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SECTION ACRONYMS/ABBREVIATIONS

ACRONYM/ ABBREVIATION	DEFINITION
ACOE	United States Army Corps of Engineers
AFC	Application for Certification
AFY	Acre Feet per Year
BMPs	Best Management Practices
CBO	Chief Building Officer
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDWR	California Division of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEIR	Draft Environmental Impact Report
DPLU	San Diego County Department of Planning and Land Use
EIR	Environmental Impact Report
FPUD	Fallbrook Public Utility District
gpd	Gallons per Day
gpm	Gallons per Minute
HA	Hydrologic Area
HDD	Horizontal Directional Drilling
LORS	Laws, Ordinances, Regulations and Standards
mg/L	Milligrams per Liter
MCL	Maximum Contaminant Level
MS4	Municipal Separate Storm Sewer System
MWD	Metropolitan Water District of Southern California
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
Orange Grove Energy	Orange Grove Energy, L.P.
Project	Subject of this AFC, Orange Grove Project

ACRONYM/ ABBREVIATION	DEFINITION
Project Site	Approximately 8.5 acre parcel to be leased for the power plant Site (a.k.a. "Site")
RMWD	Rainbow Municipal Water District
RO	Reverse Osmosis
RWQCB	Regional Water Quality Control Board
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas and Electric
Site	Approximately 8.5 acre parcel to be leased for the power plant Site (a.k.a. "Site")
SLRMWD	San Luis Rey Municipal Water District
SPCC	Spill Prevention, Control and Countermeasures
SR	State Route
Stormwater Ordinance	County of San Diego Watershed Protection, Stormwater Management and Discharge Control Ordinance
SUSMP	Standard Urban Stormwater Mitigation Plan
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
WDRs	Waste Discharge Requirements

6.5 WATER RESOURCES

6.5.1 Existing Conditions

This section describes the existing water resources in the region and vicinity, and potential impacts of the Project on those resources.

The Site is located on a Very Old (CDMG, 2000a) alluvial fan surface north of State Route (SR) 76. The Site is located on a former citrus orchard with a small upstream watershed. Site facilities have been located and designed to avoid disturbance to drainages. No aspect of the Project will affect any wetlands. The transmission line interconnection and gas pipeline will be installed beneath several small and normally dry drainage crossings using horizontal directional drilling (HDD) so the Project will avoid disturbance to United States Army Corps of Engineers (ACOE) jurisdictional waters. A notification to the California Department of Fish and Game (CDFG) for streambed alteration will be submitted for HDD at drainage crossings. Project disturbances will occur almost exclusively in areas where natural conditions have been disturbed by past activities, so there will be little new ground disturbance. Surface drainage from the power plant will flow to an on site detention basin designed to detain flows from the 100-year storm and to manage storm water runoff in accordance with the County Watershed Protection, Stormwater Management and Discharge Control Ordinance (Stormwater Ordinance).

The Applicant has secured a water supply for the Project, including tertiary-treated reclaim water to supply the Project water demand for cooling.

6.5.1.1 Surface Water

6.5.1.1.1 Hydrology

The Project region is within the jurisdiction of the San Diego (Region 9) Regional Water Quality Control Board (RWQCB), in the San Luis Rey Hydrologic Unit (Figure 6.5-1). The San Luis Rey Hydrologic Unit is an east-west trending drainage area of about 565 square miles that is tributary to the Pacific Ocean. Inflow to the Hydrologic Unit is primarily from surface water runoff (SLRMWD, 2006). Average annual rainfall within the Hydrologic Unit ranges from approximately 11 inches at low elevations near the coast, to more than 45 inches in the highest elevations of the headwaters. The region is typically dry in the spring, summer and fall, with most of the precipitation occurring from December through March.

The major tributary in the San Luis Rey Hydrologic Unit is the San Luis Rey River. In the upper reaches of the Hydrologic Unit, river drainage is controlled by Lake Henshaw, one of the largest man-made water storage reservoirs in the San Diego region. The reservoir aids in the prevention of flooding in the lower reaches of the river. The San Luis Rey Hydrologic Unit is divided into three Hydrologic Areas (HA), with the Project being located in the Monserate HA as shown in Figure 6.5-1. This Project is located within the Pala Hydrologic Subarea (3.21) of the Monserate HA.

Figure 6.5-2 shows the Existing Regional Surface Drainage and Topography in the Project area. Figure 6.5-3 shows the Existing Site Drainage. Results of a preliminary drainage study are provided in Appendix 6.5-A and Drawing C400 in Appendix 2-A. The Site and surrounding lands drain generally southward to culverts crossing SR 76. The Site is located on a former orchard located between two drainages. The orchard is on a gently convex slope that disperses runoff, so there is minimal run-on to the Site footprint. The drainages that occur to the east and west of the Site are normally dry, but can have surface flow in response to precipitation events.

The San Luis Rey River runs south of SR 76. Near the Site, the San Luis Rey River was diverted southward by mining operations and is now confined to a diked channel located approximately 0.5 mile south of SR 76 (Figure 6.5-2). In the Project vicinity, flow in the San Luis Rey River is intermittent, responding to seasonal precipitation. The closest perennial surface waters to the Site are ponds that occur in the river bed where past mining has exposed the water table in the alluvial aquifer (Figure 6.5-2 and 6.5-3). Water quality in these ponds is expected to be generally representative of the local ground water quality described in Section 6.5.1.2. The lower 19 miles of the San Luis Rey River is on the Clean Water Act (CWA) Section 303(d) list of impaired waters, with chloride and total dissolved solids (TDS) being the only constituents identified as exceeding water quality standards. Identified sources of chloride include urban runoff/storm sewer, and unknown point and non-point sources. A wide variety of sources are identified as contributing to high TDS including agriculture, urban development and natural sources. The impaired segment is downstream of the Project area, west of Interstate 15, in more urbanized areas. The segment of the San Luis Rey River that occurs in the Site vicinity is not listed as an impaired segment (RWQCB, 2006).

The Stormwater Ordinance defines the “Rainy Season” as November 11 through April 30. The 85th percentile precipitation for the Project area is between 0.80 and 0.85 inch (San Diego County Department of Public Works, 2003). The 85th percentile precipitation is the 24-hour rainfall total for which 85 percent of 24-hour rainfall totals will be less than this amount. Average monthly rainfalls in inches for the Project area are as follows (RMWD, 2005):

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
2.8	2.55	2.43	1.05	0.23	0.13	0.04	0.08	0.28	0.54	1.46	1.69	13.28

Drawing C400 in Appendix 2-A provides a preliminary drainage area map and hydrology for the Site and surrounding area. Hydrology and hydraulics calculations are provided in Appendix 6.5-A and include isopluvial maps showing the statistical rainfall events for 2-, 5-, 10-, 25-, 50- and 100-year storms.

A map of the 100-year flood zone is provided in Figure 6.5-4. All Project facilities are located outside the 100-year flood zone, except the western portion of the gas pipeline.

6.5.1.1.2 *Jurisdictional Waters and Wetlands*

Detailed mapping has been completed of Waters of the United States subject to Sections 401 and 404 of the CWA, Waters of the State subject to Section 1600 of the California Fish and Game Code, and wetlands. Maps of the survey area and results, descriptions, field data sheets, and other details of this work are comprehensively reported in Appendix 6.5-B. As documented in that report, there are no wetlands within the Project disturbance footprint. Wetlands occur within the San Luis Rey River channel, which will not be disturbed by the Project (see Appendix 6.5-B).

There are no Waters of the United States or Waters of the State within the footprint of construction for the Site facilities, the fresh water pickup station, or the reclaim water pickup station. The transmission line interconnection and gas pipeline will cross a total of six typically dry drainages that are Waters of the United States and Waters of the State (see Appendix 6.5-B), but HDD will be used to avoid surface disturbance in these drainages.

6.5.1.2 Ground Water

Section 6.3 of this Application for Certification (AFC) describes the geology of the Project region. The rock and sediment lithologies described in that section control the occurrence and movement of ground water. As described in that section, plutonic basement rock is exposed at the ground surface over much of the region. The basement rock can have secondary (fracture) permeability but even where it contains water it is not thought to be a significant source (San Luis Rey Municipal Water District, 2006). Very Old (approximately 500,000 to 2 million years old) alluvium overlies the basement rock in the Site vicinity that also does not yield significant ground water (SLRMWD, 2006; Moreland, 1974). With the non-water-bearing rock that underlies it, the Site is not located over any ground water basin.

In the Project area, the San Luis Rey Valley Ground Water Basin (California Department of Water Resources Basin 9-7) is located on the south side of SR 76. This basin is an alluvial aquifer extending along the San Luis Rey river bed, (CDWR, 2003), comprised primarily of alluvial deposits that are younger than 10,000 years. Ground water in the San Luis Rey Valley Ground Water Basin flows westward toward the Pacific Ocean. The ground water basin is divided into several segments (subbasins). In the Project vicinity, the river bed alluvium is within the Pala Subbasin (San Luis Rey Municipal Water District, 2005). The Pala Subbasin occurs over an approximately 7 mile segment of the San Luis Rey River, with the downstream terminus at a narrow constriction in the alluvial aquifer just downstream of Rice Canyon referred to as the Monserate Narrows (Figure 6.5-2).

The alluvial aquifer in the Pala Subbasin ranges from 0 feet in thickness along the basin margins to more than 100 feet (SLRMWD, 2006). The reported well yields for the alluvium in the Subbasin range from 10 to 400 gallons per minute (gpm) (CDWR 1971). In the Site vicinity, the alluvial aquifer of the Pala Subbasin occurs south of SR 76, where aggregate extraction has occurred in the river channel. North of SR 76, where the Site is located, geologic material above the basement rock consists of Very Old alluvium and the subbasin is not present. A hydrogeologic cross section through the Site is provided in Figure 6.5-5. Geotechnical borings

were completed near the Site for the recent construction of the San Diego Gas and Electric (SDG&E) Pala substation (GeoCon, 1994). Borings drilled to as much as 40 feet deep did not encounter ground water. Ground water beneath the Site is expected to occur at an elevation of approximately 330 feet, which is about 50 to 100 feet below the ground surface, depending on the location onsite. Beneath the portion of the pipeline route that is on the flood plain of the San Luis Rey River, ground water can occur at relatively shallow depth.

The closest known ground water wells are located in the alluvial aquifer within and around the mined area south of SR 76. Known ground water wells within a mile of the Site are shown in Figure 6.5-2.

