SR-54 and I-5 as the most efficient and convenient route with the least amount of surface street and traffic signal interruption. Consistent with the traffic impact analysis methodology described in Section 5.11.2 of the February 2011 AFC, the County of San Diego roadway segment Level of Service (LOS) thresholds are summarized in Table 5.11-6 below.

NEW TABLE 5.11-6[1]
COUNTY OF SAN DIEGO SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS

	Levels of Service				
Functional Classification	**A**	**B**	**C**	**D**	**E**
Expressway (6-lane)	36,000	54,000	70,000	86,000	108,000
Prime Arterial (6-lane)	22,200	37,000	44,600	50,000	57,000
Major Street (4-lane)	14,800	24,700	29,600	33,400	37,000
Light Collector (2-lane)	1,900	4,100	7,100	10,900	16,200

Source: County of San Diego Department of Public Works Public Road Standards (February 9, 2010).
[1] Table 5.11-6 is shown as presented in the February 2011 AFC, and is included in this section for the purposes of providing context for LOS standards and analysis.

5.11.2.1 Project Trip Generation

The project trip generation during construction of the EWT System would remain essentially the same as described in the February 2011 AFC. It is assumed that the peak construction workforce and material and equipment delivery estimates described in the February 2011 AFC adequately covers the needs for the expansion of the water treatment building and the addition of the 20,000 gallon Final Wastewater Storage Tank (FWST) and would not coincide with the project worst-case peak construction period (Section 3.9 of the February 2011 AFC). During operation, there are no anticipated new operational worker trips associated with the EWT System; however, impounded final wastewater discharge from the FWST will need to be pumped to a tanker truck and transported to the City of San Diego's industrial wastewater disposal facility referred to as Pump Station Number 1 located at 3350 East Harbor Drive in the City of San Diego. Revised Table 5.11-8 below presents the project operational trip generation associated with the EWT wastewater truck trips offsite. A supplemental operational impact analysis associated with the transportation of the wastewater offsite is included in this AFC Refinement (presented in Section 5.11.2.2 below) and updates the analysis presented in Section 5.11.2 of the AFC (February 2011).

REVISED TABLE 5.11-8
PROJECT OPERATIONS TRIP GENERATION
(WITH EWT OFFSITE TRUCK TRIPS)

	Daily Trips (PCE)	A.M. Peak-Hour Trips		P.M. Peak-Hour Trips	
		In	Out	In	Out
Operational Workforce[1]	24	12	0	0	12
Enhanced Water Treatment (EWT) Offsite Truck Trips[2]	42	21	0	0	21
Total Trips	66	33	0	0	33

[1] All operational workers (12 employees) were conservatively assumed to commute during the 7:00-9:00 a.m. and 4:00-6:00 p.m. adjacent street peak-hour traffic.
[2] EWT Offsite Truck Trips were conservatively estimated at the maximum 7 truck trips per day, as described in Section 3.4 of this AFC Refinement. At 3 passenger car equivalent (PCE) per truck, this equates to 21 one-way PCE trips or 42 daily trips. The operational analysis conservatively assumed the trucks to commute during the 7:00-9:00 a.m. (Inbound) and 4:00-6:00 p.m. (Outbound) adjacent street peak-hour traffic.

5.11.2.2 Traffic Impact Analysis

This scenario includes Year 2014 No Project traffic volumes plus PPEC project operations trip generation. Revised Figure 5.11-9 shows Year 2014 Project Operations peak-hour traffic volumes at the project study intersections.

Year 2014 Project Operations Roadway Segment Analysis. Revised Table 5.11-15 displays the LOS analysis results for the project study area roadway segments under Year 2014 with Project Operations conditions.

REVISED TABLE 5.11-15
ROADWAY SEGMENT LOS –
YEAR 2014 PEAK PROJECT OPERATIONS CONDITIONS

Roadway	Segment	Cross-Section Classification	Daily Added Cars	Daily Added Trucks	Percent Added Cars	Percent Added Trucks	Traffic Volume	Level of Service (LOS)
I 5	North of SR 54	10-Lane Freeway	0	14	0.0	0.1	206,494	E[1]
SR 54	SR 125 and I 5	Expressway	0	14	0.0	0.1	146,174	F
SR 125	North of SR 905	Expressway	4	14	0.1	0.1	34,847	A
SR 905	La Media Road and Piper Ranch Road	4-Lane Prime	20	0	0.1	0.0	41,375	C
Otay Mesa Road	SR 905 and Sanyo Avenue	4-Lane Major	24	14	0.1	0.1	16,172	B
Otay Mesa Road	Sanyo Avenue and Enrico Fermi Drive	2-Lane Collector	24	14	0.2	0.1	10,532	D
Otay Mesa Road	Enrico Fermi Drive and Alta Road	2-Lane Collector	24	14	0.3	0.2	7,722	D
Alta Road	Otay Mesa Road and Paseo de la Fuente	2-Lane Collector	24	14	0.4	0.2	6,637	C

[1] 1 Level of Service for 10-lane Freeway was evaluated using: Quality Level of Service handbook, 2009, published by the State of Florida Department of Transportation.

As shown in Revised Table 5.11-15, all of the project study roadway segments are forecast to operate at acceptable LOS D or better under Year 2014 Project Operations conditions with the exception of the study segments I-5 North of SR-54 (LOS E) and SR-54 between SR-125 and I-5 (LOS F). It must be noted that the aforementioned study freeway segments (I-5 and SR-54) are already operating at LOS E and F, therefore the project added trips consisting of a maximum of 7 one-way or 14 daily truck trips contributions are considered very minimal (less than 0.1 percent of pre-operational baseline traffic) and is therefore considered insignificant and will not create any new traffic impacts.

Year 2014 Peak Project Operation Intersection Analysis. Revised Table 5.11-16 displays the intersection LOS and average vehicle delay results under Year 2014 with Peak Project Operation conditions. The intersection LOS calculation worksheets are provided in this refinement as Appendix N Supplement, Intersection Analysis Worksheets.

REVISED TABLE 5.11-16
PEAK-HOUR INTERSECTION LOS –
YEAR 2014 PEAK PROJECT OPERATIONS CONDITIONS

	A.M. Peak Hour				P.M. Peak Hour			
	Project Added Trips	Percent Added Trips	LOS	Average Delay (Sec)	Project Added Trips	Percent Added Trips	LOS	Average Delay (Sec)
La Media Road SR 905	10	1	C	22.0	10	1	C	31.5
SR 125 SB Off Ramp SR 905	33	2	B	19.0	10	1	A	7.1
SR 125 NB On Ramp SR 905	33	2	A	2.1	33	2	B	10.2
SR 905 Otay Mesa Road	33	2	C	21.6	33	2	C	30.1
Sanyo Avenue Otay Mesa Road	33	3	A	3.3	33	3	B	17.0
Enrico Fermi Drive Otay Mesa Road	33	4	B	10.9	33	4	B	13.0
Alta Road Otay Mesa Road	33	5	A	0.0	33	6	A	0.0
Alta Road Paseo de la Fuente	33	5	A	1.8	33	6	A	6.0
Alta Road North Access Road	0	0	C	18.0	0	0	C	16.6

NB northbound
SB southbound
LOS level of service
Sec seconds per vehicle

As shown in Revised Table 5.11-16, all project study intersections are forecast to operate at acceptable LOS C or better under Year 2014 Project Operations conditions. The addition of the EWT System operational trips will not contribute to the deterioration of operation intersection LOS to unacceptable levels and will not cause a significant operational project impact.

Year 2014 Conditions Traffic Impact Summary. As discussed previously in February 2011 AFC, the Year 2013 Peak Construction activities represented the worst-case traffic analysis scenario for the proposed project. The project trip generation during construction of the EWT System would remain essentially the same as described in the February 2011 AFC. Upon completion of project construction and commissioning of the facility, PPEC will generate operations-related trips that are substantially less than peak construction activities. Post-construction background traffic within the project study area is anticipated to be slightly higher than preconstruction levels, with a minor incremental increase in traffic attributed to ambient growth and added trips from PPEC operation.

Based on the County of San Diego and City of San Diego traffic impact threshold criteria, PPEC operations-related trips from the 12 full-time workers on shift schedule, plus the addition of the 42 passenger car equivalent (PCE) daily EWT System wastewater truck trips will not contribute to the degradation of intersection LOS at any of the study locations. Therefore, none of the project study roadway segments and intersections would be significantly impacted with the start of PPEC operation by Year 2014. The projected incremental net increase of trips attributed to project operations would not create significant traffic impacts to the surrounding roadway circulation system.

5.11.3 Cumulative Impacts

As described in Section 5.18.2.7 of the February 2011 AFC, the California Department of Transportation (Caltrans) proposes to construct State Route (SR)-11, a four-lane freeway/tollway that would connect SR-905 and SR-125 to the proposed East Otay Mesa Port of Entry. Several local access interchanges are envisioned for SR-11, including one proposed for Enrico Fermi Road, approximately midblock between Airway Road and Otay Mesa Road. Based on the Caltrans Preliminary Transportation Management Plan for SR-11 and the Otay Mesa East Port of Entry (November 2010), the SR-11 proposal is currently in the Caltrans Project Approval and Environmental Document phase, and construction of the SR-11 is estimated to begin in late 2013. The construction and operation of the onsite EWT System will not cause conflicts to the aforementioned off-site cumulative project activities. Thus, the project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to traffic and transportation facilities beyond those addressed in Section 5.11.3 of the AFC (February 2011) and in the AFC Refinement (June 2011).

5.11.4 Conditions of Certification

The EWT System poses the same effect to traffic and transportation as previously addressed in Section 5.11.2 of the AFC (February 2011) and the June 2011 AFC Refinement . Therefore, the original Conditions of Certification for the project (TRANS-1), including the refinement discussed herein, are unchanged from the discussion presented in Section 5.11.4 of the AFC (February 2011).

5.11.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable Traffic and Transportation LORS described in in Sections 5.11.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.11.7 of the AFC (February 2011), however, the City of San Diego's Public Utilities Department, through its Industrial Wastewater Control Program, requires permits for the transportation and discharge of PPEC's trucked wastewater at its receiving facilities, e.i. Pump Station Number1.

5.11.6 References

The following references were used for this AFC Refinement in addition to those presented in Section 5.11.8 of the AFC (February 2011):

California Department of Transportation. 2009a. Highway Traffic Counts, Caltrans Traffic Count Database.

California Department of Transportation. 2009b. Truck Volumes, Caltrans Traffic Count Database.

California Department of Transportation. 2010. Preliminary Transportation Management Plan (TMP) for State Route 11 and the Otay Mesa East Port of Entry. November, 2010.

State Route 11 and the Otay Mesa East Port of Entry, Tier II Environmental Impact Report/ Environmental Impact Statement, November, 2010.

5.12 NOISE

This section presents a discussion of the potential impacts related to noise from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses potential noise impacts including the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.12.1 Affected Environment

The EWT System is located within the same study area previously evaluated in Section 5.12.2 in the AFC (February 2011), and is subject to the same geographic, topographic, and noise conditions. Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.12.2 in the AFC (February 2011).

5.12.2 Environmental Consequences

There would be no significant changes to construction noise due to the construction of the EWT System; therefore, impacts related to noise during construction would be the same as analyzed in the February 2011 AFC.

There will be several pumps added to the EWT System that were not included in the previous water treatment system that was presented in Section 5.12.4 of the AFC (February 2011). The additional pumps that are being included as part of this refinement will be enclosed within the water treatment building along with the previously modeled pumps presented in Section 5.12.4 of the AFC (February 2011). Section 5.12.4 of the AFC (February 2011) listed the modeled L_{eq}s (equivalent sound levels) at LT-1 and LT-2 due to all plant operations at 36 dBA (decibels A scale) and 34 dBA, respectively. The EWT System would not raise the operational L_{eq}s at LT-1 and LT-2 because the noise levels generated by the additional pumps would be sufficiently mitigated due to being located inside of the water treatment building. There would be no significant change to operational noise from PPEC due to the EWT System.

Operation of the EWT System would result in an increase of traffic along the truck route from the project site to the disposal facility, Pump Station Number 1, located at 3350 East Harbor Drive in the City of San Diego. As described in Section 3.4 of this refinement, there would be an average of 3 and a maximum of 7 additional large trucks that will be going to and from PPEC each day as a result of the EWT System. The primary roadway segments that will be used are along Alta Road between Padeo de la Fuente and Otay Mesa Road, and along Otay Mesa Road between Alta Road and SR-125. For the purpose of the operational traffic noise analysis, using the roadway segment with the lowest projected average daily traffic (ADT) volume will generate a conservative, worst case scenario for calculating the change in noise levels due to the increase in truck traffic. The lowest projected year 2014 ADT volume is for the roadway segment on Alta Road between Paseo de la Fuente and Otay Mesa Road. The ADT volume is anticipated to be 5,667 trips without project operations. The addition of a maximum of 14 heavy truck trips (round-trip of maximum 7 trucks) would result in a projected ADT volume of 5,681 trips with project operations, and would result in an increase in noise of less than 0.1 dB CNEL

(Community Noise Equivalent Level). There would be no significant changes to operational traffic noise from the EWT System. Therefore, the environmental consequences resulting from the EWT System is unchanged from that presented in Section 5.12.4 in the AFC (February 2011).

5.12.3 Cumulative Impacts

The project, including the changes resulting from the EWT System, would not result in any significant cumulative impacts to noise beyond those addressed in Section 5.12.5 of the AFC (February 2011).

