

## 4.7 Water Resources

This section addresses the potential impacts related to increased water use and the impacts on the availability of groundwater for other groundwater uses in connection with the Proposed Phillips Santa Maria Facility Expansion Project (Proposed Project). This section addresses:

- Current and future water demand for the Refinery;
- Current and future water demand of the uses in the surrounding area, including agricultural, industrial, and residential;
- The capability of the ground water basins to supply the demand; and
- The potential impacts of increased pumping on neighboring wells.

This section will also address the Project's potential impacts to water quality. This discussion includes:

- Evaluating whether increased use of water from onsite wells could lead to seawater intrusion or subsidence.
- Assessing the potential for pipeline leakage along the existing pipeline route to impact water quality.
- Estimating potential impacts related to increased effluent disposed through the existing Regional Water Quality Control Board (RWQCB) permit.

In addition to any potential impacts, this section identifies mitigation measures that can reduce water usage to less than current levels and alternative methods to mitigate any impacts.

### 4.7.1 Environmental Setting

#### 4.7.1.1 Water Quantity

The Phillips Santa Maria Facility (SMF) is approximately 2.5 square miles on the Nipomo Mesa, west of State Route 1 in the County of San Luis Obispo. The facility is currently in use and bounded by industrial and residential uses to the north; industrial, agricultural and recreational (golf course) uses to the east; agricultural uses to the south; and open space and recreational uses to the west.

The site is on the coastal plain with little topographical relief. The site includes operational refining facilities, coastal dunes, and coastal dune vegetation. The Project Site is accessed via State Route 1 along the northern property boundary. The site is within the Nipomo Mesa Management Area (NMMA) of the Santa Maria Groundwater Basin (SMGB). Figure 4.7-1 illustrates the approximate limits of the SMGB. Figures 4.7-2 and 4.7-3 depict the location of shallow groundwater wells and deep groundwater wells.