The ground water quality in the Pala Subbasin is characterized by relatively high TDS concentrations. Estimated average TDS concentrations in the Pala Subbasin are reported to be between 600 and 1,200 milligrams per liter (mg/L) (NBS/Lowry 1993). Chloride and sulfate concentrations are typically at or above secondary maximum contaminant levels (MCL). Both chloride and sulfate have a recommended secondary MCL of 250 mg/L, and an upper limit secondary MCL of 500 mg/L.

6.5.1.3 Water Resource Policies and Plans

6.5.1.3.1 Basin Plan

The RWQCB Basin Plan designates beneficial uses of ground water in the Pala Hydrologic Subarea as municipal and domestic supply, agricultural and industrial service supply (San Diego RWQCB, 1994). The ephemeral San Luis Rey River and tributary intermittent streams in the Project region have designated beneficial uses for agricultural supply, industrial service supply, water contact recreation, non-contact water recreation, warm freshwater habitat, rare threatened or endangered species habitat and ground water recharge. In accordance with Section 303 of the CWA, and the Porter-Cologne Water Quality Control Act, the Basin Plan includes water quality objectives and implementation policies to enhance beneficial uses and protect beneficial uses against water quality degradation. Water quality objectives are achieved primarily through the adoption of Waste Discharge Requirements (WDRs) (including National Pollutant Discharge Elimination System [NPDES] permits) and through enforcement orders.

This Project is consistent with the Basin Plan and will be protective to water quality, due, in part, to the following:

- The Project is designed for no discharge of process water.
- Sanitary wastewater discharge will be to a septic system on site that will be designed and constructed to meet County Health and Sanitation Ordinances and other applicable Laws, Ordinances, Regulations and Standards (LORS).
- The Project will implement storm water quality Best Management Practices (BMPs) to protect water quality. The Project will implement a Storm Water Management Plan (SWMP) during construction and operations in accordance with the Stormwater Ordinance. Storm water discharges will meet County performance criteria identified

in Section 6.5.1.3.4. For construction, the Project will also comply with the State General Permit for storm water discharges from construction sites (WQO 99-08-DWQ).

- Storm water runoff from the power plant will be collected and routed to a detention basin. The detention basin will be sized to control runoff from the 100-year storm and will reduce peak discharge rates and provide for gravity settling of pollutants.

6.5.1.3.2 *Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (Resolution No. 75-58)*

The Project is consistent with the use preference hierarchy and water quality protection measures of the Water Quality Control Policy on the use and disposal of Inland Waters Used for Power Plant Cooling (SWRCB 1975). This policy is provided for planning of new power generating facilities to protect beneficial uses of the state's water resources and to keep the consumption of fresh water for power plant cooling to that minimally essential for the welfare of the citizens of the state. The Project will conform to this guidance by using tertiary-treated reclaim water, as further described in Section 6.5.1.4, and by not discharging cooling water or otherwise impacting beneficial uses.

6.5.1.3.3 *California Energy Commission Policy of Fresh Water Use and Waste Water Discharge for Power Plant Cooling*

The California Energy Commission's (CEC) integrated energy policy recognizes State Water Resources Control Board (SWRCB) Resolution 75-58 as reflective of the state's concerns over discharges from power plant cooling, as well as the conservation of fresh water for cooling purposes. The Warren-Alquist Act also encourages conserving water and using alternative sources of water supply. Consistent with Resolution 75-58 and the Warren-Alquist Act, the CEC has adopted a policy of approving the use of fresh water for power plant cooling purposes only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound" (CEC, 2003). The Orange Grove Project will be consistent with the CEC's fresh water use policy through use of tertiary-treated reclaim water, as further described in Section 6.5.1.4.

The CEC's integrated energy policy also requires the use of zero liquid discharge technologies to reduce the use of fresh water and to avoid discharges. The Project includes a reverse osmosis (RO) water treatment system to reclaim and recycle cooling tower blowdown and other non-oily wastewater streams. Even reject water from the RO system will be recycled to the power plant water supply, so that the water treatment system will essentially function as zero discharge technology. A water balance demonstrating the essentially zero discharge performance is provided in Appendix 2-D.

6.5.1.3.4 *County of San Diego Storm Water Plans and Policies*

The Project will comply with the County Standard Urban Stormwater Mitigation Plan (SUSMP) and the County Stormwater Ordinance (San Diego County Code of Regulatory Ordinances Title

6, Division 7, Chapter 8). The County Stormwater Ordinance requires the Applicant to submit a detailed design-level plan and report that includes a combination of source control and structural treatment BMPs that will, at a minimum:

- Control the post-development peak storm water runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion;
- Conserve natural areas;
- Control pollutants of concern from runoff through implementation of site design, source control, and structural treatment BMPs;
- Minimize directly connected impervious areas;
- Protect slopes and channels from eroding;
- Include storm drain stenciling or signage;
- Include properly designed outdoor material and trash storage areas;
- Ensure that post-development runoff does not contain pollutant loads that have not been reduced to the maximum extent practicable.

The Project will comply with these requirements. County of San Diego Department of Planning and Land USE (DPLU) will assure compliance through review of the Project for issuance of a grading permit. Grading plans, storm water control design measures, the final SWMP, employee training programs, and other requirements of the Stormwater Ordinance will be integrated in the Project's storm water quality protection measures. Appendix 6.5-C provides a copy of the Stormwater Ordinance. The hydrology and hydraulics calculations report in Appendix 6.5-A, in combination with the SWMP and the water quality protection measures described in this section, detail how the Project will comply with these requirements. A draft SWMP is provided in Appendix 6.5-D.

6.5.1.4 Water Supply

The Applicant has carefully evaluated available water reducing measures and water supply alternatives as described in Section 5.0, Alternatives Analysis. The Site is located in the northwestern portion of the Rainbow Municipal Water District (RMWD) as shown in Figure 6.5-6. As described in Section 5.0, RMWD is currently not capable of providing a feasible water supply to the Project. Therefore, the Project water supply will be obtained from Fallbrook Public Utility District (FPUD) and will include both reclaimed water and fresh water.

The FPUD operates as a public agency under the Public Utility District Act of the State of California, treating and serving water, recycled water and wastewater within a 28,000-acre service area in northwestern San Diego County and by contract outside the service area. FPUD will build, own and operate the water pickup locations where the water will be obtained.

6.5.1.4.1 Reclaim Water

As described in Section 2.6.2.1, the Applicant has secured a source of recycled water for power plant cooling through an option agreement with the FPUD. Under the option agreement, the Applicant has rights to up to 45 acre-feet per year (AFY) of tertiary-treated reclaim water for 25 years, to accommodate the 25-year operation of the Project. The Project will obtain water from FPUD in an annual amount that meets or exceeds the Project's water demand for the air inlet chiller cooling system. The optioned water quantity is more than adequate to supply these needs considering the maximum permitted hours of plant operation for any given year. The water will be picked up from the FPUD Wastewater Treatment Plant No. 1 located in Fallbrook and trucked to the Site (see Section 2.6.2.1).

Use of the reclaimed water from FPUD will have no adverse impact on water resources and no impact on other water users. The reclaimed water that will be provided to the Project is currently being discharged to the Pacific Ocean via a pipeline connecting the FPUD water reclamation plant and other regional water treatment plants with a submarine outfall located offshore of Oceanside. The reclaimed water quality chemistry profile for 2006 and 2007 is provided in Table 6.5-1.

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Table 6.5-1– FPU D Reclaimed Water Quality Chemistry Profile For 2006 And 2007

Month	TDS (mg/L)	G&O (mg/L)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Nitrate (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrite (mg/L)	Fluoride (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total Phosphorus (mg/L)	MBAS (MG/l)	Sodium Adsorption Ratio
Jan	768	<5.0	0.261	0.027	0.021	79.2	33.9	14.3	132	24.8	154	237	5.7	0.23	6.8	8.2	0.82	0.07	
Feb	830	<5.0	0.346	0.114	0.062	82.3	32.1	15	144	13.4	166	227	1.7	0.25	13.9	14.6	0.49	0.06	
Mar	822	<5.0	0.288	0.102	0.032	70.1	31.9	13.5	135	18.5	172	252	2.9	0.2	8.68	9.24	0.45	0.15	
Apr	786	<5.0	0.365	0.277	0.038	62.1	32	14.2	132	18.4	178	223	2.6	0.26	9.7	9.8	1.2	0.1	
May	980	<5.0	0.42	0.048	0.053	73.8	32	13.6	145	10.7	177	233	1.3	0.35	12.4	17.5	1.04	0.17	
Jun	610	<5.0	0.334	0.071	0.037	66.2	28.9	13.5	136	17.3	160	232	6.9	0.3	9.3	11.5	<.02	0.08	
Jul	850	<5.0	0.415	0.033	0.046	76.5	32	16.9	156	9.5	179	255	3.5	0.3	13.7	13.8	1.58	0.04	
Aug	860	<5.0	0.354	0.049	0.033	83.6	30.9	16.3	142	10.5	194	283	6.1	0.31	12.1	14.2	1.96	0.04	
Sep	850	<5.0	0.365	0.058	0.033	60.6	27.7	15.5	134	15.4	165	227	3.8	0.27	9.1	11.8	2.22	0.05	
Oct	840	<5.0	0.377	0.037	0.04	66.2	28.5	15.3	138	11.8	181	240	2.9	0.27	11.5	13.6	2.07	0.05	
Nov	830	8	0.44	0.063	0.03	71.2	31.9	16.6	142	9.0	161	241	2.4	0.26	11.2	18.8	2.09	0.06	
Dec	490	<5.0	0.323	0.091	0.028	79.6	30.7	18.3	154	1.9	97	229	<.04	0.28	14.9	18.5		<.02	
Avg.	793	<5.0	0.357	0.081	0.038	72.6	31.0	15.3	141	13.4	165	240	3.6	0.27	11.1	13.5	1.39	0.08	
Jan	860	<5.0	0.330	0.279	0.043	69.6	32.5	15.8	147	20.9	172	251	1.7	0.41	8.5	9.6	2.17	0.08	
Feb	780	<5.0	0.340	0.180	0.038	72.9	30.7	16.8	155	9.3	162	222	1.5	0.23	17.2	18.2	0.02	0.1	
Mar	720	<5.0	0.294	0.056	0.037	68.4	28.7	15.6	138	2.1	157	224	0.56	0.35	15.9	16	0.83	0.07	
Apr	710	<5.0	0.344	0.060	0.017	57.7	24.1	13.1	123	35.8	145	207	2.8	0.16	10.9	15.4	1.2	0.05	
May	740	<5.0	0.335	0.045	0.027	65.8	29.8	16.2	135	54	159	208	1.3	0.25	4.5	8.5	3.45	0.09	
Jun	960	<5.0	0.365	0.065	0.028	65.1	24.3	15.1	136	26.1	151	204	5.9	0.2	8.9	11.9	0.92	0.07	
Jul	720	<5.0	0.360	0.023	0.04	66	26	18	130	5.6	150	210	2.2	0.49	7.2	11	3.6	0.11	
Aug	720	<5.0	0.340	0.030	0.029	59	24	16	120	3.2	140	230	2.0	0.39	9.7	15	3.5	0.11	3.4
Sep	730	<0.9	0.360	0.039	0.037	55	23	16	120	2.3	160	220	1.1	0.48	12	20	1.4	0.25	
Oct	670	<0.95	0.410	0.066	0.033	68	27	19	140	4.7	150	190	1.0	0.43	9.5	14	1.3	0.09	