5.12.4 Conditions of Certification

Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.12.6 of the AFC (February 2011).

5.12.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable noise LORS described in in Section 5.12.7 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.12.9 of the AFC (February 2011).

5.12.6 References

No references in addition to those presented in Section 5.12.10 of the AFC (February 2011) were used for this AFC Refinement.

5.13 VISUAL RESOURCES

This section presents a discussion of the potential impacts related to visual resources from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS that pertain to the addition of the EWT System.

5.13.1 Affected Environment

The EWT System is located within the same study area previously evaluated in Section 5.13.1 in the AFC (February 2011), and is subject to the same regional landscape setting, viewshed, and visual environment as originally discussed in Section 5.13.1 of the AFC. Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.13.1 in the AFC (February 2011).

5.13.2 Environmental Consequences

The EWT System would expand the previously proposed water treatment building and add a Final Wastewater Storage Tank (FWST), the design details and aesthetic impacts of which are described below. These changes are also shown on Revised Figure 3.1-3A, Site Arrangement.

Construction and operation of the EWT System would result in the addition of the FWST at PPEC, and will expand the size of the previously presented water treatment building by approximately 9,200 square feet. The footprint of the water treatment building will be enlarged by 50 feet on the east side and 40 feet on the south side of the building. The building will now equal approximately 15,500 square feet, while the height will remain the same as previously presented in the February 2011 AFC. The FWST will be approximately 11 feet in diameter by 30 feet high, with the capacity to store 20,000 gallons of wastewater. Similar to the other storage tanks described in the February 2011 AFC, the FWST will be vertical and cylindrical, and supported on a suitable foundation. The expansion of the water treatment building and the addition of the FWST will require minor adjustments to the layout of other supporting equipment at the plant (see Revised Figure 3.1-3A, Site Arrangement). The demineralized water tank and wastewater tank will shift a few feet to the south in order to allow for the expansion of the water treatment building. These changes will be visually imperceptible when the project is viewed as a whole. This is because the largest features associated with the project (e.g., exhaust stacks and combustion turbine generators) will not be relocated as a result of this refinement. This, combined with the fact that the majority of project features are colored grey, indicates that the changes proposed in this refinement will be indiscernible from each of the KOPs evaluated in the February 2011 AFC.

In sum, while the EWT System would increase the size of the water treatment building and construct the FWST, these changes would not add any visual point of interest to PPEC. Furthermore, neither structure would visually dominate the site, nor would they create a visual point of interest due to their size and color in relation to the other plant facilities. Therefore, while the expansion, addition, and relocation of these structures will slightly alter the layout of

the project as a whole, these changes will not modify the existing analysis or conclusions presented in Section 5.13.2.3 of the AFC (February 2011).

5.13.3 Cumulative Impacts

The project, including the changes resulting from the EWT System, would not result in any significant cumulative impacts to visual resources beyond those addressed in Section 5.13.3 of the AFC (February 2011).

5.13.4 Conditions of Certification

The conditions of certification for temporary impacts related to construction presented in Section 5.13.4 of the February 2011 AFC are applicable to the EWT System. No additional mitigation measures are recommended based on the project modifications.

5.13.5 Laws, Ordinances, Regulations, Standards, and Permits

The LORS presented in Section 5.13.5 of the project AFC are applicable to the refined project and no additional LORS are recommended. Similarly, the agency contact information presented in Section 5.13.6 of the project AFC is unchanged and the proposed EWT System does not affect the required permits or project schedule presented in Section 5.13.7 of the February 2011 AFC.

5.13.6 References

No references in addition to those presented in Section 5.13.8 of the AFC (February 2011) were used for this AFC Refinement.

5.14 WASTE MANAGEMENT

This section presents a discussion of the potential impacts related to waste management from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures/conditions of certification, and applicable LORS resulting from the EWT System.

5.14.1 Affected Environment

The affected environment (types of wastes generated and the management methods for such wastes) resulting from the EWT System present some changes from that presented in Section 5.14.1 in the AFC (February 2011) as described below.

As originally defined in the February 2011 AFC, the two process wastewater streams are the cooling system blowdown and the oil/water separator effluent. Both of these streams will be routed to the Wastewater Collection Tank (same volume and dimensions as described in the February 2011 AFC). This collection tank will now be defined as the Process Wastewater Collection Tank, to differentiate from final wastewater produced by the EWT System. Rather than discharge the process wastewater from the Process Wastewater Collection Tank to the sewer as originally defined, the process wastewater will be conveyed to an added onsite high-pH reverse osmosis (RO) system. This EWT System will recycle 80 to 90 percent of the treated process wastewater for reuse as makeup water. Due to high Total Dissolved Solids (TDS) (See Revised Table 3.5-7 in Section 3.0 for EWT final wastewater characterization and industrial wastewater limits), the final wastewater will not be discharged to the local sewer, but rather, stored in a new 20,000 gallon Final Wastewater Storage Tank (FWST). FWST wastewater will then be loaded into a tanker truck(s) and transported to the City of San Diego's industrial wastewater disposal facility referred to as Pump Station Number1 located at 3350 East Harbor Drive in the City of San Diego, California. The project will be required to obtain a trucked industrial waste generator discharge permit from the City of San Diego (See Section 5.5, Water Resources for additional information).

Sanitary wastewater will be disposed of separately via a short, small diameter connection to an existing sewer main in Calzada de la Fuente along the north project site boundary, as described in the February 2011 AFC.

The EWT System includes additional processing equipment to the wastewater stream described in the AFC. The water treatment processes, as described in the AFC, are unchanged upstream of the EWT System equipment and structures. The new EWT process consists of (1) a high-pH RO wastewater treatment system, (2) water recycle piping, (3) FWST, and (4) a wastewater tanker truck loading area.

Additional chemicals to be used in the proposed EWT process are summarized in Section 5.15, Hazardous Materials Handling.

5.14.2 Environmental Consequences

As discussed in Section 5.14.1, operation of the EWT System generates wastewater that will not be discharged directly to the local sewer, but rather stored in a new 20,000 gallon FWST, and will be loaded into tanker truck(s) and transported to the City of San Diego's industrial wastewater disposal facility. The City of San Diego has the capacity to treat this industrial wastewater. Construction and operation of the EWT System, would not involve other changes to waste management beyond those analyzed in Section 5.14.1 and 5.14.2 of the AFC (February 2011). Therefore, impacts of the project, including the refinement discussed herein, would not result in additional impacts than the discussion presented in Section 5.14.2 of the AFC (February 2011).

5.14.3 Cumulative Impacts

The modifications would not result in additional impacts from waste management as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, would not result in any significant cumulative impacts from waste management beyond those addressed in Section 5.14.3 of the AFC (February 2011).

5.14.4 Conditions of Certification

Implementation of Mitigation Measures/Conditions of Certification WM-1 through WM-7, as described in Section 5.14.4 of the AFC (February 2011), provide waste management procedures for handling non-hazardous and hazardous wastes. Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.14.4 of the AFC (February 2011).

5.14.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable waste management LORS described in in Sections 5.14.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.14.7 of the AFC (February 2011). The project will be required to obtain a trucked industrial waste generator discharge permit from the City of San Diego (See Section 5.5, Water Resources for additional information).

5.14.6 References

No references in addition to those presented in Section 5.14.8 of the AFC (February 2011) were used for this AFC Refinement.

5.15 HAZARDOUS MATERIALS HANDLING

This section presents a discussion of the potential impacts related to hazardous materials handling from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures/conditions of certification, and applicable LORS resulting from the EWT System.

5.15.1 Affected Environment

The affected environment (procedures for handling hazardous materials during construction and operation) resulting from the EWT System present the addition of several water treatment chemicals from that presented in Section 5.14.1 in the AFC (February 2011).

The EWT System includes additional processing equipment to the wastewater stream described in the AFC. The water treatment processes, as described in the AFC, are unchanged upstream of the EWT System equipment and structures. The new EWT process consists of (1) a high-pH RO wastewater treatment system, (2) water recycle piping, (3) Final Wastewater Storage Tank (FWST), and (4) a wastewater tanker truck loading area.

Wastewater to be previously disposed of into the local sewer will now be treated to produce both a recycled water stream and a final wastewater effluent. The recycled water stream will be piped back to the Service Water Tank (same volume and dimensions as described in the February 2011 AFC) for process water use. This will reduce the demand for Otay Water District (OWD) water supply, and slightly improve the overall quality of the service water. The EWT System reverse osmosis (RO) reject, a highly saline wastewater, will be stored in the dedicated FWST. Subsequently, the final wastewater in the FWST will be transferred to tanker trucks and then transported to the City of San Diego's industrial wastewater disposal facility. The project will be required to obtain a trucked industrial waste generator discharge permit from the City of San Diego (See Section 5.5, Water Resources, for additional information).

Additional chemicals used in the proposed EWT process include the following, based on an average day with 4,000 hours per year operation:

NEW TABLE 5.15-1
ADDITIONAL HAZARDOUS MATERIALS USAGE DURING OPERATION OF EWT SYSTEM

Material	Hazard Characteristics[1]	Purpose	Storage Location	Daily Usage[2]	Maximum Quantity Stored Onsite	Storage Type
Sodium Bisulfite	Irritant, mildly toxic	Wastewater Treatment	Wastewater Treatment Building	13 lbs dry	182 lbs dry	Original containers
Soda Ash	Irritant, toxic	Wastewater Treatment	Wastewater Treatment Building	372 lbs dry	5,208 lbs dry	Original containers
Caustic Soda	Corrosive, reactive	Wastewater Treatment	Wastewater Treatment Building	463 lbs dry	6,482 lbs dry	Original containers
Hydrochloric Acid	Corrosive, toxic	Wastewater Treatment	Wastewater Treatment Building	72 lbs dry	1,008 lbs dry	Original containers
Anti-scalant	Irritant, mildly toxic	Wastewater Treatment	Wastewater Treatment Building	2 lbs dry	28 lbs dry	Original containers
Citric Acid	Irritant, toxic	Wastewater Treatment	Wastewater Treatment Building	5 lbs dry	70 lbs dry	Original containers
NA-EDTA	Irritant, toxic	Wastewater Treatment	Wastewater Treatment Building	1.5 lbs dry	21 lbs dry	Original containers
RO and Membrane Cleaners	Irritant, toxic	Wastewater Treatment	Wastewater Treatment Building	4.5 lbs dry	63 lbs dry	Original containers

5.15.2 Environmental Consequences

Construction and operation of the EWT System, would involve the addition of the chemicals as described above. These hazardous materials will be used and stored according to applicable LORS as those hazardous materials analyzed in Section 5.15.1 and 5.15.2 of the AFC (February 2011). Therefore, impacts of the project, including the refinement discussed herein would not result in additional impacts than the discussion presented in Section 5.15.2 of the AFC (February 2011).

5.15.3 Cumulative Impacts

The modifications would not result in additional impacts from hazardous materials handing as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts from hazardous materials handling beyond those addressed in Section 5.15.3 of the AFC (February 2011).

5.15.4 Conditions of Certification

Implementation of Mitigation Measures/Conditions of Certification as described in Section 5.15.4 of the AFC (February 2011), provide procedures for hazardous materials handling. The EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.15.4 of the AFC (February 2011).

5.15.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable hazardous materials handling LORS described in in Sections 5.15.5 of the AFC (February 2011). Implementation of the project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.15.7 of the AFC (February 2011).

5.15.6 References

No references in addition to those presented in Section 5.15.8 of the AFC (February 2011) were used for this AFC Refinement.

5.16 PUBLIC HEALTH

This section presents a discussion of the potential impacts related to public health from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures, and applicable LORS resulting from the EWT System.

5.16.1 Affected Environment

The EWT System is located within the study area previously evaluated in Section 5.16.1 in the AFC (February 2011), and is subject to the same geographic, meteorological, air quality, and population conditions. Therefore, the affected environment resulting from the EWT System is unchanged from that presented in Section 5.16.1 in the AFC (February 2011).

5.16.2 Environmental Consequences

Construction of the EWT System would not involve activities or equipment resulting in emissions or releases in excess of those analyzed in Section 5.16.2.1 of the AFC (February 2011). Therefore, construction impacts of the project, including the refinement discussed herein, would not result in additional impacts than the discussion presented in Section 5.16.2.1 of the AFC (February 2011).

Operation of the EWT System would involve an insignificant increase in emissions due to wastewater disposal truck trips from the site to the disposal facility in the City of San Diego, as described in Section 5.2.2 of this AFC Refinement. Operation of the EWT System would not involve other activities, emissions, or releases in excess of those identified in Section 5.16.2.2 (Operations Impacts), Section 5.16.2.3 (Public Health Impact Assessment), Section 5.16.2.4 (Hazardous Materials), Section 5.16.2.5 (Operation Odors), and Section 5.16.2.6 (Electromagnetic Field Exposure) of the AFC (February 2011). As a result, impacts from operation of the project, including the changes discussed herein, are unchanged from the discussion presented in Sections 5.16.2 of the AFC (February 2011).

5.16.3 Cumulative Impacts

The modifications will not result in additional impacts to public health as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to public health beyond those addressed in Section 5.16.3 of the AFC (February 2011).

5.16.4 Conditions of Certification

Public Health Conditions of Certification have not yet been proposed for the project. The EWT System poses the same effect to public health as previously addressed in Section 5.16.2 of the AFC (February 2011). Therefore, the mitigation measures proposed for the project, including the refinement discussed herein, are unchanged from the discussion presented in Section 5.16.4 of the AFC (February 2011).