Figure 4.7-1 Santa Maria Groundwater Basin and Management Area

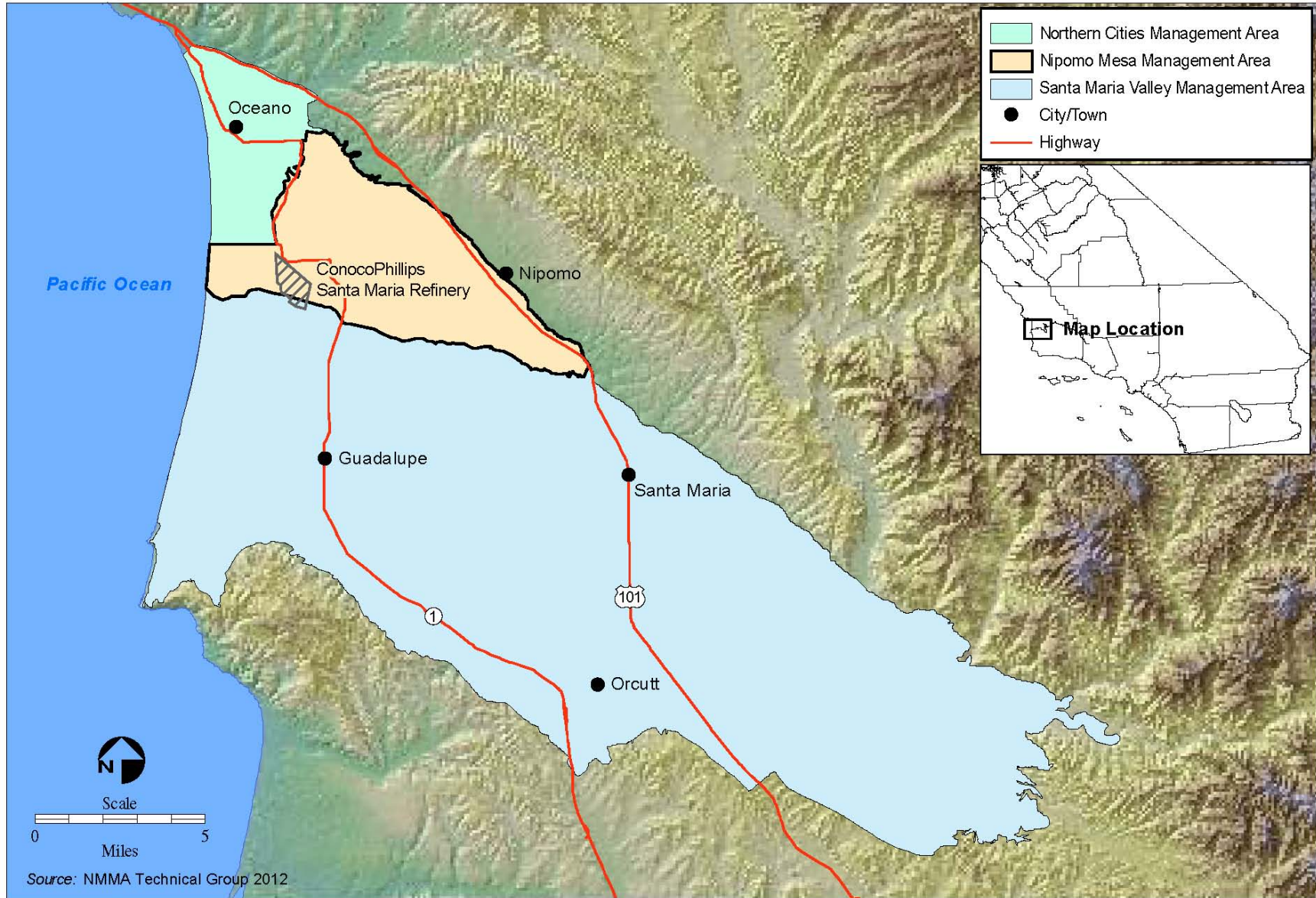
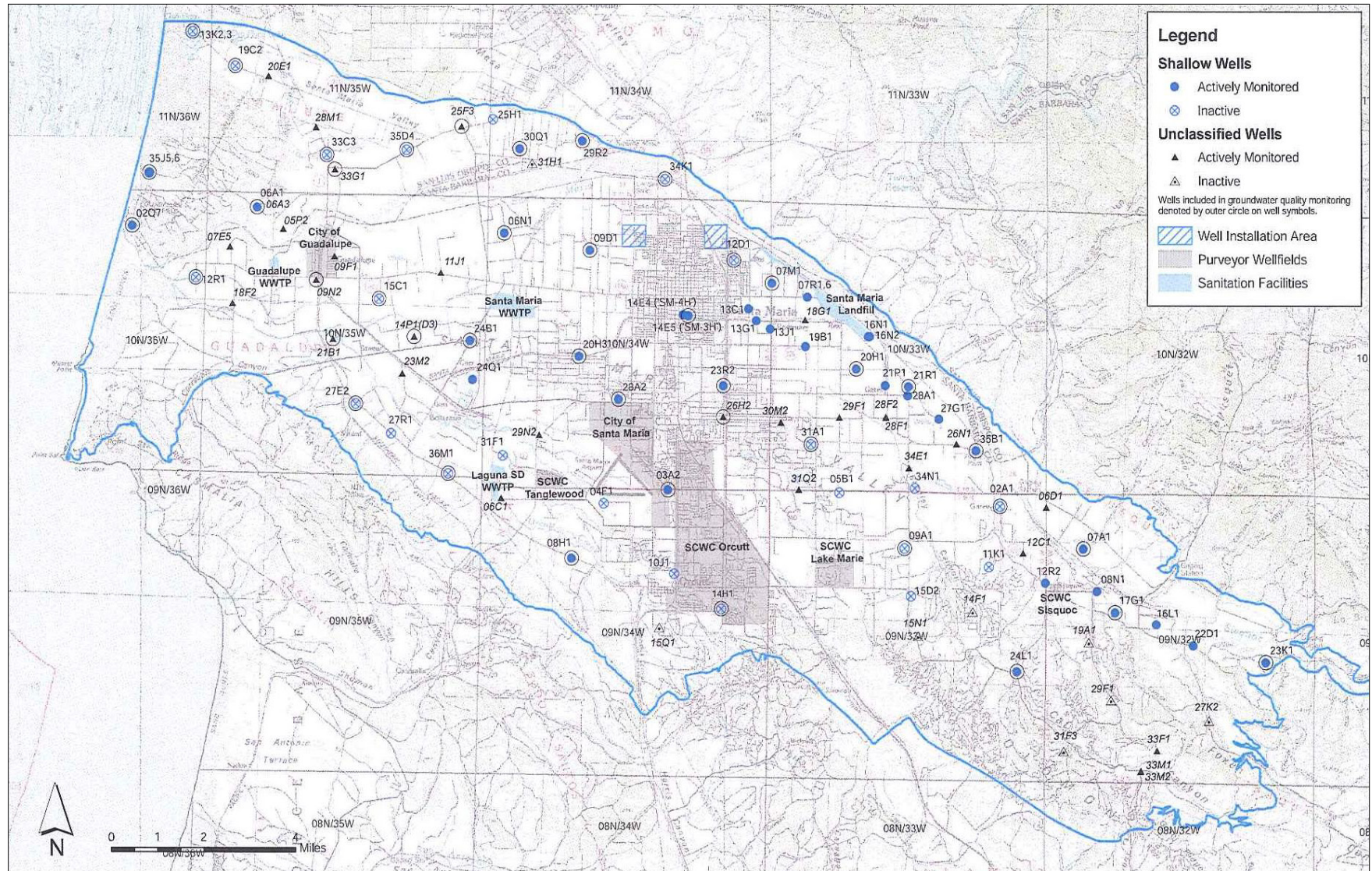