Month	TDS (mg/L)	G&O (mg/L)	Boron (mg/L)	Iron (mg/L)	Manganese (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Nitrate (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrite (mg/L)	Fluoride (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total Phosphorus (mg/L)	MBAS (MG/l)	Sodium Adsorption Ratio
Nov	680	<1.1	0.350	0.047	0.031	60	25	17	120	7.9	140	180	1.4	0.29	10	12	3.2	0.11	
Dec	680	<1.1	0.350	0.040	0.035	63	25	16	130	6.5	150	200	1.8	0.26	8.6	11	2.8	0.07	
Avg.	746	<5.0	0.348	0.078	0.033	64.2	26.7	16.2	133	14.9	153	212	1.9	0.33	10.2	13.6	2.03	0.1	
Jan	670	<1.2	0.400	0.035	0.018	60	25	17	130	8.8	160	180	0.99	0.35	8.1	3.4	2.3	0.13	
Feb	760	1.2	0.400	0.075	0.029	65	27	16	130	4.3	160	220	1.0	0.60	14	17	2.2	0.21	
Mar	810	<1.2	0.380	0.047	0.023	70	30	18	140	3.9	160	240	<1.8	0.36	9.7	17	2.9	0.1	
Apr	690	<1.2	0.430	0.026	0.025	60	25	17	140	5.4	170	200	1.3	0.3	10	12	1.3	0.19	
May	780	<1.2	0.440	0.034	0.019	69	27	19	140	5.1	160	230	3.1	0.35	10	11	0.64	0.09	
Jun	760	1.3	0.350	0.054	0.016	68	26	15	110	7.4	150	240	<.15	0.62	3.6	3.9	3	0.09	
Jul	830	<1.1	0.360	0.031	0.012	68	26	17	130	9.2	150	200	0.64	0.45	5.2	7.8	4.6	0.14	
Aug	810	<1.2	0.410	0.041	0.025	64	26	17	140	12	150	170	<.15	0.29	3.1	4.5	4.1	0.13	
Sep	820	1.2	0.370	0.028	0.03	65	26	17	130	13	150	220	0.81	0.43	0.77	3.1	4.8	0.13	
Oct	830	19	0.380	0.041	0.028	63	25	17	120	15	160	180	<.15	0.45	0.34	2.2	5.3	0.11	
Avg.	776	<5.0	0.392	0.041	0.023	65.2	26.3	17.0	131	8.4	157	208	1.3	0.42	6.5	8.2	3.11	0.13	

6.5.1.4.2 Fresh Water

The Applicant will execute an option agreement with FPUD to provide fresh water for the 25-year operation of the Project. Appendix 6.5-E provides a water chemistry profile for the FPUD fresh water supply. The FPUD does not use ground water. FPUD depends entirely on imported water purchased wholesale through the San Diego County Water Authority (SDCWA). The SDCWA, in turn, is a member of the Metropolitan Water District of Southern California (MWD), which obtains most of its water from the California and Colorado rivers' aqueduct systems (SDCWA, 2008).

6.5.1.4.3 Sanitary Sewer

The Site area is rural and there is no available sanitary sewer system.

6.5.2 Impacts

Significance criteria were determined based on California Environmental Quality Act (CEQA) Guidelines, Appendix G, Environmental Checklist Form and on performance standards or thresholds adopted by responsible agencies. An impact may be considered significant if the project results in:

- Violation of water quality standards or RWQCB Waste Discharge Requirements.
- Substantial alteration of existing drainage patterns, including alterations that would result in substantial flooding, erosion or siltation on site or off site.
- Creation of or contribution to runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional polluted runoff.
- Otherwise substantial degradation of water quality.
- Substantial depletion of ground water supplies or substantial interference with ground water recharge, such that there would be a net deficit in aquifer volume or lowering of the local ground water table.
- Placement of housing or structures within the 100-year flood zone, or exposure of people or structures to significant loss or injury involving flooding.

6.5.2.1 Construction Impacts

6.5.2.1.1 Water Use and Wastewater Management

The construction contractor will be responsible for water supply during construction. Water will be trucked to the Site. The primary construction water needs include water for dust control, moisture conditioning for compaction, and hydraulic testing of fire and other water systems. The peak and average water use during construction are estimated at approximately 5,000 gallons per day (gpd) and 500 gpd, respectively. The contractor will be required to obtain the construction water supply from an existing permitted source such as purchased from RMWD and loaded at an

existing hydrant as is customary practice for construction projects. Therefore, there will be no new pumping, diversion, or other potential depletion of ground water supplies. Furthermore, this use will be short term and will occur only for the term of Project construction. Considering these factors, the construction water use impact will be less than significant.

There will be no wastewater discharges. During construction, wastewater generated will include sanitary wastewater and hydrotesting wastewater. Management of these wastewater streams is addressed in Section 6.14, Waste Management. Sanitary waste will be approximately 40 gpd and will be collected in portable chemical toilets and removed from the Site by a licensed hauler on a weekly basis. Hydrotesting will produce batches of water up to 25,000 gallons. This water will be sampled and used on site provided that the water quality is acceptable, or shipped to a licensed wastewater treatment facility if needed.

6.5.2.1.2 Surface Water

Existing and proposed flood control facilities in the Site area are described in Appendix 6.5-A. The Site is situated on a gentle, relatively featureless slope that has a small upgradient watershed and dispersing sheet flow. Because of these conditions and Project storm water controls, the Project will not substantially alter existing drainage patterns. Furthermore, Site grading and drainage control systems are designed to release runoff to the same areas where runoff would flow under existing conditions, so there will be minimal impact on flow volumes downstream. A detention basin designed for the 100-year storm is provided in the Site design to control peak flow from the Site. Site grading and drainage plans and related hydrology parameters are provided in the design drawings in Appendix 2-A, with details provided in the hydrology and hydraulics calculations report in Appendix 6.5-A. The Project will be constructed in compliance with County SUSMP requirements for controlling peak storm water runoff rates and velocities to maintain or reduce pre-development downstream erosion (see Appendix 6.5-A). These factors, and other County storm water performance criteria identified in Section 6.5.1.3.4 and in the Stormwater Ordinance (Appendix 6.5-C), will limit impacts to existing drainage patterns to a level that is less than significant.

The Project will not have structures located in the 100-year flood zone and will not result in personal or property flood risk. All Project facilities are located outside the 100-year flood zone, with the exception of the western portion of the gas pipeline. Construction for this portion of the gas pipeline is not expected to be affected by flooding because pipeline construction will occur on ground that is elevated compared to the river channel. The extreme flood conditions required to inundate the construction area occur infrequently. Construction within the 100-year flood zone will not occur if flooding is present or imminent. When construction is complete, the pipeline will be underground and will not be affected by flooding or affect flood flows. The portion of the pipeline that is proximal to the river channel is protected by a continuous engineered riprap channel bank. Considering these factors, the Project impacts related to construction within the 100-year flood zone will be less than significant.

Prior to construction, a Notice of Intent (NOI) will be submitted to the SWRCB to comply with the State General Permit for storm water discharges from construction activities (WQO 99-08-DWQ). Construction will occur under a Storm Water Pollution Prevention Plan (SWPPP)

implementing BMPs that will be protective to water quality. A copy of the NOI is provided in Appendix 6.5-F.

General Site and finish grading will establish a working surface for construction and plant operating areas, providing positive drainage from buildings and structures. The area inside the security fence will be surfaced with gravel that will minimize the impervious area, thereby reducing storm water runoff and promoting infiltration. Hazardous material storage and use areas will be constructed with drainage contained as required by the SWPPP and the Stormwater Ordinance.

The sound walls will be designed so that stormwater runoff is directed underneath the sound walls through the pervious crushed rock which is utilized as the Site's top of grade surface layer. The runoff will pass through a 6 inch porous layer of Class II Aggregate rock with a surface elevation of approx. 420.25 feet. The bottom face of the sound walls will rest on the top of the structural pier foundations at an elevation of 420.75 feet. The pier foundations will be spanned approximately every 20 feet apart and approximately 3 to 6 inches above the top of grade. The crushed rock surface is graded to provide slope towards the Site's six grate inlets. Thus, stormwater will be routed underneath the sound wall structure to the inlets and therefore, will have no impact to the sites stormwater management system.

There will be no discharges to water during construction except as authorized under the State General NPDES permit. During construction, temporary berms, surface grading, silt fences, sandbags, surface stabilizers (e.g., jute netting), and other BMPs will be implemented as needed to control erosion and reduce or prevent pollutants from entering the storm water system. The BMPs will include an erosion control plan and other measures that will be implemented in accordance with the Stormwater Ordinance and the State General NPDES permit for construction activity on the Site and Project linear corridors. These measures will address soil moving, equipment laydown, material handling and other relevant activities that occur during the construction period. Conformance with the State General NPDES permit and Stormwater Ordinance and SUSMP requirements will assure that runoff during construction does not substantially alter erosion or siltation or violate water quality standards. These regulatory programs are established for this purpose. Because construction will comply with the State General NPDES Permit and County requirements to not degrade water or violate water quality standards, the impact to surface water quality will be less than significant.

The State General NPDES Permit for storm water discharges from construction sites is provided in Appendix 6.5-F. Project construction will occur in compliance with this permit. The permit (Appendix 6.5-F) specifies the discharge prohibitions, receiving water limitations, special provisions, SWPPP requirements, standard provisions, monitoring and other controls required under the permit to assure that water quality is protected. The SWPPP is not required as part of the application for the State General NPDES Permit and is not required to be submitted to any jurisdictional agency unless requested, but it is required to be (1) in place prior to construction; (2) implemented during construction; and (3) available for inspection at the construction site. The final SWPPP will be provided to the CEC through the Chief Building Officer (CBO) and the CEC compliance officer prior to construction. The hydrology and hydraulics calculations in

Appendix 6.5-A, the Stormwater Ordinance in Appendix 6.5-C, the Draft SWMP in Appendix 6.5-D, the State General Permit in Appendix 6.5-F, and the Project design drawings in Appendix 2-A form the roadmap for the SWPPP and related water quality protection measures.