5.16.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable public health LORS described in Sections 5.16.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.16.7 of the AFC (February 2011).

5.16.6 References

No references in addition to those presented in Section 5.16.8 of the AFC (February 2011) were used for this AFC Refinement.

5.17 WORKER SAFETY

This section presents a discussion of the potential impacts related to worker safety from the Enhanced Water Treatment (EWT) System, as described in Section 3.0, Enhanced Water Treatment System Description, of this AFC Refinement.

The discussion below addresses the affected environment, environmental consequences, cumulative impacts, mitigation measures/conditions of certification, and applicable LORS resulting from the EWT System.

5.17.1 Affected Environment

The affected environment (exposure to hazards and worker safety procedures) resulting from the EWT System are unchanged from that presented in Section 5.17.1 and 5.17.2 in the AFC (February 2011).

5.17.2 Environmental Consequences

Construction and operation of the EWT System, would not involve changes to worker safety beyond those analyzed in Section 5.17.1 and 5.15.2 of the AFC (February 2011). Therefore, impacts of the project, including the refinement discussed herein would not result in additional impacts than the discussion presented in Section 5.17.2 of the AFC (February 2011).

5.17.3 Cumulative Impacts

The modifications would not result in additional impacts to worker safety as a result of the proposed project refinement. The project, including the changes resulting from the EWT System, will not result in any significant cumulative impacts to worker safety beyond those addressed in Section 5.17.3 of the AFC (February 2011).

5.17.4 Conditions of Certification

Implementation of Mitigation Measures/Conditions of Certification as described in Section 5.17.4 of the AFC (February 2011), provide procedures for worker safety. Implementation of the EWT System would result in no changes to mitigation measures and conditions of certification identified in Section 5.17.4 of the AFC (February 2011).

5.17.5 Laws, Ordinances, Regulations, Standards, and Permits

The project, including the changes discussed herein, will comply with applicable worker safety LORS described in Sections 5.17.5 of the AFC (February 2011). The project, including the EWT System, would not require changes to the permits required and permit schedule described in Section 5.17.7 of the AFC (February 2011).

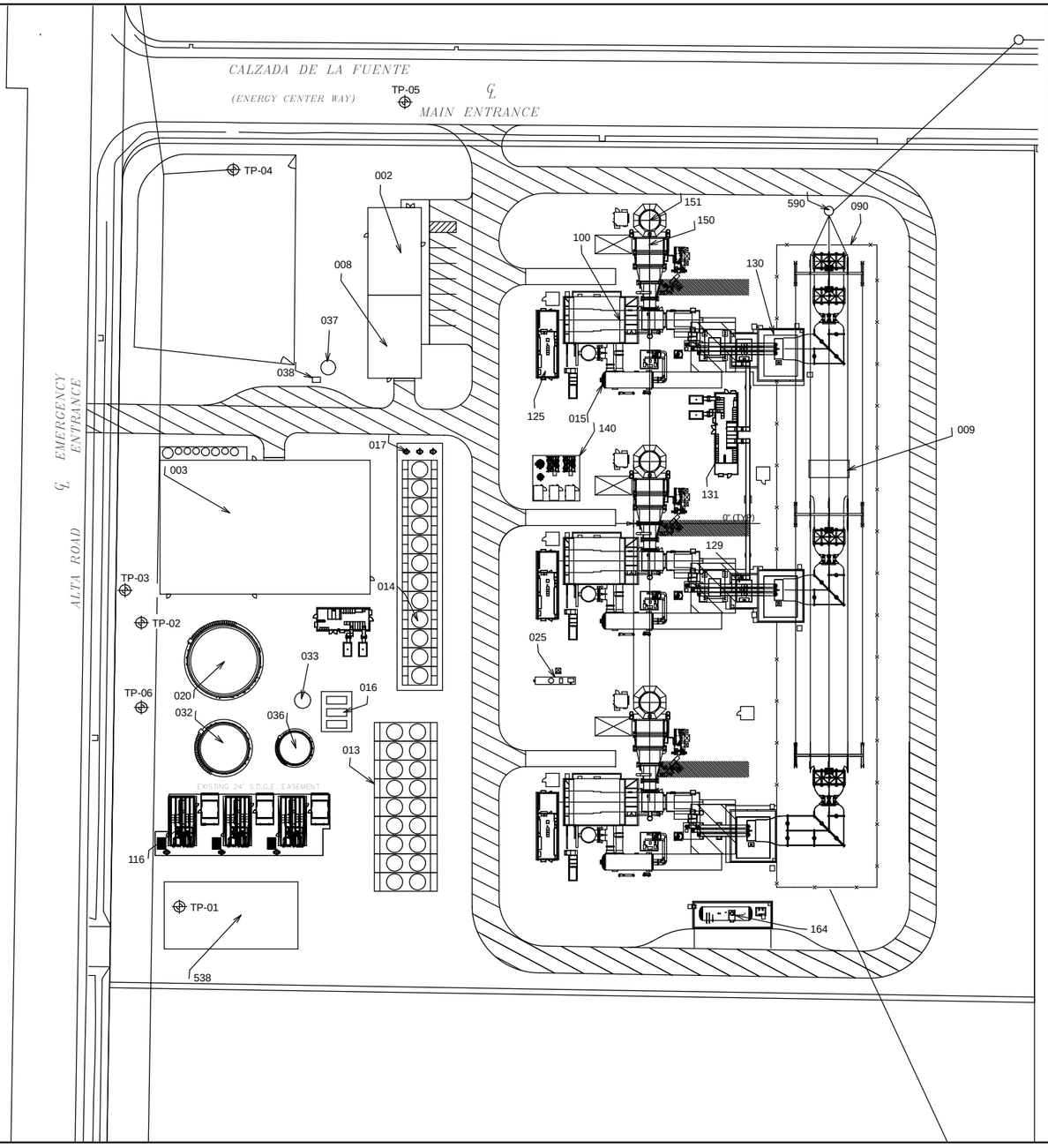
5.17.6 References

No references in addition to those presented in Section 5.17.8 of the AFC (February 2011) were used for this AFC Refinement.

This Application for Certification (AFC) Refinement to the California Energy Commission (CEC) for the Pio Pico Energy Center (PPEC) was prepared by numerous contributors, including the following key people.

LIST OF KEY CONTRIBUTORS

Responsibility	Name	Company/Affiliation
Licensing Project Manager	Gary Chandler	Pio Pico Energy Center, LLC
Project Coordinating Manager	Dave Jenkins	Pio Pico Energy Center, LLC
Development Engineering Manager	Mike King	Pio Pico Energy Center, LLC
Project Engineer Project Manager	Craig Kebodeaux	Kiewit Power Engineers
Counsel	Melissa Foster	Stoel Rives LLP
AFC Project Manager	Maggie Fitzgerald	URS Corporation
Assistant AFC Project Manager	Jennifer Wu Amanda Johnson	URS Corporation
Agriculture and Soils	Ray Rice	URS Corporation
Air Quality	Gary Rubenstein Steve Hill	Sierra Research
Biological Resources	Lincoln Hulse	URS Corporation
Cultural Resources	Rachael Nixon	URS Corporation
Geologic Hazards and Resources	Ray Rice	URS Corporation
Hazardous Materials Handling	Tricia Winterbauer	URS Corporation
Land Use	Virginia Viado	URS Corporation
Noise	Ron Reeves	URS Corporation
Paleontological Resources	Joe Stewart	URS Corporation
Public Health and Safety	Gary Rubenstein Steve Hill	Sierra Research
Socioeconomics	Jennifer Wu	URS Corporation
Traffic and Transportation	Noel Casil	URS Corporation
Visual Resources	Angela Leiba	URS Corporation
Waste Management	Tricia Winterbauer	URS Corporation
Water Resources	Anne Connell	URS Corporation
Worker Safety	Tricia Winterbauer	URS Corporation



TIE-IN LOCATIONS	
TP-01	FUEL GAS
TP-02	POTABLE WATER
TP-03	RECYCLED WATER
TP-04	STORM WATER
TP-05	SEWER
TP-06	FIRE WATER

NO	EQUIPMENT TITLE
002	CONTROL ROOM
003	WATER / WASTEWATER TREATMENT
008	WAREHOUSE
009	SWITCHYARD MODULE
013	DRY AIR COOLERS
014	WET AIR COOLERS
015	INTERCOOLER
016	CIRCULATING WATER PUMPS
017	WSAC RECIRC PUMPS
020	SERVICE WATER TANK
025	OIL/WATER SEPARATOR
032	DEMINERALIZED WATER TANK
033	CIRCULATING WATER EXPANSION TANK
036	PROCESS WASTE WATER COLLECTION TANK
037	FINAL WASTE WATER TANK
038	WASTEWATER TANKER TRUCK CONNECTION
090	PLANT SWITCHYARD
100	COMBUSTION TURBINE
116	GAS COMPRESSOR MODULE
125	CTG POWER/CONTROL MODULE
129	AUXILIARY TRANSFORMER
130	GENERATOR TRANSFORMER
131	5KV ELECTRICAL MODULE
140	AIR COMPRESSOR
150	SCR
151	STACK
164	AMMONIA STORAGE
538	GAS METERING STATION
590	TRANSMISSION LINE

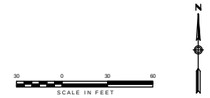
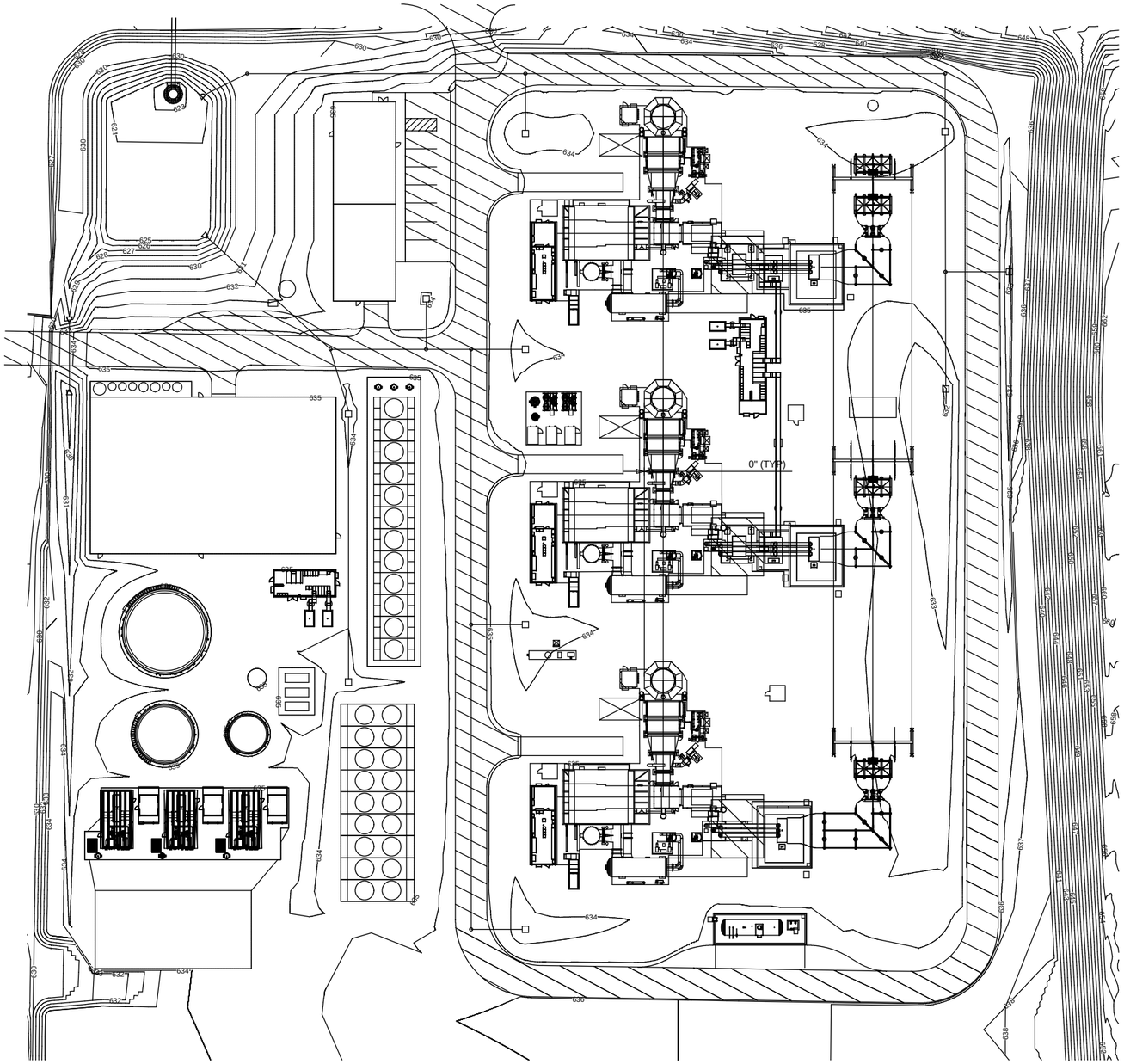


FIGURE 3.1-3A (REVISED)
SITE ARRANGEMENT

PIO PICO
ENERGY CENTER

PROJECT NO.: 29874827
DATE: OCTOBER 2011

URS



NOTES:

1. ALL SLOPES STEEPER THAN 3:1(H:V) SHALL HAVE EROSION PROTECTION.
2. PERMANENT PLANT AREA: 9.99 AC.
3. PERMANENT PLANT VOLUME: CUT 6,155 CY; FILL 12,637 CY