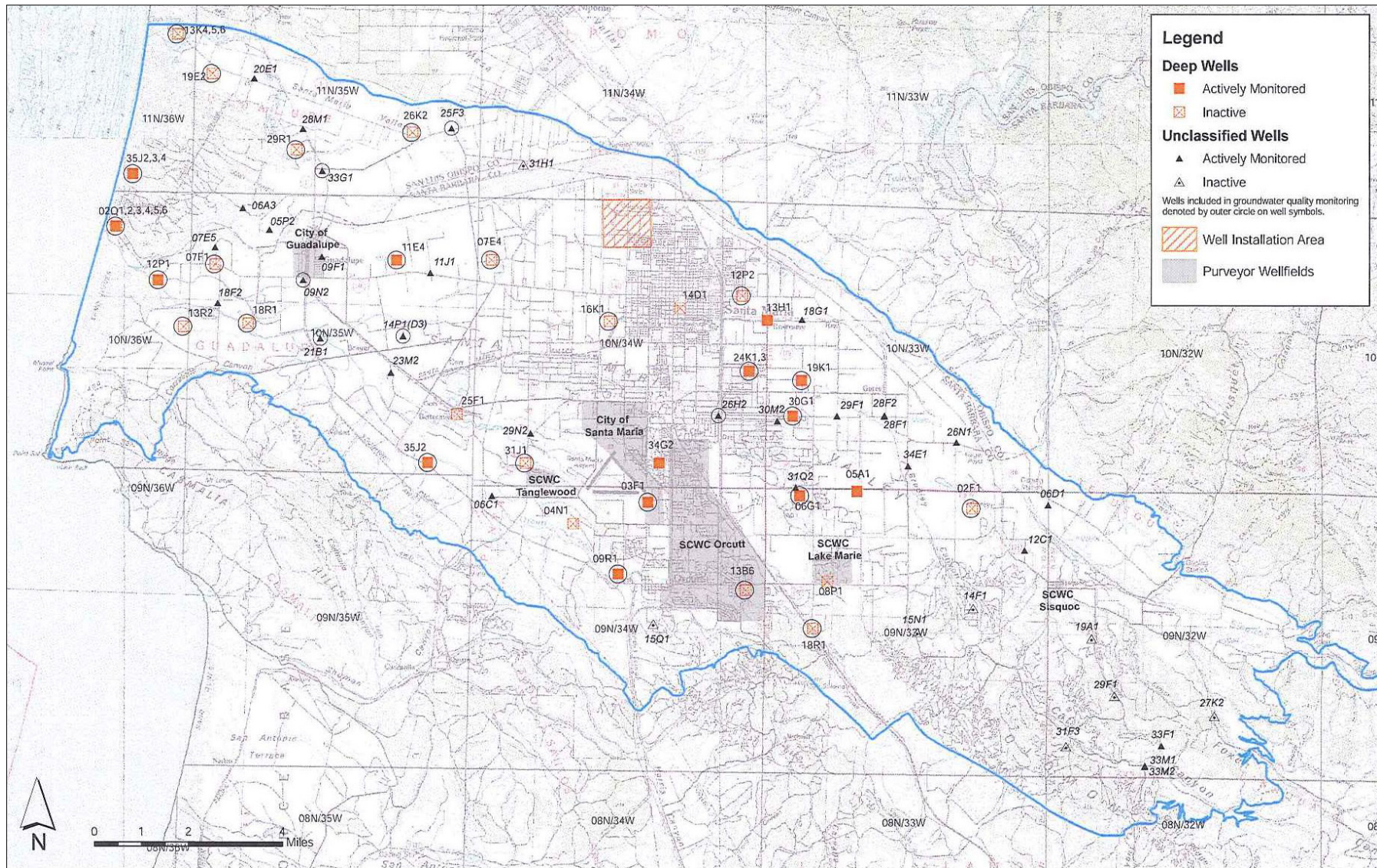
Figure 4.7-2 Santa Maria Basin – Well Network for Monitoring Shallow Groundwater