Construction of the transmission line interconnection and the gas pipeline will include HDD to avoid disturbance to a total of 6 normally dry drainages so there will be no disturbance to Waters of the United States (see Appendix 6.5-B). Construction at these locations will include excavation of bore and receiving pits at each run, boring and casing installation beneath the drainages, and construction of pull-boxes at the ends of each run. BMPs for storm water quality protection will be in place. Considering these factors, the impact to surface water will be less than significant. The linear facility construction will not require a permit from the ACOE.

Access driveways to the Site have been designed to avoid impact to surface waters. The southern driveway will not cross any concentrated surface water flow path. The access driveway from Pala Del Norte Road will be designed with a free-spanning bridge so as not to impact the channel of the drainage west of the Site. The bridge will be designed so that footings are outside of the bank limits. There will be no excavation, grading or structures within the channel banks. Therefore, the bridge will not require permits from ACOE or CDFG.

Project construction will not affect any wetlands. Wetlands occur adjacent to the gas pipeline where the pipeline will be constructed in an unpaved road between two former dairy farms. A silt fence will be installed along the edge of the road during pipeline work in this area, and there will be a full-time monitor in this area during construction to assure that there is no disturbance to the wetlands, as further described in Section 6.6, Biological Resources.

6.5.2.1.3 Ground water

Ground water will not be used for construction and will not be impacted by construction. Hazardous materials used during construction will be managed in accordance with LORS to prevent the potential for impacts to ground water. No adverse impact to ground water is expected.

Where the gas pipeline is located within the San Luis Rey River flood plain, the trenching depth will be on the order of 4 feet. Ground water is not expected to be encountered at this shallow depth. If ground water pumping is required, the water will be managed by infiltration locally with BMPs under the SWMP. Geotechnical investigations will be completed prior to construction to determine the actual depth to ground water along this portion of the route. No adverse impact to ground water resources is expected.

6.5.2.2 Operations Impacts

6.5.2.2.1 Water Use and Wastewater Management

A water mass balance diagram is provided in Appendix 2-D. Project operations water use is described in Section 2.6.1, including a breakdown of expected average and maximum daily and annual water demand. As described in that section, the Expected Use Case for water is 21.1

AFY for fresh water and 12.1 AFY for reclaim water. The maximum design fresh and reclaim water use rates are 62 AFY and 38.7 AFY, respectively.

A copy of the water option agreement for the FPUD reclaim water supply is provided in Appendix 6.5-G, and the option for the fresh water will be executed in upcoming weeks and provided to CEC as soon as it is available. The FPUD water sources were selected as the Project's sources of water for cooling because they are the closest reliable sources of water that will fully meet CEC policy for power plant cooling water described in Section 6.5.1.3.3.

FPUD obtains 100 percent of its water from the SDCWA. The use of FPUD fresh water will not result in new pumping or diversion or other potential depletion of ground water supplies. The FPUD has indicated that they have the excess capacity within existing infrastructure to supply the Project. No impact to other water users is expected. The option agreement for fresh water will include a provision for FPUD to replace fresh water delivery to the Project with reclaim water delivery, if needed due to potential future curtailments of FPUD water deliveries. Therefore, no impact on other users will occur.

The water supply proposed for the Project will not affect the physical or chemical conditions of any existing water supply. With the exception of sanitary waste managed in an on site septic tank and leach field, there will be no wastewater discharges. The sanitary system design basis is provided in Appendix 6.5-H. The Project includes a RO water treatment system to reclaim and recycle cooling tower blowdown and other non-oily wastewater streams. Even reject water from the RO system will be recycled to the power plant water supply, so that the water treatment system will essentially function as zero discharge technology. Oily wastewater not directed to the RO will be a very limited stream estimated to be on the order of a few hundred gallons per month. This water will be shipped to a licensed wastewater treatment facility as described in Section 6.14, Waste Management.

There is no public or private entity accepting a wastewater discharge from the Orange Grove Project. Therefore 20 California Code of Regulations (CCR) Chapter 5, Appendix B, Section (g)(14)(c)(viii) is not applicable to this Project.

6.5.2.2.2 *Surface Water*

As described in Section 6.5.2.1.2, the Project will not substantially alter existing drainage patterns. The drainage area contributing run-on to the Site is small. The sheet flow from this small area will be diverted to minimize run-on to the Site. Final Site grades are designed to direct drainage away from equipment and buildings. Areas inside the security fence not covered with structures, equipment or paving will be surfaced with gravel to reduce peak runoff and increase infiltration. Site driveways and the plant area are designed with the minimum practical paved areas to minimize impervious surfaces. Site driveways will be gravel-surfaced except for concrete aprons to transition to paved surfaces. Storm water runoff detention is provided for runoff from the Site. These design features are included in the design drawings in Appendix 2-A and reflect the "Low Impact Development" BMPs required by the Stormwater Ordinance. Construction storm water BMPs will be maintained at other surfaces disturbed during construction until the surface is stabilized.

The Project will operate under the County Municipal Separate Storm Sewer System (MS4) permit for storm water discharges. Site drainage will be conveyed to an onsite detention basin sized to detain runoff from the 100-year storm event. The detention basin will be unlined and planted with grass to allow storm water infiltration and evapotranspiration to the extent dictated by Site soil permeability. BMPs will be implemented during operations to minimize storm water contact with potential pollutants and to reduce or prevent pollutants from affecting retained storm water. The BMPs will include an erosion control plan and other measures that will be implemented in accordance with the MS4 permit through adherence to the Stormwater Ordinance. Areas around lubricated equipment and hazardous material storage and use areas will be constructed with contained drainage. Hazardous materials will be managed in accordance with LORS, including operating under a CCR Title 19 hazardous materials business plan and a 40 Code of Federal Regulations (CFR) Part 112 Spill Prevention, Control and Countermeasures (SPCC) Plan. The Project is designed with zero discharge of process water. Water treatment waste streams including cooling tower blow-down and other non-oily process wastewater will be recycled via the RO system. Oily wastewater streams will be negligible, estimated at a few hundred gallons per month, and will be trucked offsite to a licensed water treatment facility (see Section 6.14, Waste Management). The Stormwater Ordinance is designed to implement the County's MS4 permit which, in turn, is designed to reduce the discharge of potential pollutants to the Maximum Extent Practical and to ensure compliance with applicable water quality standards (RWQCB, 2007). The Stormwater Ordinance is incorporated by reference and provided in Appendix 6.5-C. Considering these factors, storm water runoff during operations will not substantially alter erosion, siltation or violate water quality standards. Therefore, Project operations impacts to surface water drainage patterns and surface water quality will be less than significant.

The gas pipeline and transmission line interconnection will be underground and will not have the potential to affect surface water once construction is complete and disturbances are stabilized under the construction SWPPP and SWMP. Where the gas pipeline occurs within the 100-year flood zone, it will be below the ground surface and isolation valves and the meter station exposed on the ground surface will be designed such that they would not be adversely impacted in the event that they are inundated by flooding. The exposed features of the gas pipeline will not measurably affect flood hydrology.

6.5.2.2.3 Ground Water

Ground water will not be impacted by Project operations and maintenance. Ground water will not be used. Depth to ground water beneath the Site is estimated at 50 to 100 feet, with depth varying in relation to ground surface elevation. Hazardous materials used during operations will be managed in accordance with LORS to prevent the potential for impacts to ground water. No adverse impact to ground water is expected.

6.5.2.3 Cumulative Impacts

6.5.2.3.1 *Water Supply*

The Project's use of reclaim water will not have cumulative impacts. As described in Section 6.5.2.2.1, the reclaim water that will be used is currently being discharged to the ocean.

Other projects with the potential for cumulative impacts are identified in Section 6.1. Water supply for these projects and the related potential for cumulative impacts is described in the following paragraphs.

Pala Casino Expansion Project

The Pala Band of Mission Indians currently obtains their water supply from ground water (Volturno, 2007). Pursuant to the San Luis Rey Indian Water Settlement Act, future water supply for the Reservation will also be obtained from an allocation of water saved from lining portions of canals in the Imperial Valley in southeastern California. Because the Orange Grove Project will not use water from either of these sources, there is no potential for the Orange Grove Project to have cumulative water supply impacts with the Pala casino expansion project.

Pauma Casino Expansion Project

The Pauma Band of Mission Indians obtains their water supply from ground water. Pursuant to the San Luis Rey Indian Water Settlement Act, future water supply for the Reservation will also be obtained from an allocation of water saved from lining portions of canals in the Imperial Valley in southeastern California. Because the Project will not use water from either of these sources, there is no potential for it to have cumulative water supply impacts with the Pauma casino expansion project.

Gregory Canyon Landfill Expansion

The Gregory Canyon Landfill water supply will be reclaimed water obtained from the Olivenhain Municipal Water District, and ground water obtained from the landfill site (GeoLogic Associates, 2007). The reclaimed water will be trucked approximately 28 miles from the source to the landfill site. The Orange Grove Project does not have the potential for cumulative water supply impacts with either of these water sources.

Rosemary's Mountain Quarry

The Rosemary's Mountain Quarry will obtain its water supply from ground water (Brian F. Mooney Associates, 1997). Because the Orange Grove Project will not use ground water, there is no potential for the Orange Grove Project to have cumulative water supply impacts with the quarry.

Warner Ranch Multiple Use Development Project

The Warner Ranch Development Draft Environmental Impact Report (DEIR) is not yet available. The project does not have a committed source of water (Powers, 2008) Therefore, the Orange Grove Project does not have a foreseeable potential for cumulative water supply impacts with the Warner Ranch Development.

Pala Band of Mission Indians Cell Tower Generator

The Cell Tower project is not a water consuming project and, therefore, does not have the potential for cumulative water supply impacts.

Meadowood Residential Development

The Meadowood development DEIR is not yet available. The water supply for this project is undetermined (Stevenson, 2008). The Orange Grove Project does not have a foreseeable potential for cumulative water supply impacts with the Meadowood Development.

Campus Park West Multiple Use Development

The Campus Park West Multiple Use Development is in the early planning stages and an Environmental Impact Report (EIR) has not been started. No water supply has been identified (Stevenson, 2008). The Orange Grove Project does not have a foreseeable potential for cumulative water supply impacts with Campus Park West.

Campus Park (Passerelle) Multiple Use Development

The Campus Park (Passerelle) Multiple Use Development DEIR is not yet available. Campus Park does not have a committed water source (Stevenson, 2008)The Orange Grove Project does not have a foreseeable potential for cumulative water supply impacts with Campus Park (Passerelle).