40 0 40 80

SCALE IN FEET

N

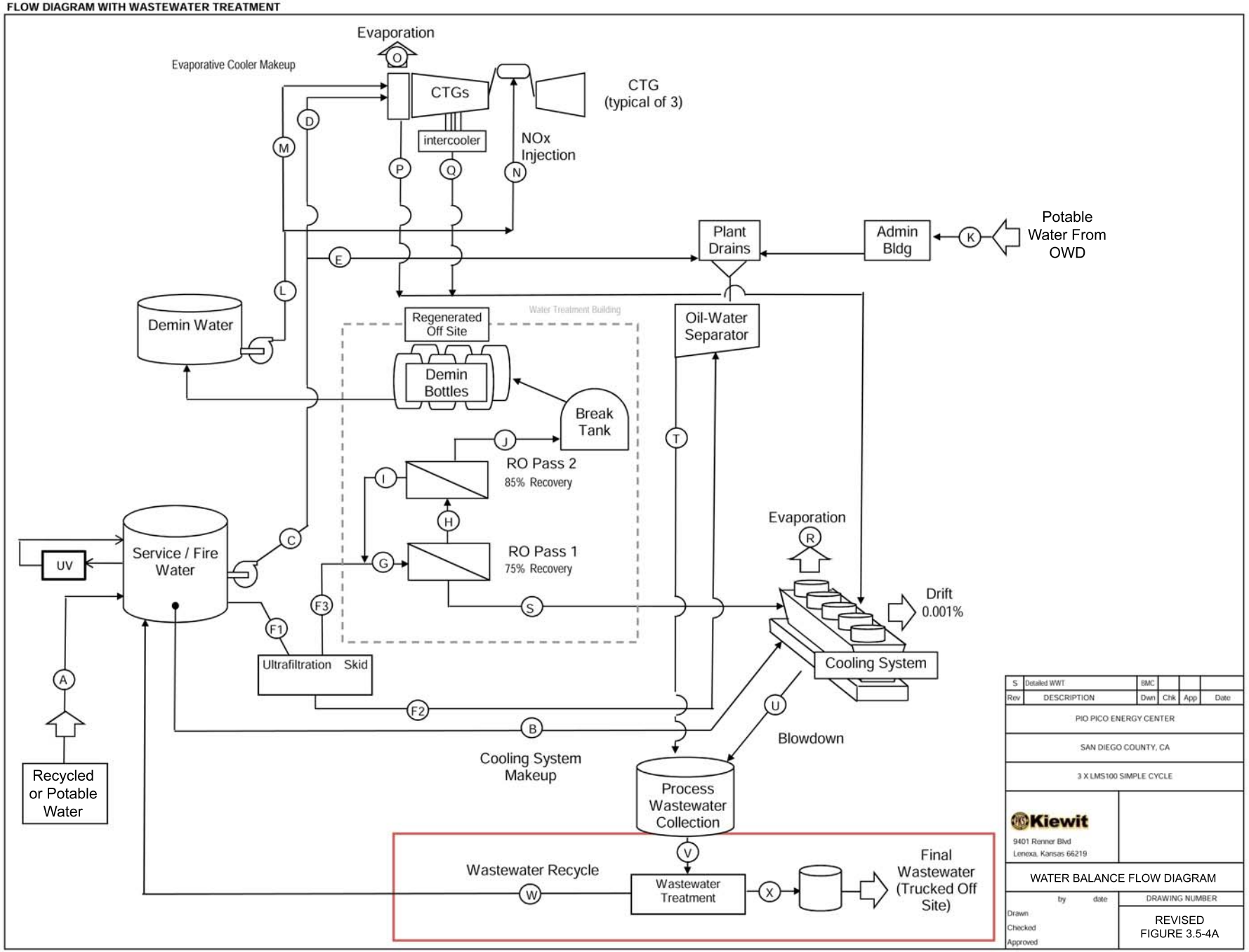
FIGURE 3.4-3 (REVISED)
PRELIMINARY GRADING AND DRAINAGE PLAN

PIO PICO
ENERGY CENTER

PROJECT NO.: 29874827
DATE: OCTOBER 2011

URS

FLOW DIAGRAM WITH WASTEWATER TREATMENT



S	Detailed WWT	BMC			
Rev	DESCRIPTION	Dwn	Chk	App	Date

PIO PICO ENERGY CENTER

SAN DIEGO COUNTY, CA

3 X LMS100 SIMPLE CYCLE

Kiewit
9401 Renner Blvd
Lenexa, Kansas 66219

WATER BALANCE FLOW DIAGRAM

	by	date
Drawn		
Checked		
Approved		

DRAWING NUMBER

REVISED
FIGURE 3.5-4A

	CASE	ISO	Average High	Summer High	Peak Hour	Peak Day Average
	Ambient Temperature	59	70	80	93	82
	Wet Bulb Temperature	51	60	63	65	63
	Relative Humidity, %	60	57	38	22	38
	Ambient Pressure	14.36	14.36	14.36	14.36	14
	Gross Turbine Output, MW	104.3	102.4	101.0	99.3	100.7
	Inlet Air Cooler Status	Off	On	On	On	On
	Description CTs in service	3	3	3	3	3
A	Water Required by Plant	365	413	477	561	490
B	Required Makeup to Cooling System	206	228	280	326	290
C	Service Water Flow	5	32	39	80	43
D	Service water to evap coolers	0	27	34	75	38
E	Washdown hose use	5	5	5	5	5
F1	UF System Feed	232	239	253	262	255
F2	UF System Backwash	12	12	13	13	13
T	Oil/Water Sep Effluent	19	19	20	20	20
F3	RO System Feed	220	227	240	249	243
G	RO Pass 1 Inlet Flow	248	256	271	281	273
H	RO Pass 2 Inlet Flow	186	192	203	211	205
I	RO Pass 2 Reject to Pass 1	28	29	30	32	31
J	RO Product Water	158	163	172	179	174
S	RO rejects	62	64	68	70	68
K	Potable water to admin bldg	2	2	2	2	2
L	Demineralized Water Flow	158	163	172	179	174
M	Demin water to evap coolers	0	11	23	32	25
N	NOx injection	158	152	149	147	149
O	Evap cooler evaporation	0	19	32	51	35
	Evap cooler Cycles of Concentration	1.45	1.95	2.30	1.90	2.28
P	Evaporative cooler blowdown	0	20	25	56	28
	Evap cooler Total Makeup	0	38	57	107	63
	Evap cooler makeup demin fraction	10%	30%	40%	30%	40%
Q	Intercooler condensation	0	28	35	43	36
	Heat Rejection (MMBtu/hr)	118	123	124	126	124
	Percent Dry Cooling	71%	63%	56%	46%	54%
R	Cooling System Evaporation	191	254	311	385	322
	Cooling System Cycles of Concentration	3.50	4.00	4.25	4.50	4.25
U	Cooling System Blowdown	77	85	96	110	99
	Cooling System Total Makeup	268	339	407	495	422
V	Total Process Waste Flow	95	104	115	130	119
W	Recovered Wastewater Recycle	79	86	95	107	98
X	Final Wastewater Flow	17	18	20	23	21

							Annual
	Annual Operation	hours	1,100	1,600	1,000	300	4,000
	Water Used	Acre-ft	74	122	88	31	314
	Water Saved, compared to	Acre-ft	135	173	94	23	425
	100% evaporative cooling	%	65%	59%	52%	43%	57%
	Wastewater Disposal	Acre-ft	3	5	4	1	14

Notes:

1) All Flows are displayed in GPM
2) Based on GE APPS performance
3) Ultrafilter recovery rate 95%
4) RO 1st Pass Recovery Rate 75%
5) RO 2nd Pass Recovery Rate 85%
6) Overall RO Recovery Rate 72%
7) Cooling System Drift 0.0010%
8) Service Water Use, gpm 5
9) Annual Capacity Factor 46%
10) Annual Water Savings 57%
    compared to 100% evaporative cooling
11) Operating hours are estimated
    to maximize operation at higher temperatures
12) WWT Recovery Rate 82.5%

S	Detailed WWT	BMC			

PIO PICO ENERGY CENTER

SAN DIEGO COUNTY, CA

Kiewit

9401 Renner Blvd
Lenexa, Kansas 66219

3 X LMS100 SIMPLE CYCLE

WATER BALANCE FLOW VALUES,
RECYCLED WATER SCENARIO

	by	date	DRAWING NUMBER
Drawn			REVISED FIGURE 3.5-4B
Checked			
Approved			

	CASE	ISO	Average High	Summer High	Peak Hour	Peak Day Average
	Ambient Temperature	59	70	80	93	82
	Wet Bulb Temperature	51	60	63	65	63
	Relative Humidity, %	60	57	38	22	38
	Ambient Pressure	14.36	14.36	14.36	14.36	14
	Gross Turbine Output, MW	104.3	102.4	101.0	99.3	100.7
	Inlet Air Cooler Status	Off	On	On	On	On
	Description CTs in service	3	3	3	3	3
A	Water Required by Plant	361	409	473	557	486
B	Required Makeup to Cooling System	184	221	275	345	287
C	Service Water Flow	5	8	10	12	10
D	Service water to evap coolers	0	3	5	7	5
E	Washdown hose use	5	5	5	5	5
F1	UF System Feed	232	248	265	287	269
F2	UF System Backwash	12	12	13	14	13
T	Oil/Water Sep Effluent	19	19	20	21	20
F3	RO System Feed	220	236	252	273	255
G	RO Pass 1 Inlet Flow	248	266	284	307	288
H	RO Pass 2 Inlet Flow	186	199	213	231	216
I	RO Pass 2 Reject to Pass 1	28	30	32	35	32
J	RO Product Water	158	169	181	196	183
S	RO rejects	62	66	71	77	72
K	Potable water to admin bldg	2	2	2	2	2
L	Demineralized Water Flow	158	169	181	196	183
M	Demin water to evap coolers	0	18	31	49	34
N	NOx injection	158	152	149	147	149
O	Evap cooler evaporation	0	19	32	51	35
	Evap cooler Cycles of Concentration	9.80	9.80	9.80	9.80	9.80
P	Evaporative cooler blowdown	0	2	4	6	4
	Evap cooler Total Makeup	0	21	36	56	39
	Evap cooler makeup demin fraction	87%	87%	87%	87%	87%
Q	Intercooler condensation	0	28	35	43	36
	Heat Rejection (MMBtu/hr)	118	123	124	126	124
	Percent Dry Cooling	71%	63%	56%	46%	54%
R	Cooling System Evaporation	191	254	311	385	322
	Cooling System Cycles of Concentration	4.50	5.00	5.25	5.50	5.25
U	Cooling System Blowdown	55	64	73	86	76
	Cooling System Total Makeup	246	318	384	471	398
V	Total Waste Flow	73	83	93	107	96
W	Recovered Wastewater	60	68	77	88	79
X	Wastewater Flow	13	15	16	19	17

							Annual
	Annual Operation	hours	1,100	1,600	1,000	300	4,000
	Water Used	Acre-ft	73	120	87	31	311
	Water Saved, compared to	Acre-ft	124	162	89	22	397
	100% evaporative cooling	%	63%	57%	50%	42%	56%
	Wastewater Disposal	Acre-ft	3	4	3	1	11

Notes:

1) All Flows are displayed in GPM
2) Based on GE APPS performance
3) Ultrafilter recovery rate 95%
4) RO 1st Pass Recovery Rate 75%
5) RO 2nd Pass Recovery Rate 85%
6) Overall RO Recovery Rate 72%
7) Cooling System Drift 0.0010%
8) Service Water Use, gpm 5
9) Annual Capacity Factor 46%
10) Annual Water Savings 56%
    compared to 100% evaporative cooling
11) Operating hours are estimated
    to maximize operation at higher temperatures
12) WWT Recovery Rate 82.5%