Source: SMVMA 2008



Figure 4.7-3 Santa Maria Basin – Well Network for Monitoring Deep Groundwater



Source: SMVMA 2008

Most of the SMGB is within the Santa Maria River Watershed, which extends eastward into the coastal range region and covers more than 453,000 acres. The basin is bound on the north by the San Luis and Santa Lucia Ranges, on the east by the San Rafael Mountains, on the south by the Solomon Hills and the Casmalia Hills, and on the west by the Pacific Ocean. The Santa Maria Valley is drained by the Sisquoc, Cuyama and Santa Maria Rivers and Orcutt Creek. Annual precipitation ranges from 13 to 17 inches with an average annual precipitation of 15 inches per year (California Groundwater Bulletin 118 2004). Natural recharge to the basin comes from seepage losses from the major streams, percolation of rainfall, and subsurface flow (CDWR 2002).

Over several million years, during the middle Tertiary period, thick marine sediment deposition in a subsiding basin formed the SMGB. The basin was shaped and deformed by right-lateral, strike slip faulting. Subsequent tectonic compression of the basin resulted in large scale folding. Late Tertiary through relatively recent west-northwest trending reverse faults and thrust faults, local folding, uplift and tilting has further complicated the overall structure within the basin. The SMGB is the upper, water-bearing portion of the Santa Maria Geologic Depositional Basin. The aquifers are generally confined in the western portion of the basin by the Santa Maria River Fault.