Fallbrook Renewable Energy Facility

The Fallbrook Renewable Energy Facility, if constructed as proposed, would fall within the jurisdiction of the CEC. To date, no application has been filed with CEC. Considering the early planning stage of this Project, and the absence of a CEC filing, there is no evidence that the Orange Grove Project could have a cumulative water supply impact with Fallbrook Renewable Energy Facility.

Palomar Community College – North Education Center

The Palomar Community College- North Education Center will obtain its water supply from RMWD. The Orange Grove Project does not have a foreseeable potential for cumulative water supply impacts with Palomar Community College.

Future FPUD Users

Over time, there may be projects placing additional demands on FPUD water supply, or periods of water delivery curtailments. However, the Expected Use Case water demand rates for the project are low and no impact to other water users is expected. The option agreement for fresh water will include a provision for FPUD to replace fresh water delivery to the Project with reclaim water delivery, if needed due to potential future curtailments of FPUD water deliveries.

6.5.2.3.2 *Surface Water*

The Project will have minimal impact on surface water runoff. Construction water quality protection measures and the short-term nature of construction activities ensure that cumulative surface water impacts during construction are less than significant.

Pursuant to County storm water performance requirements, the Project will control the post-development peak storm water runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion. In addition, runoff from the Site will be diverted to a detention basin designed to detain the 100-year storm. Compliance with LORS for hazardous materials handling and storm water management during operations will prevent violation of water standards in runoff from the Site. Considering these factors, Project impacts will be limited to the Site and immediate watershed. The Project will not change downstream erosion, and there are no other foreseeable actions that include changes to surface water drainage or the introduction of potential pollutants within the immediate Site watershed (i.e., contributing to the same San Luis Rey River tributaries that the Site contributes to). Other projects identified in Section 6.1 are all outside the immediate Site watershed area. Other projects with the potential for surface water quality impacts will also be required to comply with the Stormwater Ordinance and other applicable LORS. Considering these factors, there will be no significant cumulative impact on surface water resources.

6.5.2.3.3 *Ground Water*

The Project will not impact ground water. Therefore, there will be no cumulative impacts to ground water.

6.5.2.4 **Design Features that Limit Impacts**

The following design and operational features of the Project avoid potentially significant environmental impacts:

- The Project has been designed to avoid disturbance to surface water drainages.
- The Site driveway from Pala Del Norte Road will be constructed as a free-span bridge across the small drainage path that occurs just west of the Site.
- Construction work will not occur where the gas pipeline is located within the 100-year flood zone if flooding is occurring or imminent.
- The Project is designed to locate facilities in previously disturbed areas to the maximum extent practical, to minimize new ground disturbance. No natural ground surface will be disturbed, except for along the gas pipeline between the existing Pala substation and SR 76, where new ground disturbance cannot be avoided.
- The Project is designed with no process water discharge. Cooling tower blow-down, water treatment waste water, and other non-oily process wastewater will be recycled via an RO system to minimize Project water consumption.

- BMPs for protection of water quality will be implemented in accordance with the State General NPDES Permit for storm water discharges from construction sites, and in accordance with County SUSMP and Stormwater Ordinance requirements for construction and operations.
- Site drainage features will be designed for the 50-year storm with runoff control for the 100-year storm in accordance with County requirements.
- Runoff from the Site will be routed to a detention basin sized to detain the 100-year storm.
- Areas in the security fence that are not occupied by buildings or paving will be surfaced with gravel to reduce peak runoff and increase infiltration. Other surfaces disturbed by construction will also be stabilized. BMPs for erosion and sediment control during construction will be maintained in disturbed areas until the surface is stabilized.
- The Project will comply with applicable LORS related to water resources.

6.5.3 Mitigation Measures

Based on the above analysis of impacts and the design and operational features that have been incorporated into the Project, no mitigation measures are required.

6.5.4 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts to water resources from construction or operation of the Project.

6.5.5 Laws, Ordinances, Regulations and Standards

LORS related to water resources that are relevant to the Project are listed in Table 6.5-2, along with the names of the administering agencies and the Project approach to compliance. The Project will comply with applicable LORS during construction and operation.

A schedule for permits required for water resources is provided in Section 2.15.

Project construction will require an NPDES permit for storm water discharges. The Applicant will submit an NOI to be covered under the State General NPDES permit for storm water discharges from construction sites. To date, no interaction has occurred with the RWQCB related to this permit. The NOI will be submitted prior to construction startup. A copy of the NOI is included in Appendix 6.5-F. In addition, storm water discharges during construction will be required to comply with the Stormwater Ordinance, which implements requirements of the County's MS4 permit from the RWQCB (Order No. R9-2007-0001). The County will enforce compliance with the requirements of their MS4 permit through their review of the Site grading and drainage plan (Appendix 2-A) and SWMP (Appendix 6.5-D) and the Storm Water Ordinance (Appendix 6.5-C).

Construction of the transmission line interconnection and gas pipeline using HDD beneath drainage paths will likely require a Streambed Alteration Agreement from CDFG. An application for this permit is being prepared and will be submitted in upcoming weeks. The Applicant's consultants have been coordinating with CDFG in preparation for filing.

No other permits are required for the Project that are directly related to water resources. The FPUD Board of Directors approved FPUD's execution of the water option in Appendix 6.5-G, allowing reclaim water to be sold to Orange Grove Energy, L.P., and the Board of Directors will need to approve the option agreement for fresh water as well. No other permit or approval is required for water supply.

The gas line construction will cross an SDCWA right-of-way that contains two aqueduct pipes. Construction through this area will require an encroachment permit from SDCWA. The Applicant is coordinating with SDCWA in preparation for submittal of an application. Approval of the application can occur promptly following CEC's completion of a CEQA record.

If not for the exclusive authority of the CEC to certify power plant sites and related facilities, a permit from County Department of Health would be required for the sanitary septic system. The septic system will be required to comply with the County Plumbing Code and County septic tank ordinance. The preliminary plan for the septic system is provided in Drawing C200 in Appendix 2-A. A design report is provided in Appendix 6.5-H.

The Project will not require an NPDES permit for operations. Storm water discharges during operations will be compliant with the County's MS4 permit. Therefore, no storm water discharge permit is required.

Agency contacts related to water resource are provided in Table 6.5-3.

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Table 6.5-2 – Summary of Water Resources LORS and Compliance

JURIS-DICTION	AUTHORITY	AGENCY ¹	REQUIREMENTS	COMPLIANCE	AFC SECTIONS AND PAGES
Federal	CWA §404, 33 USC §1344; 33 CFR Parts 320-330.	ACOE	Institutes programs and requirements for dredge or fill in Waters of the US	The Project is designed to use HDD to install piping, transmission and gas lines beneath drainages to avoid dredging or filling Waters of the US.	6.5.1.1.2, 6.5.2.1.2, 6.5.5 Pages 6.5-3, 6.5-11 to 6.5-13, 6.5-19 to 6.5-25
	CWA §402, 33 USC §1342; 40 CFR Parts 122-136.	RWQCB with oversight by SWRCB and EPA Region IX.	NPDES permit for storm water discharge.	The Project will file an NOI to comply with the State General NPDES permit for storm water discharges from construction sites, and will prepare a SWPPP. During operations, the power plant will discharge storm water under the County MS4 permit identified below.	6.5.1.3.1, 6.5.2.1.2, 6.5.2.2.2, 6.5.5 Pages 6.5-4 to 6.5-5, 6.5-11 to 6.5-13, 6.5-14 to 6.5-15, 6.5-19 to 6.5-25
	CWA §401, 33 USC §1341	RWQCB with oversight by SWRCB and EPA Region IX.	Requires Certification that dredge or fill to Waters of the US will comply with water quality standards.	The Project is designed to use HDD to install piping, transmission and gas lines beneath drainages to avoid dredging or filling Waters of the US.	6.5.1.1.2, 6.5.5 Pages 6.5-3, 6.5-19 to 6.5-25
	CWA § 311; 33 USC §1321; 40 CFR Parts 110, 112, 116, 117.	RWQCB with EPA Region IX oversight.	SPCC Plan for prevention, control and countermeasures, and reporting of oil or hazardous substance discharges.	The Project is designed to have no discharge of oil or hazardous substances. In the event of an accidental release, reporting will occur in accordance with applicable federal and state requirements and corrective measures will be implemented, as appropriate. An SPCC and Hazardous Materials Business Plan will be developed for the Project that will address these requirements.	6.5.2.1.3, 6.5.2.2.2, 6.5.2.2.3, 6.5.5 Pages 6.5-13 to 6.5-14, 6.5-14 to 6.5-15, 6.5-19 to 6.5-25

¹ Pursuant to 20 CCR Chapter 5 Appendix B Section (i)(1)(B): Each agency with jurisdiction to issue applicable permits and approvals or to enforce identified LORS and adopted local, regional and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the CEC to certify sites and related facilities.

JURIS-DICTION	AUTHORITY	AGENCY ¹	REQUIREMENTS	COMPLIANCE	AFC SECTIONS AND PAGES
State	California Porter-Cologne Water Quality Control Act of 1972; California Water Code, §13000-14957, 23 CCR.	RWQCB.	Authorizes the state to develop and implement a statewide program for water quality control.	The Project will be constructed and operated with BMPs to protect water quality in conformance with the Act and implementing regulations. The Project is designed for no process water discharge.	6.5.2.1.2, 6.5.2.2.2, 6.5.2.4 Pages 6.5-11 to 6.5-13, 6.5-14 to 6.5-15, 6.5-18 to 6.5-19
	California Water Code §13269; 23 CCR Chapter 9.	RWQCB.	Waste discharge requirements for waste that can affect the quality of waters of the state.	With the Project design, there will no discharge that would require Waste Discharge Requirements other than the State General NPDES permit for storm water discharges during construction. During operations, Site storm water discharges will occur under the County MS4 permit.	6.5.1.3.4, 6.5.2 Pages 6.5-5 to 6.5-6, 6.5-10 to 6.5-19
	California Constitution, Article 10 §2.	SWRCB	Avoid wasting or unreasonable uses of water. Regulates methods of water diversion and use.	The Project has been designed to minimize water use to the extent practical.	2.6.2, 2.7.1, 6.5.1.3 Pages 2-15 to 2-22, 6.5-4 to 6.5-10
	Fish and Game Code Section 1600-1616	CDFG	Establishes requirements to notify CDFG prior to undertaking construction that will affect the bed channel or bank of any river, stream or lake, and requires a Streambed Alteration Agreement for any such project determined by CDFG to have the potential to substantially affect fish or wildlife resources.	The Project will file an application for a Streambed Alteration Agreement with CDFG.	6.5.1.1.2, 6.5.2.1.2, 6.5.5 Pages 6.5-3, 6.5-11 to 6.5-13, 6.5-19 to 6.5-25