U	Potable Water with WWT	BMC			10/20/11

PIO PICO ENERGY CENTER

SAN DIEGO COUNTY, CA

Kiewit
9401 Renner Blvd
Lenexa, Kansas 66219

3 X LMS100 SIMPLE CYCLE

WATER BALANCE FLOW VALUES,
POTABLE WATER SCENARIO

by	date	DRAWING NUMBER
Drawn		NEW
Checked		FIGURE 3.5-4C
Approved		

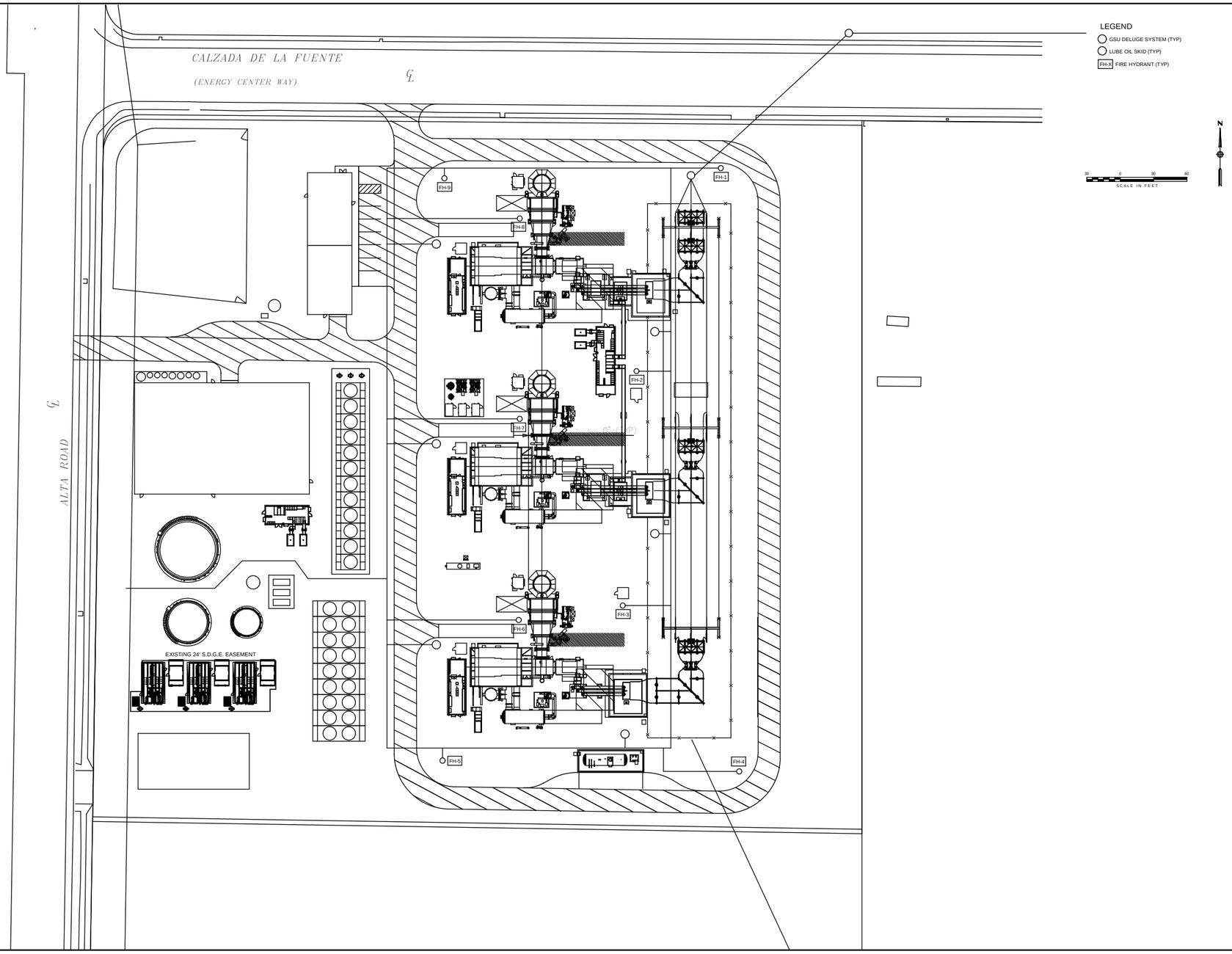
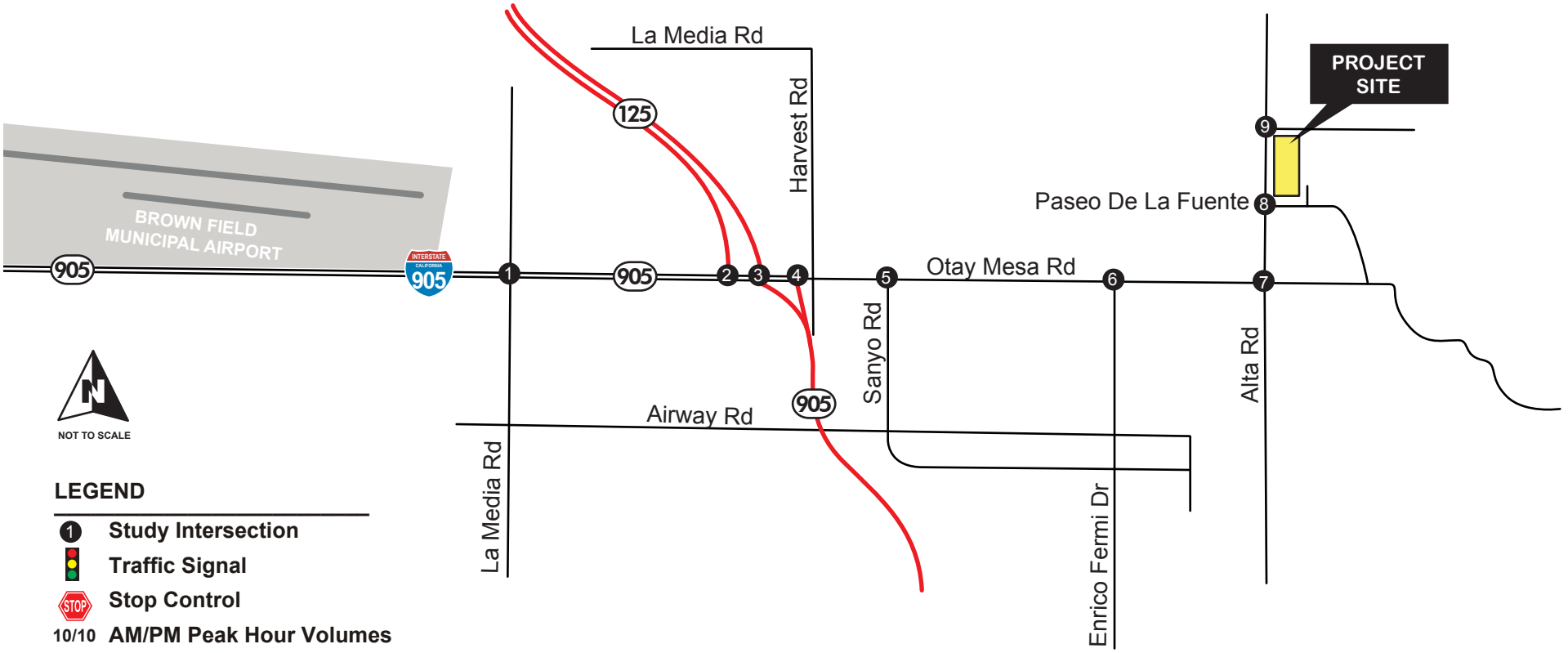


FIGURE 3.5-5 (REVISED)
FIRE PROTECTION SYSTEM

PIO PICO
ENERGY CENTER

PROJECT NO.: 29874827
DATE: OCTOBER 2011

URS



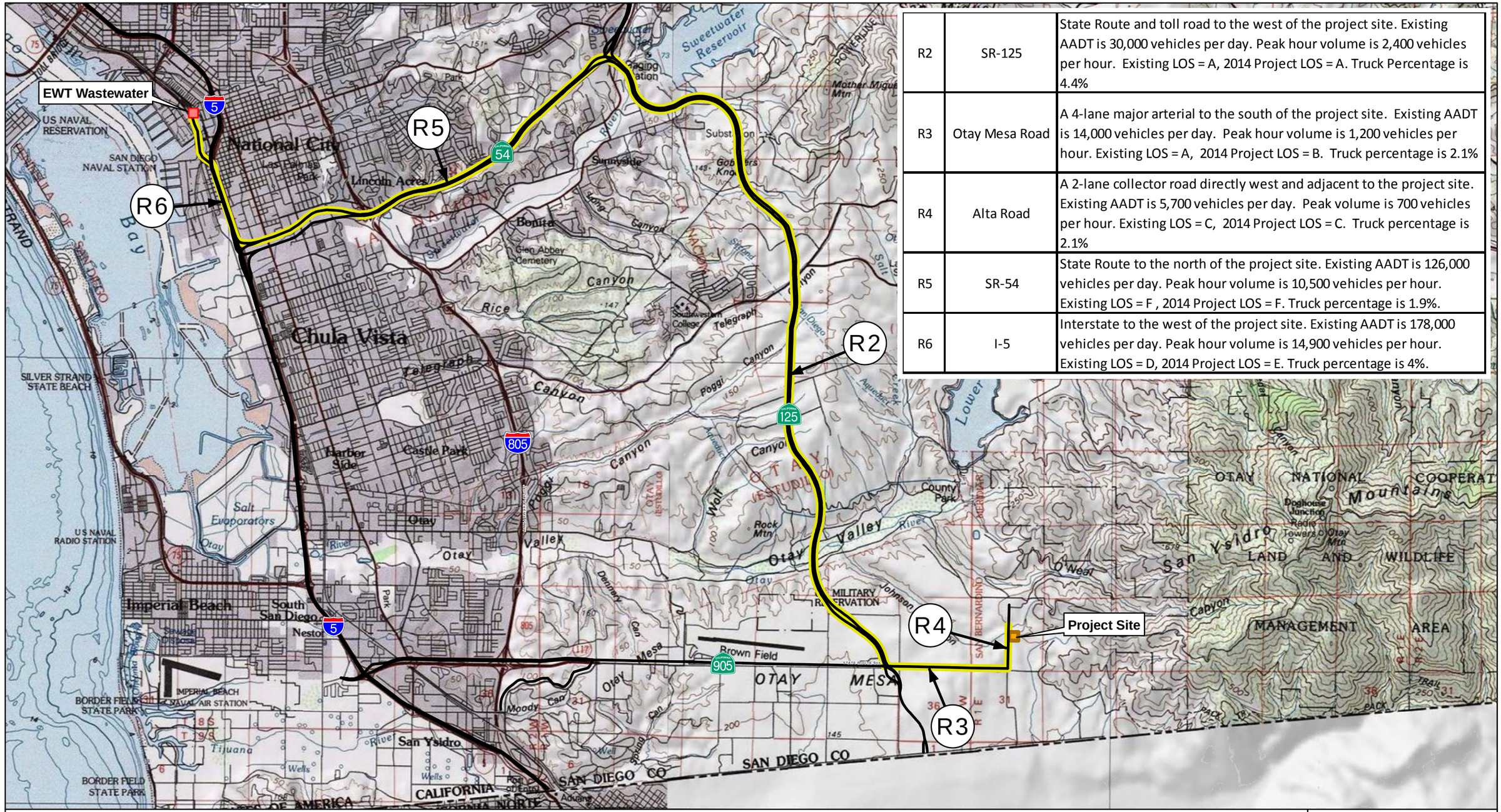
YEAR 2014 PROJECT OPERATIONS PLUS CUMULATIVE PROJECTS TRAFFIC VOLUMES

PIO PICO ENERGY CENTER
OTAY MESA

URS

REVISED FIGURE 5.11-9

K:\2010\Pio Pico Otay Mesa\REV- Fig 5.11-9- Yr 2014 Plus Project Op Traffic Vol.ai



R2	SR-125	State Route and toll road to the west of the project site. Existing AADT is 30,000 vehicles per day. Peak hour volume is 2,400 vehicles per hour. Existing LOS = A, 2014 Project LOS = A. Truck Percentage is 4.4%
R3	Otay Mesa Road	A 4-lane major arterial to the south of the project site. Existing AADT is 14,000 vehicles per day. Peak hour volume is 1,200 vehicles per hour. Existing LOS = A, 2014 Project LOS = B. Truck percentage is 2.1%
R4	Alta Road	A 2-lane collector road directly west and adjacent to the project site. Existing AADT is 5,700 vehicles per day. Peak volume is 700 vehicles per hour. Existing LOS = C, 2014 Project LOS = C. Truck percentage is 2.1%
R5	SR-54	State Route to the north of the project site. Existing AADT is 126,000 vehicles per day. Peak hour volume is 10,500 vehicles per hour. Existing LOS = F , 2014 Project LOS = F. Truck percentage is 1.9%.
R6	I-5	Interstate to the west of the project site. Existing AADT is 178,000 vehicles per day. Peak hour volume is 14,900 vehicles per hour. Existing LOS = D, 2014 Project LOS = E. Truck percentage is 4%.

Legend

EWT Wastewater Traffic Haul Route

N

0 1 2 Miles

FIGURE 5.11-10

EWT WASTEWATER TRAFFIC HAUL ROUTE

PIO PICO ENERGY CENTER

PROJECT NO.: 29874827

DATE: OCTOBER 2011

URS

Appendix I-1 Supplement – Water Resources Will-Serve Letter

THE CITY OF SAN DIEGO

October 21, 2011

Gary Chandler, President
Pio Pico Energy Center, LLC
P.O. Box 95592
South Jordan, UT 84095

Subject: Wastewater Disposal Service for Pio Pico Energy Center, LLC

Dear Mr. Chandler:

Under the City of San Diego's Industrial Wastewater Control Program (IWCP), industrial wastewater from the Pio Pico Energy Center (PPEC) can be trucked to and discharged into the San Diego public sewer system at Pump Station #1 located at 3350 East Harbor Drive, San Diego, CA. Pump Station #1 is operated by the City of San Diego and serves as the only regional facility for hauled liquid industrial waste. We understand that the industrial wastewater produced by the PPEC will consist of cooling tower blowdown and other process wastewater, that will be treated and concentrated such that it will have a total dissolved solids content of approximately 30,000 parts per million and comply with all current General and Specific Prohibitions and local limits for wastewater discharges to the Point Loma Wastewater treatment plant. The maximum daily delivery during peak operations would be approximately 14,000 gallons, although delivery could be as much as 30,000 gallons in the event that the PPEC operates for 24 hours during extremely hot temperatures. The City of San Diego's public sewer system, including Pump Station #1, the Point Loma Wastewater Treatment Plant, and the Point Loma Ocean Outfall, has sufficient hydraulic and treatment capacity to accommodate the Pico Pico Energy Center's industrial wastewater.

Prior to discharge, the Pio Pico Energy Center will be required to obtain a Trucked Industrial Waste Generator Permit. The permit application should be submitted at least 30 days, but preferably 45 days, prior to discharge. PPEC's hauled liquid waste discharges at Pump Station #1 must comply with applicable current and future local limits developed to protect the Pt Loma

Wastewater Treatment Plant and receiving waters, enable beneficial use of Metro system biosolids, and enable reclamation and reuse of wastewater.