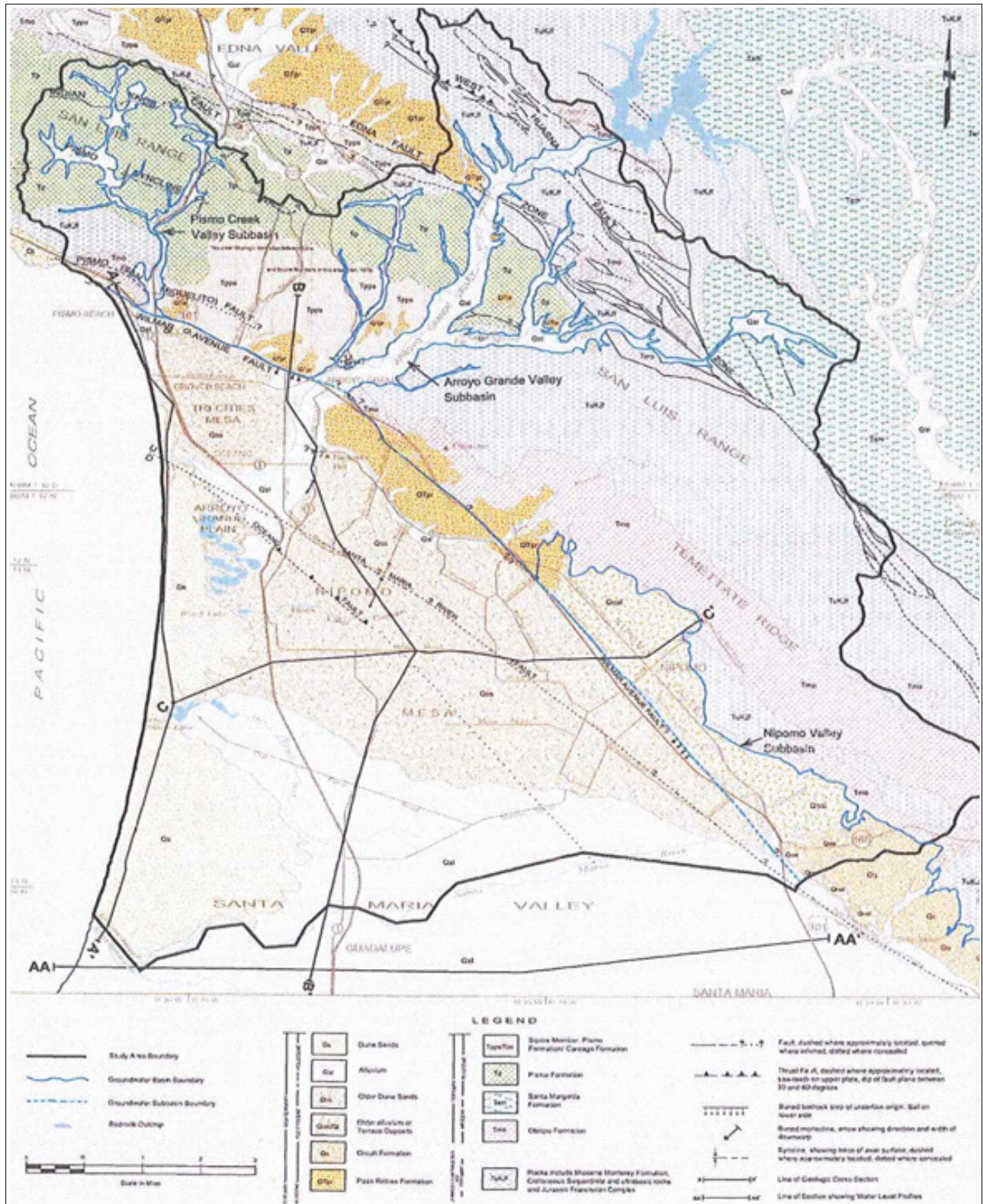
The aquifer system in the basin consists of unconsolidated Plio-Pleistocene alluvial deposits including gravel, sand, silt, and clay that range in thickness from 200 to nearly 3,000 feet. The underlying consolidated rocks typically yield relatively insignificant quantities of water of poor quality in the local wells. Franciscan and Knoxville Formation of Jurassic and Cretaceous age, basement complex unconformably underlie the Tertiary and Quaternary deposits. The unconsolidated alluvial deposits in the SMGB comprising the aquifer system include the Careaga Sand, the Paso Robles Formation, the Orcutt Formation, the Quaternary Alluvium, and river channel deposits, sediments, terrace deposits, and wind-blown dune sands at or near the surface.

Figure 4.7-4 depicts the conceptual geology for the area. Figures 4.7-5 thru 4.7-7 represent the conceptual geologic subsurface conditions of the primary aquifer system. These cross sections do not depict offsets of the basement rocks and aquifer units by faults (CDWR 2002). The sections suggest and reports discuss significant differences in water levels on opposite sides of the estimated trace of the Santa Maria River Fault, suggesting that the fault is to some degree a hydraulic barrier along the eastern margin of the Nipomo Mesa (CDWR 2002).

The aquifer characteristics of the SMGB are based on a review of several sources of information including the DWR report (CDWR 2002), a report on a ground water flow model and assessment of Santa Maria River Valley groundwater yield (Luhdorff & Scalmanini 2000), several reports regarding development of the Nipomo Mesa Areas (Cleath and Associates 1996a, 1998; ESA 1998). Many of these references rely heavily on estimates of aquifer properties reported by Worts (1951). Estimates of hydraulic conductivity are based on specific capacity values from driller's pumping tests and aquifer testing conducted on a few wells.