JURIS-DICTION	AUTHORITY	AGENCY ¹	REQUIREMENTS	COMPLIANCE	AFC SECTIONS AND PAGES
Local (Cont'd)	San Diego County Code of Regulatory Ordinances Title 6, Division 7, Chapter 8: Watershed Protection, Stormwater Management and Discharge Control	San Diego Department of Public Works.	Requires a storm water management plan and BMPs.	Project will submit final grading plans and storm water management plan to the CBO documenting measures that will implement compliance with this ordinance.	6.5.1.3.4, 6.5.2.1.2, 6.5.2.2.2 6.5.2.4, 6.5.5 Pages 6.5-5 to 6.5-6, 6.5-11 to 6.5-13, 6.5-14 to 6.5-15, 6.5-18 to 6.5-19, 6.5-19 to 6.5-25
	County MS4 Permit	San Diego Department of Public Works.	Requires the County to implement ordinances or other programs to achieve compliance with the permit	Project will discharge under the County NPDES permit during operations.	6.5.2.1.2, 6.5.2.2.2, 6.5.2.4, 6.5.5 Pages 6.5-11 to 6.5-13, 6.5-14 to 6.5-15, 6.5-18 to 6.5-25
	FPUD Administrative Code Article 19 – Water Service Connections and Rules for Deliveries of Water	FPUD	Establishes operating rules for FPUDs water sales and deliveries.	Project water supply will be provided consistent with FPUD’s administrative code.	6.5.1.4.1 Pages 6.5-7 to 6.5-9
	Water Quality Control Plan for the San Diego Basin	RWQCB	Designates beneficial uses of surface and ground water and establishes water quality objectives.	The Project will be in compliance with the Basin Plan with implementation of the water quality protection measures described in AFC Section 6.5.2 including BMPs for storm water management and prevention of discharges of hazardous materials.	6.5.1.3.1, 6.5.2 Pages 6.5-4 to 6.5-5, 6.5-10 to 6.5-19
Industry	None applicable.	None applicable.	None applicable.	None applicable.	None applicable

Table 6.5-3 – Agency Contacts for Water Resources

AGENCY	AUTHORITY
State Water Resources Control Board Division of Water Quality Storm Water Section, 15 th Floor 1001 I Street Sacramento, California 95812-1977 Staff (916) 657-1146	NOI Submittal.
County of San Diego Department of Public Works 5201 Ruffin Road, Suite D San Diego, California 92123 S. Hoang (858) 505-6327	Compliance with County MS4 storm water requirements.
County of San Diego Department of Planning and Land Use 5201 Ruffin Road, Suite B San Diego, California 92123 J. Ramaiya (858) 694-2960	Compliance with County MS4 storm water requirements.
County of San Diego Department of Environmental Health Land and Water Quality Division 5201 Ruffin Road, Suite C San Diego, California 92123 E. Klein (858) 694-3105	Onsite sanitary system compliance with County Ordinances
California Department of Fish and Game 4949 Viewridge Avenue San Diego, California 92123 T. Spear (858) 467-4223	Section 1602 Streambed Alteration Agreement
District Engineer Rainbow Municipal Water District 3707 Old Highway 395 Fallbrook, California 92028 B. Lee (760) 728-1178	RMWD
General Manager Fallbrook Public Utility District 990 East Mission Road Fallbrook, California 92028 K. Lewinger (760) 728-1125	FPUD water supply
Sr. Office Assistant, ROW Department San Diego County Water Authority 4677 Overland Avenue San Diego, California 92123 J. Flees (858) 522-6912	Encroachment permit for construction across aqueduct right-of-way

6.5.6 References

- Brian F Mooney Associates, 1997, Palomar Aggregates Quarry Environmental Impact Report.
- California Department of Water Resources (CDWR), Bulletin 118, California's Groundwater, Updated February 27, 2004.
- California Division of Mines and Geology, 2000a. Geologic Map of the Pala 7.5' Quadrangle, San Diego County, California: a Digital Database, Version 1.0.
- California Division of Mines and Geology, 2000b. Geologic Map of the Bonsall 7.5' Quadrangle, San Diego County, California, Version 1.0.
- Federal Emergency Management Agency, 2007. Online map service center, Map ID Number 06073C0501F accessed at <http://www.fema.gov/business/nfip/mcsjumpage.shtm> on June 14, 2007.
- Fallbrook Public Utility District, Personal communication with Keith Lewinger, General Manager. 2007.
- GeoLogic Associates, Water Supply Report, Gregory Canyon Landfill, San Diego, California, revised March 2007.
- Hosaka, Nagel & Company, Independent Auditors' Report on Financial Statements (for RMWD fiscal year ending June 30, 2007). September 12, 2007.
- Moreland, J.A. Hydrologic- and salt balance investigations utilizing digital models, Lower San Luis Rey River area, San Diego County, California: USGS Water Resources Bulletin 24-74. 1974.
- PCR Services Corporation, Gregory Canyon Landfill Final EIR, December 2002.
- Powers, Terry. DPLU Planner. Personal communication with TRC. May 2008.
- RMWD, Urban Water Management Plan (District Review Draft). 2005.
- RMWD, www.rainbowmwd.com. Site visited May 10, 2008.
- RWQCB, 2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TMDLs (approved by USEPA on June 28, 2007). 2006.
- RWQCB, Water Quality Control Plan for the San Diego Basin (9), 1994.
- San Diego County Department of Public Works, San Diego County 85th Percentile Isopluvials. Draft 8/7/2003.
- San Diego County Water Authority, www.sdcwa.org. Site visited May 10, 2008.

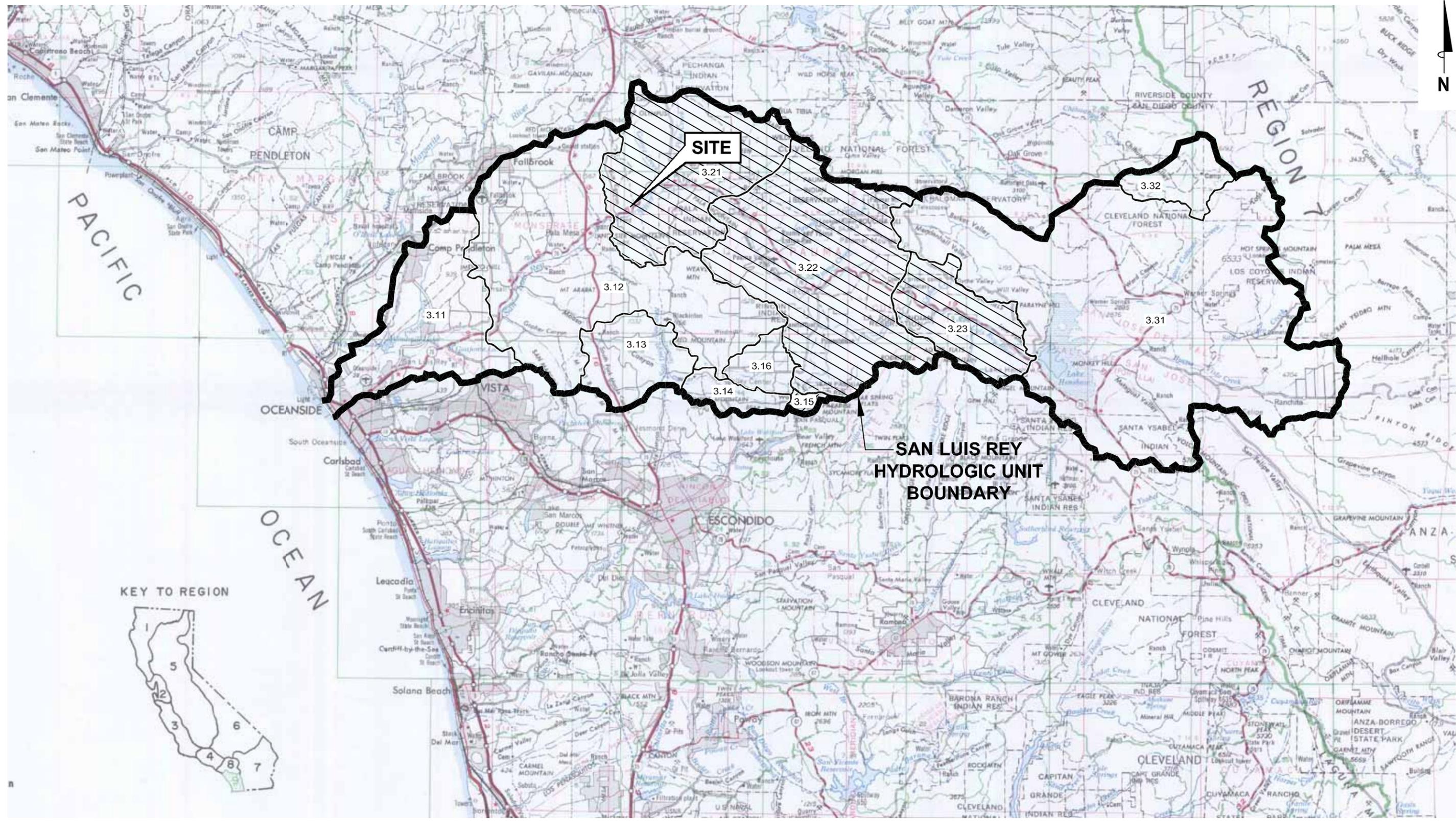
San Diego Historical Society, University of San Diego. *The Journal of San Diego History*, Winter 2002, Volume 48, Number 1.

San Luis Rey Municipal Water District (SLRMWD), Master Plan for Water and Wastewater Services, Municipal Review Study Area, August 2005.

SLRMWD, Groundwater Resource Assessment, San Diego County, California, November 9, 2006.

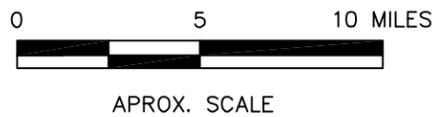
Stevenson, Christine San Diego County Department of Planning and Land Use, personal communication with TRC, September 2007 and May 2008.

Volturno, Lenore, Director of Environmental Services, Pala Band of Mission Indians, personal communication with TRC, October 2, 2007.