Should you have any questions, you may contact me at (858) 654-4106 or via email at BSharatz@sandiego.gov.

Sincerely,

Barbara Sharatz
Pretreatment Program Manager
City of San Diego Public Utilities, Wastewater Branch

Appendix N Supplement– Intersection Analysis Worksheets

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Scenario Report

Scenario:	2014 AM_WP
Command:	2014 AM WP
Volume:	Year 2010 Existing AM Peak
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Year 2014 AM Peak
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Year 2014 Buildout & Longterm

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Trip Generation Report

Forecast for Year 2014 AM Peak

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Pio Pico Ene	24.00	Pio Pico - Ope	0.50	0.00	12	0	12	36.4
1	Pio Pico Ene	658.00	Pio Pico - Con	0.00	0.00	0	0	0	0.0
	Zone 1 Subtotal					12	0	12	36.4
2	EWT Trucks	42.00	EWT Trucks	0.50	0.00	21	0	21	63.6
	Zone 2 Subtotal					21	0	21	63.6
TOTAL						33	0	33	100.0

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Trip Distribution Report

Percent Of Trips Default

Zone	To Gates 1	3
1	20.0	80.0
2	100.0	0.0

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Turning Movement Report
Year 2014 AM Peak

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 SR-905 / La Media Road													
Base	109	26	39	35	50	50	96	1590	416	114	999	70	3594
Added	0	0	0	0	0	0	0	10	0	0	0	0	10
Total	109	26	39	35	50	50	96	1600	416	114	999	70	3604
#2 SR-125 SB Off Ramp / SR-905													
Base	0	0	0	608	0	198	0	493	0	0	974	0	2274
Added	0	0	0	23	0	0	0	10	0	0	0	0	33
Total	0	0	0	631	0	198	0	503	0	0	974	0	2307
#3 SR-125 NB On Ramp / SR-905													
Base	0	0	0	0	0	0	29	1061	0	0	989	81	2161
Added	0	0	0	0	0	0	0	33	0	0	0	0	33
Total	0	0	0	0	0	0	29	1094	0	0	989	81	2194
#4 SR-905 (NB) / Otay Mesa Rd													
Base	818	0	7	0	0	0	0	1058	0	0	251	0	2133
Added	0	0	0	0	0	0	0	33	0	0	0	0	33
Total	818	0	7	0	0	0	0	1091	0	0	251	0	2166
#5 Otay Mesa Rd / Sanyo Rd													
Base	42	0	0	0	0	0	0	675	404	0	202	0	1322
Added	0	0	0	0	0	0	0	33	0	0	0	0	33
Total	42	0	0	0	0	0	0	708	404	0	202	0	1355
#6 Otay Mesa Rd / Enrico Fermi Dr													
Base	81	0	20	0	0	0	0	623	51	7	118	0	900
Added	0	0	0	0	0	0	0	33	0	0	0	0	33
Total	81	0	20	0	0	0	0	656	51	7	118	0	933
#7 Otay Mesa Rd / Alta Rd													
Base	0	0	0	0	0	109	607	0	0	0	0	0	716
Added	0	0	0	0	0	0	33	0	0	0	0	0	33
Total	0	0	0	0	0	109	640	0	0	0	0	0	749
#8 Alta Rd / Paseo De La Puente													
Base	0	599	7	2	108	0	0	0	0	2	0	5	723
Added	0	0	33	0	0	0	0	0	0	0	0	0	33
Total	0	599	40	2	108	0	0	0	0	2	0	5	756
#9 Alta Rd / North Access Rd													
Base	0	590	16	5	95	0	0	0	0	14	0	9	730
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	590	16	5	95	0	0	0	0	14	0	9	730

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Link Volume Report
Year 2014 AM Peak

Volume Type	NB Link In	NB Link Out	NB Link Total	SB Link In	SB Link Out	SB Link Total	EB Link In	EB Link Out	EB Link Total	WB Link In	WB Link Out	WB Link Total	Total Volume
#1 SR-905 / La Media Road													
Base	174	580	754	135	191	326	2103	1158	3261	1182	1665	2847	7187
Added	0	0	0	0	0	0	10	0	10	0	10	10	20
Total	174	580	754	135	191	326	2113	1158	3271	1182	1675	2857	7207
#2 SR-125 SB Off Ramp / SR-905													
Base	0	0	0	806	0	806	493	1173	1666	974	1101	2075	4547
Added	0	0	0	23	0	23	10	0	10	0	33	33	66
Total	0	0	0	829	0	829	503	1173	1676	974	1134	2108	4613
#3 SR-125 NB On Ramp / SR-905													
Base	0	0	0	0	110	110	1090	989	2080	1071	1061	2132	4322
Added	0	0	0	0	0	0	33	0	33	0	33	33	66
Total	0	0	0	0	110	110	1123	989	2113	1071	1094	2165	4388
#4 SR-905 (NB) / Otay Mesa Rd													
Base	825	0	825	0	0	0	1058	1068	2126	251	1065	1315	4266
Added	0	0	0	0	0	0	33	0	33	0	33	33	66
Total	825	0	825	0	0	0	1091	1068	2159	251	1098	1348	4332
#5 Otay Mesa Rd / Sanyo Rd													
Base	42	404	445	0	0	0	1079	244	1322	202	675	877	2645
Added	0	0	0	0	0	0	33	0	33	0	33	33	66
Total	42	404	445	0	0	0	1112	244	1355	202	708	910	2711
#6 Otay Mesa Rd / Enrico Fermi Dr													
Base	101	58	159	0	0	0	674	200	873	125	643	768	1800
Added	0	0	0	0	0	0	33	0	33	0	33	33	66
Total	101	58	159	0	0	0	707	200	906	125	676	801	1866
#7 Otay Mesa Rd / Alta Rd													
Base	0	0	0	109	607	716	607	109	716	0	0	0	1431
Added	0	0	0	0	33	33	33	0	33	0	0	0	66
Total	0	0	0	109	640	749	640	109	749	0	0	0	1497
#8 Alta Rd / Paseo De La Puente													
Base	606	110	716	110	603	713	0	0	0	7	9	16	1445
Added	33	0	33	0	0	0	0	0	0	0	33	33	66
Total	639	110	749	110	603	713	0	0	0	7	42	49	1511
#9 Alta Rd / North Access Rd													
Base	607	109	716	100	600	699	0	0	0	23	21	44	1459
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	607	109	716	100	600	699	0	0	0	23	21	44	1459

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	SR-905 / La M	109	26	39	35	50	50	96	1590	416	114	999	70
2	SR-125 SB Off	0	0	0	608	0	198	0	493	0	0	974	0
3	SR-125 NB On	0	0	0	0	0	0	29	1061	0	0	989	81
4	SR-905 (NB) /	818	0	7	0	0	0	0	1058	0	0	251	0
5	Otay Mesa Rd	42	0	0	0	0	0	0	675	404	0	202	0
6	Otay Mesa Rd	81	0	20	0	0	0	0	623	51	7	118	0
7	Otay Mesa Rd	0	0	0	0	0	109	607	0	0	0	0	0
8	Alta Rd / Pas	0	599	7	2	108	0	0	0	0	2	0	5
9	Alta Rd / Nor	0	590	16	5	95	0	0	0	0	14	0	9

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
1	SR-905 / La M	109	26	39	35	50	50	96	1600	416	114	999	70
2	SR-125 SB Off	0	0	0	631	0	198	0	503	0	0	974	0
3	SR-125 NB On	0	0	0	0	0	0	29	1094	0	0	989	81
4	SR-905 (NB) /	818	0	7	0	0	0	0	1091	0	0	251	0
5	Otay Mesa Rd	42	0	0	0	0	0	0	708	404	0	202	0
6	Otay Mesa Rd	81	0	20	0	0	0	0	656	51	7	118	0
7	Otay Mesa Rd	0	0	0	0	0	109	640	0	0	0	0	0
8	Alta Rd / Pas	0	599	40	2	108	0	0	0	0	2	0	5
9	Alta Rd / Nor	0	590	16	5	95	0	0	0	0	14	0	9

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 SR-905 / La Media Road	C	22.0	0.694	C	22.0	0.697	-0.013 D/V
# 2 SR-125 SB Off Ramp / SR-905	B	18.8	0.447	B	19.0	0.456	+ 0.211 D/V
# 3 SR-125 NB On Ramp / SR-905	A	2.1	0.356	A	2.1	0.356	-0.013 D/V
# 4 SR-905 (NB) / Otay Mesa Rd	C	21.5	0.643	C	21.6	0.654	+ 0.102 D/V
# 5 Otay Mesa Rd / Sanyo Rd	A	3.3	0.413	A	3.3	0.425	-0.019 D/V
# 6 Otay Mesa Rd / Enrico Fermi Dr	B	10.6	0.606	B	10.9	0.632	+ 0.222 D/V
# 7 Otay Mesa Rd / Alta Rd	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V
# 8 Alta Rd / Paseo De La Puente	A	1.7	0.477	A	1.8	0.507	+ 0.106 D/V
# 9 Alta Rd / North Access Rd	C	18.0	0.000	C	18.0	0.000	+ 0.000 D/V

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR-905 / La Media Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.697
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 68 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	2 0	0 1	0	1 0	3 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	94	22	34	30	43	43	83	1371	359	98	861	60
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	109	26	39	35	50	50	96	1590	416	114	999	70
Added Vol:	0	0	0	0	0	0	0	10	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	26	39	35	50	50	96	1600	416	114	999	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	131	31	47	42	60	60	115	1917	499	136	1196	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	31	47	42	60	60	115	1917	499	136	1196	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	131	31	47	42	60	60	115	1917	499	136	1196	83
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.92	0.93	0.93	0.95	0.91	0.85	0.95	0.90	0.90
Lanes:	1.00	0.39	0.61	2.00	0.50	0.50	1.00	3.00	1.00	1.00	2.80	0.20
Final Sat.:	1805	679	1049	3502	879	879	1805	5187	1615	1805	4801	335
Capacity Analysis Module:												
Vol/Sat:	0.07	0.05	0.05	0.01	0.07	0.07	0.06	0.37	0.31	0.08	0.25	0.25
Crit Moves:	****				****			****			****	
Green/Cycle:	0.10	0.16	0.16	0.04	0.10	0.10	0.13	0.53	0.53	0.11	0.51	0.51
Volume/Cap:	0.70	0.28	0.28	0.28	0.70	0.70	0.49	0.70	0.58	0.70	0.49	0.49
Delay/Veh:	54.2	37.6	37.6	47.5	55.6	55.6	42.0	18.3	17.0	53.5	16.2	16.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.2	37.6	37.6	47.5	55.6	55.6	42.0	18.3	17.0	53.5	16.2	16.2
HCM2kAvg:	6	2	2	1	5	5	4	15	11	6	9	9

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 SR-125 SB Off Ramp / SR-905

Cycle (sec): 100 Critical Vol./Cap. (X): 0.456
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 38 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	2 0	0	0 1	0 0	3	0 0	0 0	3	0 0
Volume Module:												
Base Vol:	0	0	0	524	0	171	0	425	0	0	840	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	0	0	608	0	198	0	493	0	0	974	0
Added Vol:	0	0	0	23	0	0	0	10	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	631	0	198	0	503	0	0	974	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	687	0	216	0	548	0	0	1061	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	687	0	216	0	548	0	0	1061	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	687	0	216	0	548	0	0	1061	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	1.00	0.91	1.00	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	3502	0	1615	0	5187	0	0	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.13	0.00	0.11	0.00	0.00	0.20	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.43	0.00	0.43	0.00	0.45	0.00	0.00	0.45	0.00
Volume/Cap:	0.00	0.00	0.00	0.46	0.00	0.31	0.00	0.24	0.00	0.00	0.46	0.00
Delay/Veh:	0.0	0.0	0.0	20.4	0.0	19.0	0.0	17.0	0.0	0.0	19.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	20.4	0.0	19.0	0.0	17.0	0.0	0.0	19.2	0.0
HCM2kAvg:	0	0	0	8	0	4	0	3	0	0	8	0

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR-125 NB On Ramp / SR-905

Cycle (sec): 100 Critical Vol./Cap. (X): 0.356
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 2.1
Optimal Cycle: 33 Level Of Service: A

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	T	R	L	T	R	L	T	R		L	T	R	
Control:	Protected			Protected			Protected				Protected			
Rights:	Include			Include			Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0		0	0	0	
Lanes:	0	0	0	0	0	0	0	0	0	1	0	2	1	1	0	0	2	0	2
Volume Module:														
Base Vol:	0	0	0	0	0	0	25	915	0		0	853	70	
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16		1.16	1.16	1.16	
Initial Bse:	0	0	0	0	0	0	29	1061	0		0	989	81	
Added Vol:	0	0	0	0	0	0	0	33	0		0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0		0	0	0	
Initial Fut:	0	0	0	0	0	0	29	1094	0		0	989	81	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93		0.93	0.93	0.93	
PHF Volume:	0	0	0	0	0	0	31	1182	0		0	1069	88	
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0	
Reduced Vol:	0	0	0	0	0	0	31	1182	0		0	1069	88	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0	0	0	0	31	1182	0		0	1069	88	
Saturation Flow Module:														
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.91	0.91		1.00	0.95	0.75	
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00	1.00		0.00	2.00	2.00	
Final Sat.:	0	0	0	0	0	0	1805	5187	1729		0	3610	2842	
Capacity Analysis Module:														
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.23	0.00		0.00	0.30	0.03	
Crit Moves:							****					****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.88	0.00		0.00	0.83	0.83	
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.26	0.00		0.00	0.36	0.04	
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	48.5	1.0	0.0		0.0	2.1	1.5	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	48.5	1.0	0.0		0.0	2.1	1.5	
HCM2kAvg:	0	0	0	0	0	0	1	2	0		0	4	0	