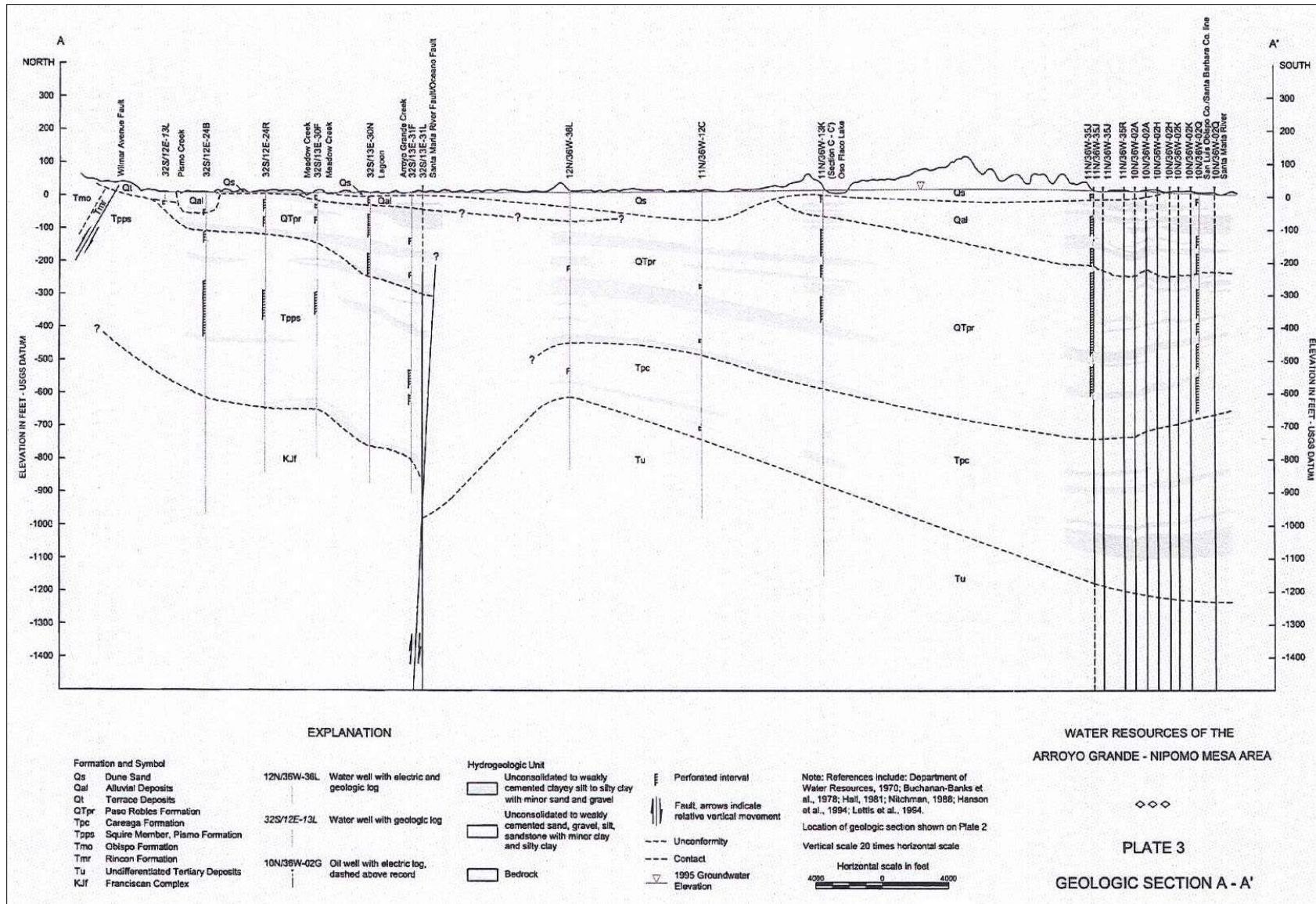
Figure 4.7-4 Generalized Geology of the Arroyo Grande – Nipomo Mesa Area