Hydrologic Area

- = 3.20 Monserate - Hydrologic Area
- 3.21 = Pala Hydrologic Sub Area

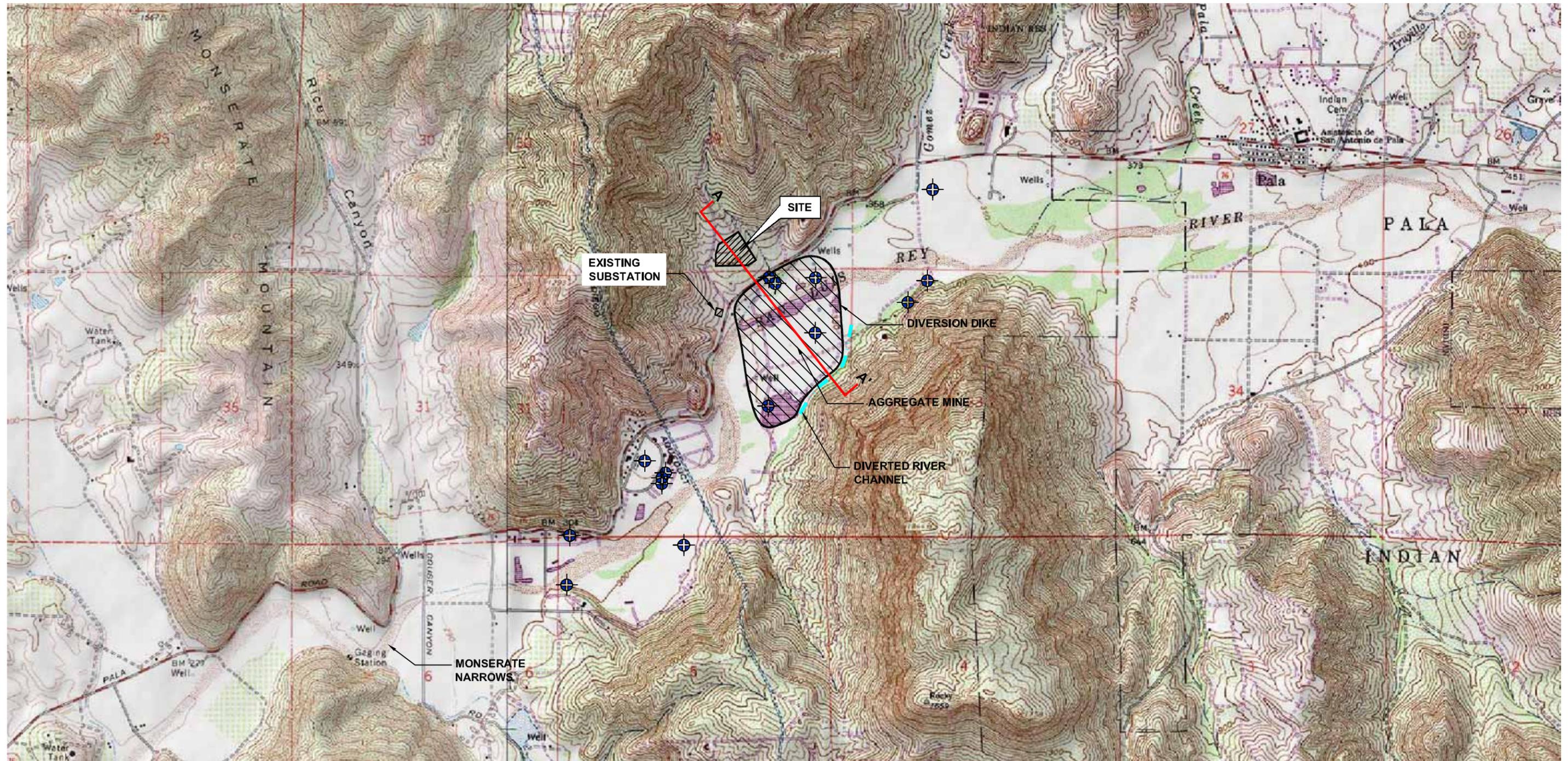


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SAN LUIS REY HYDROLOGIC UNIT

FIGURE 6.5-1

MS-1:1 L:\Graphics\Projects\Number\29-xxxx\29-03-19\Existing Surface Drainage USGS Topo.dwg Jun 04, 2008 - 2:55pm aakers



LEGEND

- A A' Geologic Cross Section (See Figure 6.5-5)
- Groundwater Well Location



SOURCE:

United States Geological Survey
7.5 Minute Topographic Map:
Pala Quadrangle



QUADRANGLE LOCATION



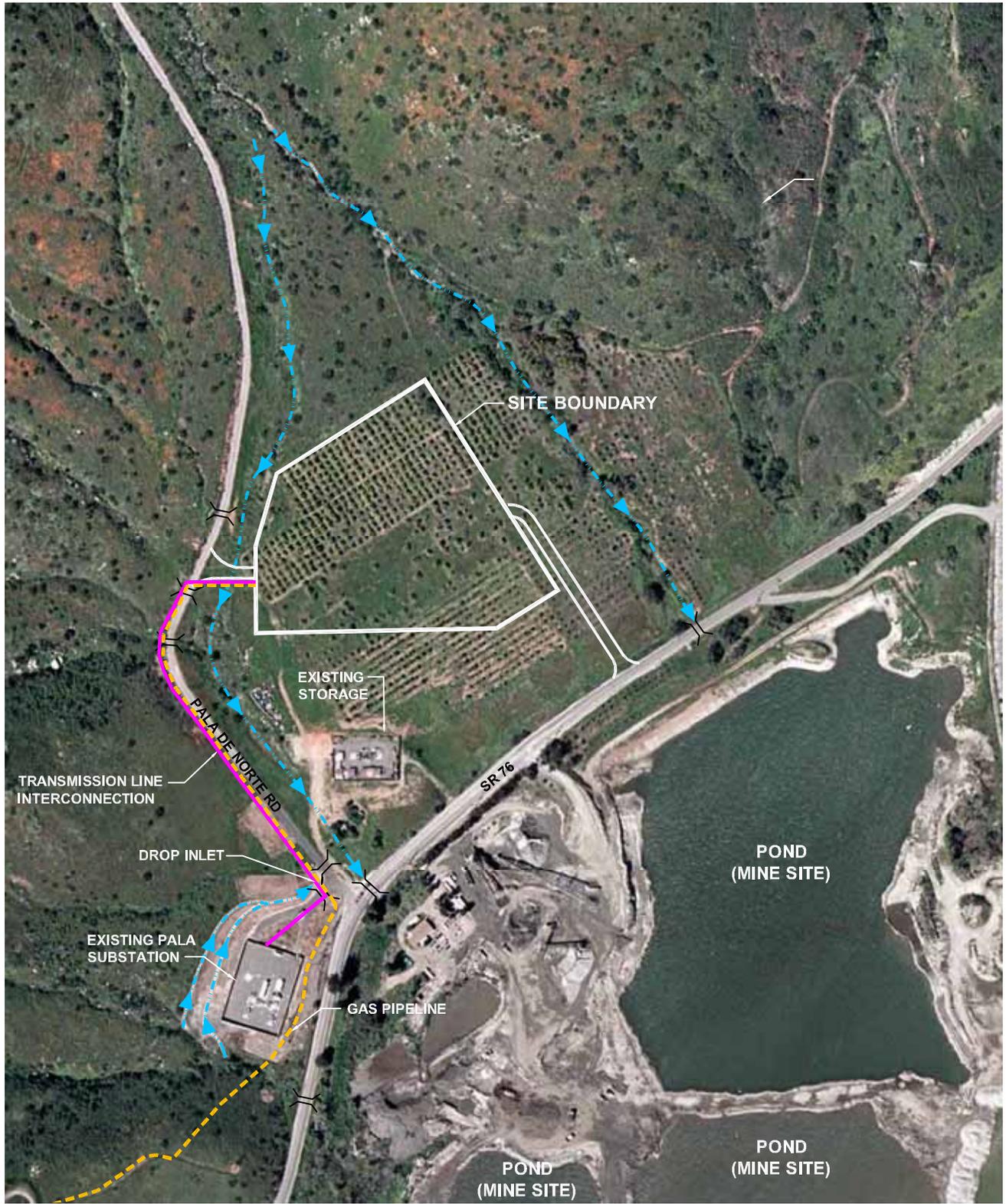
UTM GRID AND 1968 MAGNETIC NORTH
DECLINATION AT CENTER OF STREET



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**EXISTING REGIONAL SURFACE DRAINAGE
AND TOPOGRAPHY**

FIGURE 6.5-2



LEGEND

- Culvert
- Drainage Path

SOURCE:

Google Earth Professional, 2005.

APPROXIMATE SCALE (FEET)



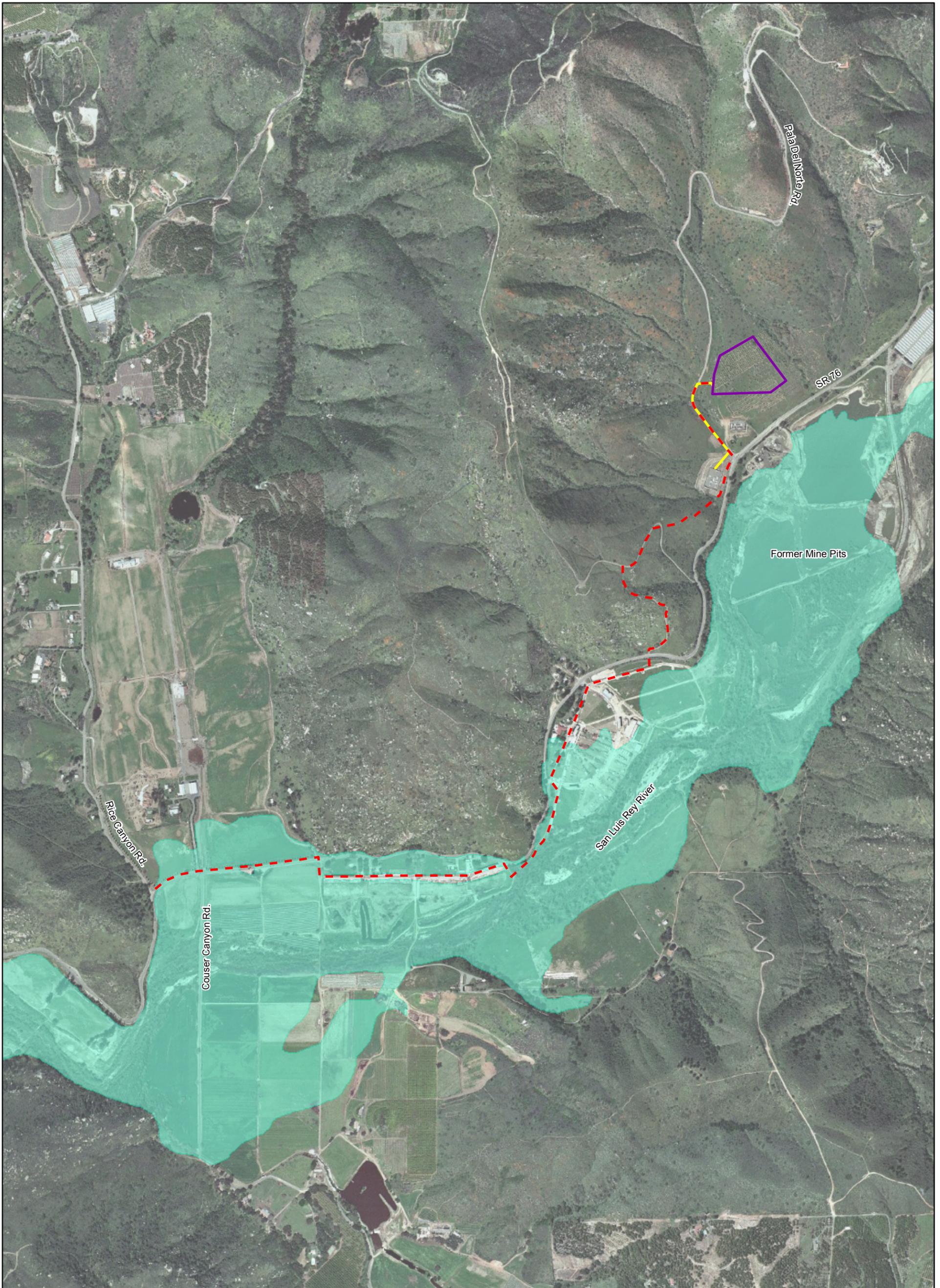
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EXISTING SITE DRAINAGE