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 SR-905 (NB) / Otay Mesa Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.654
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 54 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 0 1			0 0 0 0 0			0 0 2 0 0			0 0 2 0 0		
Volume Module:												
Base Vol:	705	0	6	0	0	0	0	912	0	0	216	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	818	0	7	0	0	0	0	1058	0	0	251	0
Added Vol:	0	0	0	0	0	0	0	33	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	818	0	7	0	0	0	0	1091	0	0	251	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	878	0	7	0	0	0	0	1172	0	0	269	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	878	0	7	0	0	0	0	1172	0	0	269	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	878	0	7	0	0	0	0	1172	0	0	269	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.85	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	3502	0	1615	0	0	0	0	3610	0	0	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.07	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.38	0.00	0.38	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.50	0.00
Volume/Cap:	0.65	0.00	0.01	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.15	0.00
Delay/Veh:	26.5	0.0	19.1	0.0	0.0	0.0	0.0	19.7	0.0	0.0	13.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	0.0	19.1	0.0	0.0	0.0	0.0	19.7	0.0	0.0	13.7	0.0
HCM2kAvg:	12	0	0	0	0	0	0	14	0	0	2	0

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Otay Mesa Rd / Sanyo Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.425
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 3.3
Optimal Cycle: 36 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	1 0	1 0	0
Volume Module:												
Base Vol:	36	0	0	0	0	0	0	582	348	0	174	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	42	0	0	0	0	0	0	675	404	0	202	0
Added Vol:	0	0	0	0	0	0	0	33	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	0	0	0	0	0	0	708	404	0	202	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	46	0	0	0	0	0	0	785	448	0	224	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	0	0	0	0	0	0	785	448	0	224	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	46	0	0	0	0	0	0	785	448	0	224	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	1.00	1.00
Lanes:	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.73	1.00	1.00	0.00
Final Sat.:	3618	0	0	0	0	0	0	2175	1240	1900	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36	0.00	0.12	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.85	0.00	0.85	0.00
Volume/Cap:	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.00	0.14	0.00
Delay/Veh:	50.3	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	0.0	1.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.3	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	0.0	1.3	0.0
HCM2kAvg:	1	0	0	0	0	0	0	5	5	0	1	0

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Otay Mesa Rd / Enrico Fermi Dr

Cycle (sec): 100 Critical Vol./Cap. (X): 0.632
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 51 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	1	0	0	0	1		0	0	0	0	0		0	0	0	1	0		1	0	1	0	0	
Volume Module:																								
Base Vol:	70	0	17				0	0	0				0	537	44				6	102	0			
Growth Adj:	1.16	1.16	1.16				1.16	1.16	1.16				1.16	1.16	1.16				1.16	1.16	1.16			
Initial Bse:	81	0	20				0	0	0				0	623	51				7	118	0			
Added Vol:	0	0	0				0	0	0				0	33	0				0	0	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	81	0	20				0	0	0				0	656	51				7	118	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.76	0.76	0.76				0.76	0.76	0.76				0.76	0.76	0.76				0.76	0.76	0.76			
PHF Volume:	106	0	26				0	0	0				0	859	67				9	155	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	106	0	26				0	0	0				0	859	67				9	155	0			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Final Vol.:	106	0	26				0	0	0				0	859	67				9	155	0			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.95	1.00	0.85				1.00	1.00	1.00				1.00	0.99	0.99				0.95	1.00	1.00			
Lanes:	1.00	0.00	1.00				0.00	0.00	0.00				0.00	0.93	0.07				1.00	1.00	0.00			
Final Sat.:	1805	0	1615				0	0	0				0	1745	136				1805	1900	0			
Capacity Analysis Module:																								
Vol/Sat:	0.06	0.00	0.02				0.00	0.00	0.00				0.00	0.49	0.49				0.01	0.08	0.00			
Crit Moves:	****													****					****					
Green/Cycle:	0.09	0.00	0.09				0.00	0.00	0.00				0.00	0.78	0.78				0.01	0.79	0.00			
Volume/Cap:	0.63	0.00	0.17				0.00	0.00	0.00				0.00	0.63	0.63				0.63	0.10	0.00			
Delay/Veh:	51.2	0.0	42.3				0.0	0.0	0.0				0.0	5.7	5.7				115.4	2.5	0.0			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	51.2	0.0	42.3				0.0	0.0	0.0				0.0	5.7	5.7				115.4	2.5	0.0			
HCM2kAvg:	4	0	1				0	0	0				0	13	13				1	1	0			

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Otay Mesa Rd / Alta Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 1			1 0 0 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	94	523	0	0	0	0	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	0	0	0	0	109	607	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	33	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	109	640	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Volume:	0	0	0	0	0	146	854	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	146	854	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			0.0			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Alta Rd / Paseo De La Puente

Cycle (sec): 100 Critical Vol./Cap. (X): 0.507
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 1.8
Optimal Cycle: 41 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	1 0	1 0	0	0 0	0 0	0	1 0	0 0	1
Volume Module:												
Base Vol:	0	516	6	2	93	0	0	0	0	2	0	4
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	599	7	2	108	0	0	0	0	2	0	5
Added Vol:	0	0	33	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	599	40	2	108	0	0	0	0	2	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	0	784	52	3	141	0	0	0	0	3	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	784	52	3	141	0	0	0	0	3	0	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	784	52	3	141	0	0	0	0	3	0	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.99	0.99	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	0.94	0.06	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1765	118	1805	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.44	0.44	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****		****							****	
Green/Cycle:	0.00	0.88	0.88	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.51	0.51	0.08	0.00	0.00	0.00	0.00	xxxx	0.00	xxxx
Delay/Veh:	0.0	1.6	1.6	106.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.6	1.6	106.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HCM2kAvg:	0	6	6	1	1	0	0	0	0	1	0	2

2014 AM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Alta Rd / North Access Rd

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[18.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	1	0 1	0	0 0	0 0	0	0 0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	509	14	4	82	0	0	0	0	12	0	8
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	590	16	5	95	0	0	0	0	14	0	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	590	16	5	95	0	0	0	0	14	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
PHF Volume:	0	747	21	6	120	0	0	0	0	18	0	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	747	21	6	120	0	0	0	0	18	0	12
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	818	xxxx	xxxxx	xxxx	xxxx	xxxxx	937	xxxx	796
Potent Cap.:	xxxx	xxxx	xxxxx	769	xxxx	xxxxx	xxxx	xxxx	xxxxx	278	xxxx	366
Move Cap.:	xxxx	xxxx	xxxxx	769	xxxx	xxxxx	xxxx	xxxx	xxxxx	277	xxxx	366
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.03
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	307	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	18.0	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			18.0		
ApproachLOS:	*			*			*			C		

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Scenario Report

Scenario:	2014 PM_WP
Command:	2014 PM WP
Volume:	Year 2010 Existing PM Peak
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Year 2014 PM Peak
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Year 2014 Buildout & Longterm

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Trip Generation Report

Forecast for Year 2014 PM Peak

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Pio Pico Ene	24.00	Pio Pico - Ope	0.00	0.50	0	12	12	36.4
1	Pio Pico Ene	658.00	Pio Pico - Con	0.00	0.00	0	0	0	0.0
	Zone 1 Subtotal					0	12	12	36.4
2	EWT Trucks	42.00	EWT Trucks	0.00	0.50	0	21	21	63.6
	Zone 2 Subtotal					0	21	21	63.6
TOTAL						0	33	33	100.0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Trip Distribution Report

Percent Of Trips Default

Zone	To Gates 1	3
1	20.0	80.0
2	100.0	0.0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Turning Movement Report
Year 2014 PM Peak

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 SR-905 / La Media Road													
Base	268	27	74	63	57	118	66	1673	237	57	1704	42	4385
Added	0	0	0	0	0	0	0	0	0	0	10	0	10
Total	268	27	74	63	57	118	66	1673	237	57	1714	42	4395
#2 SR-125 SB Off Ramp / SR-905													
Base	0	0	0	144	0	57	0	278	0	0	1788	0	2267
Added	0	0	0	0	0	0	0	0	0	0	10	0	10
Total	0	0	0	144	0	57	0	278	0	0	1798	0	2277
#3 SR-125 NB On Ramp / SR-905													
Base	0	0	0	0	0	0	136	280	0	0	1796	374	2584
Added	0	0	0	0	0	0	0	0	0	0	10	23	33
Total	0	0	0	0	0	0	136	280	0	0	1806	397	2617
#4 SR-905 (NB) / Otay Mesa Rd													
Base	1168	0	8	0	0	0	0	270	0	0	992	0	2438
Added	0	0	0	0	0	0	0	0	0	0	33	0	33
Total	1168	0	8	0	0	0	0	270	0	0	1025	0	2471
#5 Otay Mesa Rd / Sanyo Rd													
Base	318	0	5	0	0	0	0	144	126	5	657	0	1254
Added	0	0	0	0	0	0	0	0	0	0	33	0	33
Total	318	0	5	0	0	0	0	144	126	5	690	0	1287
#6 Otay Mesa Rd / Enrico Fermi Dr													
Base	114	0	17	0	0	0	0	107	38	21	534	0	831
Added	0	0	0	0	0	0	0	0	0	0	33	0	33
Total	114	0	17	0	0	0	0	107	38	21	567	0	864
#7 Otay Mesa Rd / Alta Rd													
Base	0	0	0	0	0	472	86	0	0	0	0	0	558
Added	0	0	0	0	0	33	0	0	0	0	0	0	33
Total	0	0	0	0	0	505	86	0	0	0	0	0	591
#8 Alta Rd / Paseo De La Puente													
Base	0	80	1	0	466	0	0	0	0	5	0	1	553
Added	0	0	0	0	0	0	0	0	0	33	0	0	33
Total	0	80	1	0	466	0	0	0	0	38	0	1	586
#9 Alta Rd / North Access Rd													
Base	0	67	13	0	443	0	0	0	0	19	0	0	542
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	67	13	0	443	0	0	0	0	19	0	0	542

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Link Volume Report
Year 2014 PM Peak

Volume Type	NB Link In	NB Link Out	NB Link Total	SB Link In	SB Link Out	SB Link Total	EB Link In	EB Link Out	EB Link Total	WB Link In	WB Link Out	WB Link Total	Total Volume
#1 SR-905 / La Media Road													
Base	369	350	719	238	135	372	1975	2090	4066	1803	1810	3612	8770
Added	0	0	0	0	0	0	0	10	10	10	0	10	20
Total	369	350	719	238	135	372	1975	2100	4076	1813	1810	3622	8790
#2 SR-125 SB Off Ramp / SR-905													
Base	0	0	0	201	0	201	278	1844	2123	1788	422	2210	4533
Added	0	0	0	0	0	0	0	10	10	10	0	10	20
Total	0	0	0	201	0	201	278	1854	2133	1798	422	2220	4553
#3 SR-125 NB On Ramp / SR-905													
Base	0	0	0	0	509	509	415	1796	2211	2169	280	2449	5169
Added	0	0	0	0	23	23	0	10	10	33	0	33	66
Total	0	0	0	0	532	532	415	1806	2221	2202	280	2482	5235
#4 SR-905 (NB) / Otay Mesa Rd													
Base	1176	0	1176	0	0	0	270	2160	2430	992	278	1270	4877
Added	0	0	0	0	0	0	0	33	33	33	0	33	66
Total	1176	0	1176	0	0	0	270	2193	2463	1025	278	1303	4943
#5 Otay Mesa Rd / Sanyo Rd													
Base	322	131	454	0	0	0	270	974	1245	661	148	810	2508
Added	0	0	0	0	0	0	0	33	33	33	0	33	66
Total	322	131	454	0	0	0	270	1007	1278	694	148	843	2574
#6 Otay Mesa Rd / Enrico Fermi Dr													
Base	131	59	190	0	0	0	145	647	792	554	124	679	1661
Added	0	0	0	0	0	0	0	33	33	33	0	33	66
Total	131	59	190	0	0	0	145	680	825	587	124	712	1727
#7 Otay Mesa Rd / Alta Rd													
Base	0	0	0	472	86	558	86	472	558	0	0	0	1116
Added	0	0	0	33	0	33	0	33	33	0	0	0	66
Total	0	0	0	505	86	591	86	505	591	0	0	0	1182
#8 Alta Rd / Paseo De La Puente													
Base	81	471	552	466	81	548	0	0	0	6	1	7	1107
Added	0	33	33	0	0	0	0	0	0	33	0	33	66
Total	81	504	585	466	81	548	0	0	0	39	1	40	1173
#9 Alta Rd / North Access Rd													
Base	80	462	542	443	67	510	0	0	0	19	13	31	1083
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	80	462	542	443	67	510	0	0	0	19	13	31	1083

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Intersection Volume Report
Base Volume Alternative