FIGURE 6.5-3



G:\Orange_Grove-125158\MXD\Aerial 100yr Flood Zone.mxd

- - - Gas Pipeline
- - - Transmission Line Interconnection
- Site Boundary
- Area Inundated by 100-Year Floodplain

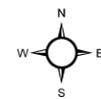


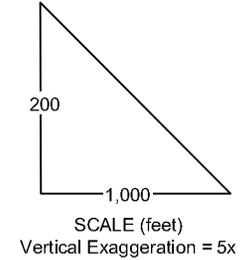
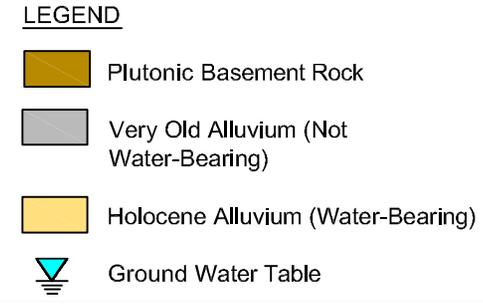
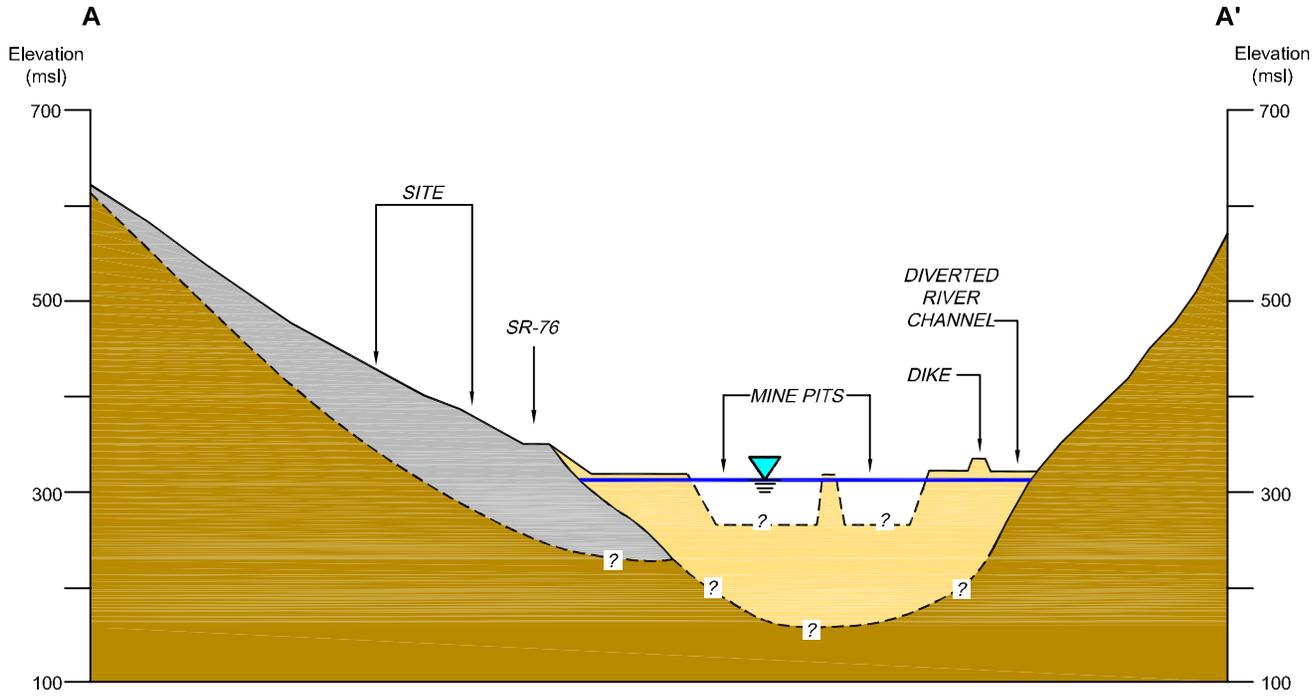
Figure 6.5-4
 100-Year Flood Zone
 Orange Grove Project
 San Diego County, CA

1" = 1,000'



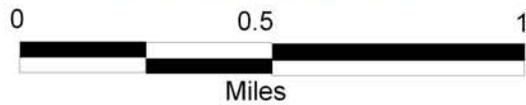
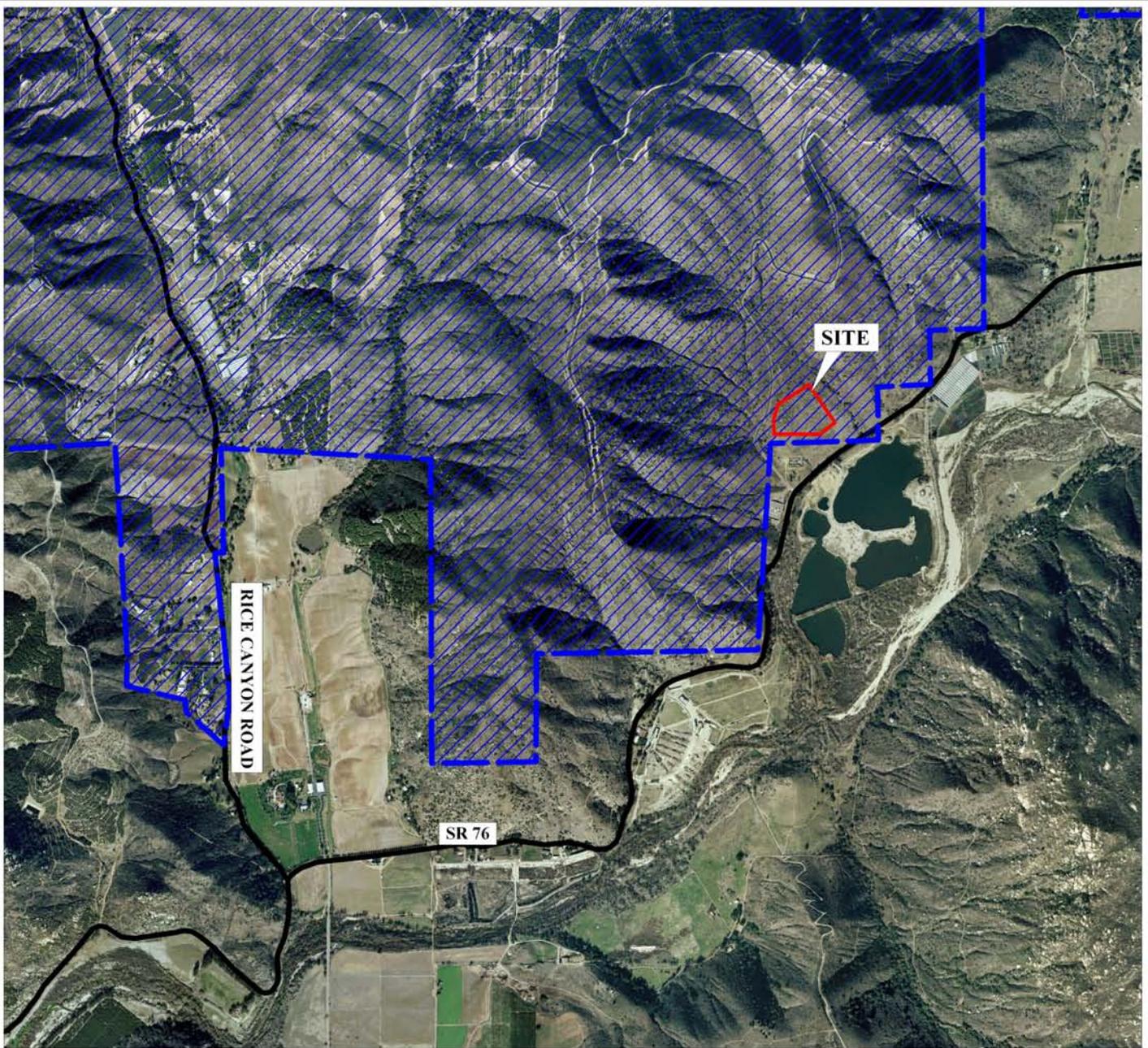
Source:
 Flood Plain Data: FEMA
 Aerial Photographs from ESRI_Imagery_World_2D





- NOTES:**
- 1) Hydrogeologic units based on:
California Division of Mines and Geology, 2000
and San Luis Rey Municipal Water District, 2006.
 - 2) Vertical Exaggeration 5X
Horizontal Scale 1:12,000 (1-inch = 1,000 feet)
Vertical Scale 1:2,400 (1-inch = 200 feet)

	PROJECT: 125158	HYDROGEOLOGIC CROSS SECTION A-A'
	FACILITY: ORANGE GROVE PROJECT SAN DIEGO COUNTY, CALIFORNIA	



SCALE 1:24,000



 - Rainbow Municipal Water District Boundary

SOURCE:

Water District Boundary Data
 Obtained from San Diego County GIS
http://files.sangis.org/fileList_categorized.aspx
 Aerial : AirPhoto USA 2006



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**RAINBOW MUNICIPAL
 WATER DISTRICT**

FIGURE 6.5-6