Node	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	SR-905 / La M	268	27	74	63	57	118	66	1673	237	57	1704	42
2	SR-125 SB Off	0	0	0	144	0	57	0	278	0	0	1788	0
3	SR-125 NB On	0	0	0	0	0	0	136	280	0	0	1796	374
4	SR-905 (NB) /	1168	0	8	0	0	0	0	270	0	0	992	0
5	Otay Mesa Rd	318	0	5	0	0	0	0	144	126	5	657	0
6	Otay Mesa Rd	114	0	17	0	0	0	0	107	38	21	534	0
7	Otay Mesa Rd	0	0	0	0	0	472	86	0	0	0	0	0
8	Alta Rd / Pas	0	80	1	0	466	0	0	0	0	5	0	1
9	Alta Rd / Nor	0	67	13	0	443	0	0	0	0	19	0	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Intersection Volume Report
Future Volume Alternative

Node	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	SR-905 / La M	268	27	74	63	57	118	66	1673	237	57	1714	42
2	SR-125 SB Off	0	0	0	144	0	57	0	278	0	0	1798	0
3	SR-125 NB On	0	0	0	0	0	0	136	280	0	0	1806	397
4	SR-905 (NB) /	1168	0	8	0	0	0	0	270	0	0	1025	0
5	Otay Mesa Rd	318	0	5	0	0	0	0	144	126	5	690	0
6	Otay Mesa Rd	114	0	17	0	0	0	0	107	38	21	567	0
7	Otay Mesa Rd	0	0	0	0	0	505	86	0	0	0	0	0
8	Alta Rd / Pas	0	80	1	0	466	0	0	0	0	38	0	1
9	Alta Rd / Nor	0	67	13	0	443	0	0	0	0	19	0	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 SR-905 / La Media Road	C	31.5	0.849	C	31.5	0.852	+ 0.019 D/V
# 2 SR-125 SB Off Ramp / SR-905	A	7.1	0.471	A	7.1	0.473	-0.013 D/V
# 3 SR-125 NB On Ramp / SR-905	B	10.2	0.806	B	10.2	0.810	+ 0.037 D/V
# 4 SR-905 (NB) / Otay Mesa Rd	C	29.3	0.865	C	30.1	0.878	+ 0.845 D/V
# 5 Otay Mesa Rd / Sanyo Rd	B	16.8	0.654	B	17.0	0.681	+ 0.204 D/V
# 6 Otay Mesa Rd / Enrico Fermi Dr	B	13.1	0.530	B	13.0	0.557	-0.095 D/V
# 7 Otay Mesa Rd / Alta Rd	A	0.0	0.000	A	0.0	0.000	+ 0.000 D/V
# 8 Alta Rd / Paseo De La Puente	A	1.3	0.447	A	6.0	0.485	+ 4.677 D/V
# 9 Alta Rd / North Access Rd	C	16.6	0.000	C	16.6	0.000	+ 0.000 D/V

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR-905 / La Media Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.852
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 31.5
Optimal Cycle: 100 Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	1	0	0	1	0		2	0	0	1	0		1	0	3	0	1		1	0	2	1	0	
Volume Module:																								
Base Vol:	231	23	64				54	49	102				57	1442	204				49	1469	36			
Growth Adj:	1.16	1.16	1.16				1.16	1.16	1.16				1.16	1.16	1.16				1.16	1.16	1.16			
Initial Bse:	268	27	74				63	57	118				66	1673	237				57	1704	42			
Added Vol:	0	0	0				0	0	0				0	0	0				0	10	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	268	27	74				63	57	118				66	1673	237				57	1714	42			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	0.88	0.88	0.88				0.88	0.88	0.88				0.88	0.88	0.88				0.88	0.88	0.88			
PHF Volume:	306	30	85				71	65	135				75	1907	270				65	1954	48			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	306	30	85				71	65	135				75	1907	270				65	1954	48			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Final Vol.:	306	30	85				71	65	135				75	1907	270				65	1954	48			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.95	0.89	0.89				0.92	0.90	0.90				0.95	0.91	0.85				0.95	0.91	0.91			
Lanes:	1.00	0.26	0.74				2.00	0.32	0.68				1.00	3.00	1.00				1.00	2.93	0.07			
Final Sat.:	1805	447	1244				3502	554	1154				1805	5187	1615				1805	5043	123			
Capacity Analysis Module:																								
Vol/Sat:	0.17	0.07	0.07				0.02	0.12	0.12				0.04	0.37	0.17				0.04	0.39	0.39			
Crit Moves:	****							****					****							****				
Green/Cycle:	0.20	0.26	0.26				0.08	0.14	0.14				0.05	0.46	0.46				0.04	0.45	0.45			
Volume/Cap:	0.85	0.26	0.26				0.26	0.85	0.85				0.85	0.80	0.36				0.80	0.85	0.85			
Delay/Veh:	56.1	29.8	29.8				44.0	66.7	66.7				97.9	25.2	17.9				88.9	27.5	27.5			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	56.1	29.8	29.8				44.0	66.7	66.7				97.9	25.2	17.9				88.9	27.5	27.5			
HCM2kAvg:	12	3	3				1	9	9				5	19	5				4	21	21			

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 SR-125 SB Off Ramp / SR-905

Cycle (sec): 100 Critical Vol./Cap. (X): 0.473
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 7.1
Optimal Cycle: 39 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 0 0			2 0 0 0 1			0 0 3 0 0			0 0 3 0 0		
Volume Module:												
Base Vol:	0	0	0	124	0	49	0	240	0	0	1541	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	0	0	144	0	57	0	278	0	0	1788	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	144	0	57	0	278	0	0	1798	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	0	155	0	61	0	299	0	0	1931	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	155	0	61	0	299	0	0	1931	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	155	0	61	0	299	0	0	1931	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	1.00	0.91	1.00	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	3502	0	1615	0	5187	0	0	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.04	0.00	0.06	0.00	0.00	0.37	0.00
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.79	0.00	0.00	0.79	0.00
Volume/Cap:	0.00	0.00	0.00	0.47	0.00	0.41	0.00	0.07	0.00	0.00	0.47	0.00
Delay/Veh:	0.0	0.0	0.0	44.1	0.0	44.5	0.0	2.4	0.0	0.0	3.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	44.1	0.0	44.5	0.0	2.4	0.0	0.0	3.7	0.0
HCM2kAvg:	0	0	0	3	0	2	0	1	0	0	7	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR-125 NB On Ramp / SR-905

Cycle (sec): 100 Critical Vol./Cap. (X): 0.810
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	0 0	0	0 0	1 0	2	1 1	0 0	2	0 2
Volume Module:												
Base Vol:	0	0	0	0	0	0	117	241	0	0	1548	322
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	0	0	0	0	0	136	280	0	0	1796	374
Added Vol:	0	0	0	0	0	0	0	0	0	0	10	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	136	280	0	0	1806	397
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	0	0	0	0	0	0	168	346	0	0	2238	491
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	168	346	0	0	2238	491
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	0	0	0	168	346	0	0	2238	491
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.91	0.91	1.00	0.95	0.75
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.00	1.00	0.00	2.00	2.00
Final Sat.:	0	0	0	0	0	0	1805	5187	1729	0	3610	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.00	0.00	0.62	0.17
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.88	0.00	0.00	0.77	0.77
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.08	0.00	0.00	0.81	0.23
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	63.9	0.8	0.0	0.0	9.2	3.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	63.9	0.8	0.0	0.0	9.2	3.4
HCM2kAvg:	0	0	0	0	0	0	8	0	0	0	23	2

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 SR-905 (NB) / Otay Mesa Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.878
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 30.1
Optimal Cycle: 100 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 0 1			0 0 0 0 0			0 0 2 0 0			0 0 2 0 0		
Volume Module:												
Base Vol:	1007	0	7	0	0	0	0	233	0	0	855	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	1168	0	8	0	0	0	0	270	0	0	992	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1168	0	8	0	0	0	0	270	0	0	1025	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	1462	0	10	0	0	0	0	338	0	0	1283	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1462	0	10	0	0	0	0	338	0	0	1283	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1462	0	10	0	0	0	0	338	0	0	1283	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.85	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Final Sat.:	3502	0	1615	0	0	0	0	3610	0	0	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.42	0.00	0.01	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.36	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.48	0.00	0.48	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.40	0.00
Volume/Cap:	0.88	0.00	0.01	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.88	0.00
Delay/Veh:	29.3	0.0	13.9	0.0	0.0	0.0	0.0	19.6	0.0	0.0	33.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.3	0.0	13.9	0.0	0.0	0.0	0.0	19.6	0.0	0.0	33.9	0.0
HCM2kAvg:	24	0	0	0	0	0	0	3	0	0	21	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Otay Mesa Rd / Sanyo Rd

Cycle (sec): 100 Critical Vol./Cap. (X): 0.681
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 17.0
Optimal Cycle: 57 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1! 0	0	0	0 0	0	0	1 1	0	1	0 0
Volume Module:												
Base Vol:	274	0	4	0	0	0	0	124	109	4	566	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	318	0	5	0	0	0	0	144	126	5	657	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	318	0	5	0	0	0	0	144	126	5	690	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	421	0	6	0	0	0	0	191	167	6	913	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	421	0	6	0	0	0	0	191	167	6	913	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	421	0	6	0	0	0	0	191	167	6	913	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.88	0.88	0.95	1.00	1.00
Lanes:	1.97	0.00	0.03	0.00	0.00	0.00	0.00	1.06	0.94	1.00	1.00	0.00
Final Sat.:	3563	0	51	0	0	0	0	1787	1571	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.48	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.68	0.68	0.02	0.71	0.00
Volume/Cap:	0.68	0.00	0.69	0.00	0.00	0.00	0.00	0.16	0.16	0.16	0.68	0.00
Delay/Veh:	41.8	0.0	42.1	0.0	0.0	0.0	0.0	5.6	5.6	49.8	9.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.8	0.0	42.1	0.0	0.0	0.0	0.0	5.6	5.6	49.8	9.7	0.0
HCM2kAvg:	8	0	8	0	0	0	0	2	2	0	16	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Otay Mesa Rd / Enrico Fermi Dr

Cycle (sec): 100 Critical Vol./Cap. (X): 0.557
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 45 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0	0 1	0	0 0	0 0	0	0 0	1 0	1	0 1	0 0
Volume Module:												
Base Vol:	98	0	15	0	0	0	0	92	33	18	460	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	114	0	17	0	0	0	0	107	38	21	534	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	114	0	17	0	0	0	0	107	38	21	567	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	154	0	24	0	0	0	0	145	52	28	769	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	0	24	0	0	0	0	145	52	28	769	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	154	0	24	0	0	0	0	145	52	28	769	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.96	0.96	0.95	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.74	0.26	1.00	1.00	0.00
Final Sat.:	1805	0	1615	0	0	0	0	1348	484	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.11	0.11	0.02	0.40	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.63	0.63	0.09	0.73	0.00
Volume/Cap:	0.56	0.00	0.10	0.00	0.00	0.00	0.00	0.17	0.17	0.17	0.56	0.00
Delay/Veh:	41.7	0.0	36.5	0.0	0.0	0.0	0.0	7.6	7.6	42.3	6.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.7	0.0	36.5	0.0	0.0	0.0	0.0	7.6	7.6	42.3	6.8	0.0
HCM2kAvg:	5	0	1	0	0	0	0	2	2	1	11	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #7 Otay Mesa Rd / Alta Rd

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 1			1 0 0 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	407	74	0	0	0	0	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	0	0	0	0	472	86	0	0	0	0	0
Added Vol:	0	0	0	0	0	33	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	505	86	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
PHF Volume:	0	0	0	0	0	811	138	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	811	138	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			0.0			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Alta Rd / Paseo De La Puente

Cycle (sec): 100 Critical Vol./Cap. (X): 0.485
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 40 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	1 0	1 0	0	0 0	0 0	0 0	1 0	0 0	1
Volume Module:												
Base Vol:	0	69	1	0	402	0	0	0	0	4	0	1
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	80	1	0	466	0	0	0	0	5	0	1
Added Vol:	0	0	0	0	0	0	0	0	0	33	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	80	1	0	466	0	0	0	0	38	0	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
PHF Volume:	0	128	2	0	747	0	0	0	0	60	0	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	128	2	0	747	0	0	0	0	60	0	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	128	2	0	747	0	0	0	0	60	0	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	0.99	0.01	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1869	27	1900	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.07	0.00	0.39	0.00	0.00	0.00	0.00	0.03	0.00	0.00
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.81	0.81	0.00	0.81	0.00	0.00	0.00	0.00	0.07	0.00	0.07
Volume/Cap:	0.00	0.08	0.08	0.00	0.48	0.00	0.00	0.00	0.00	0.48	0.00	0.02
Delay/Veh:	0.0	1.9	1.9	0.0	3.2	0.0	0.0	0.0	0.0	47.8	0.0	43.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	1.9	1.9	0.0	3.2	0.0	0.0	0.0	0.0	47.8	0.0	43.5
HCM2kAvg:	0	1	1	0	7	0	0	0	0	3	0	0

2014 PM PEAK HOUR WITH PROJECT AND EWT TRUCK TRIPS
PIO PICO ENERGY CENTER
OTAY MESA, CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Alta Rd / North Access Rd

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	1	0 0 1	0	0	0 0 0	0	0	1 0 0	0	0
Volume Module:												
Base Vol:	0	58	11	0	382	0	0	0	0	16	0	0
Growth Adj:	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Initial Bse:	0	67	13	0	443	0	0	0	0	19	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	67	13	0	443	0	0	0	0	19	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
PHF Volume:	0	110	21	0	725	0	0	0	0	30	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	110	21	0	725	0	0	0	0	30	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	835	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	340	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	340	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.6		
ApproachLOS:	*			*			*			C		