Source: CDWR 2002



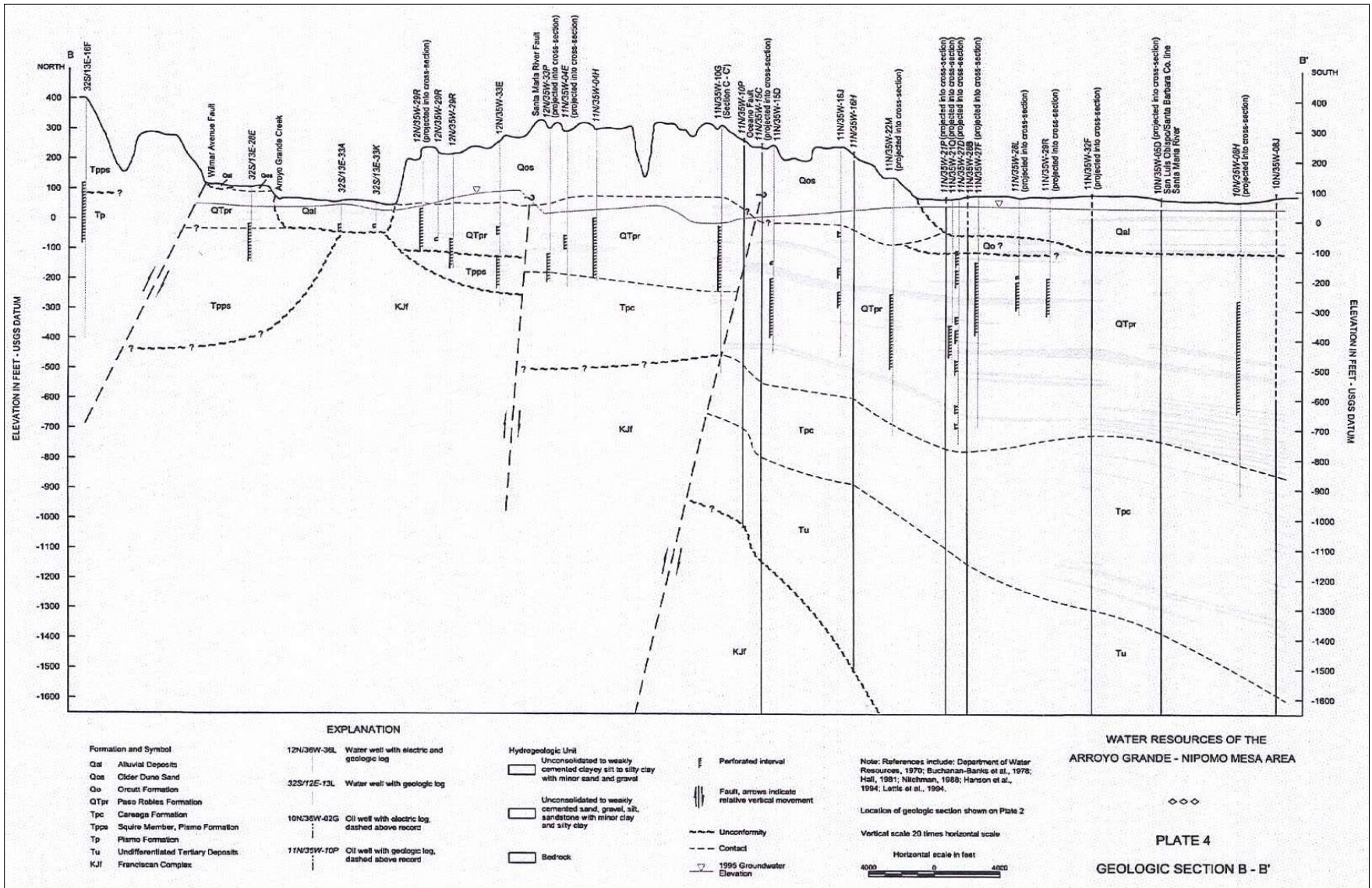
Figure 4.7-5 Geologic Cross Section A – A'



Source: CDWR 2002



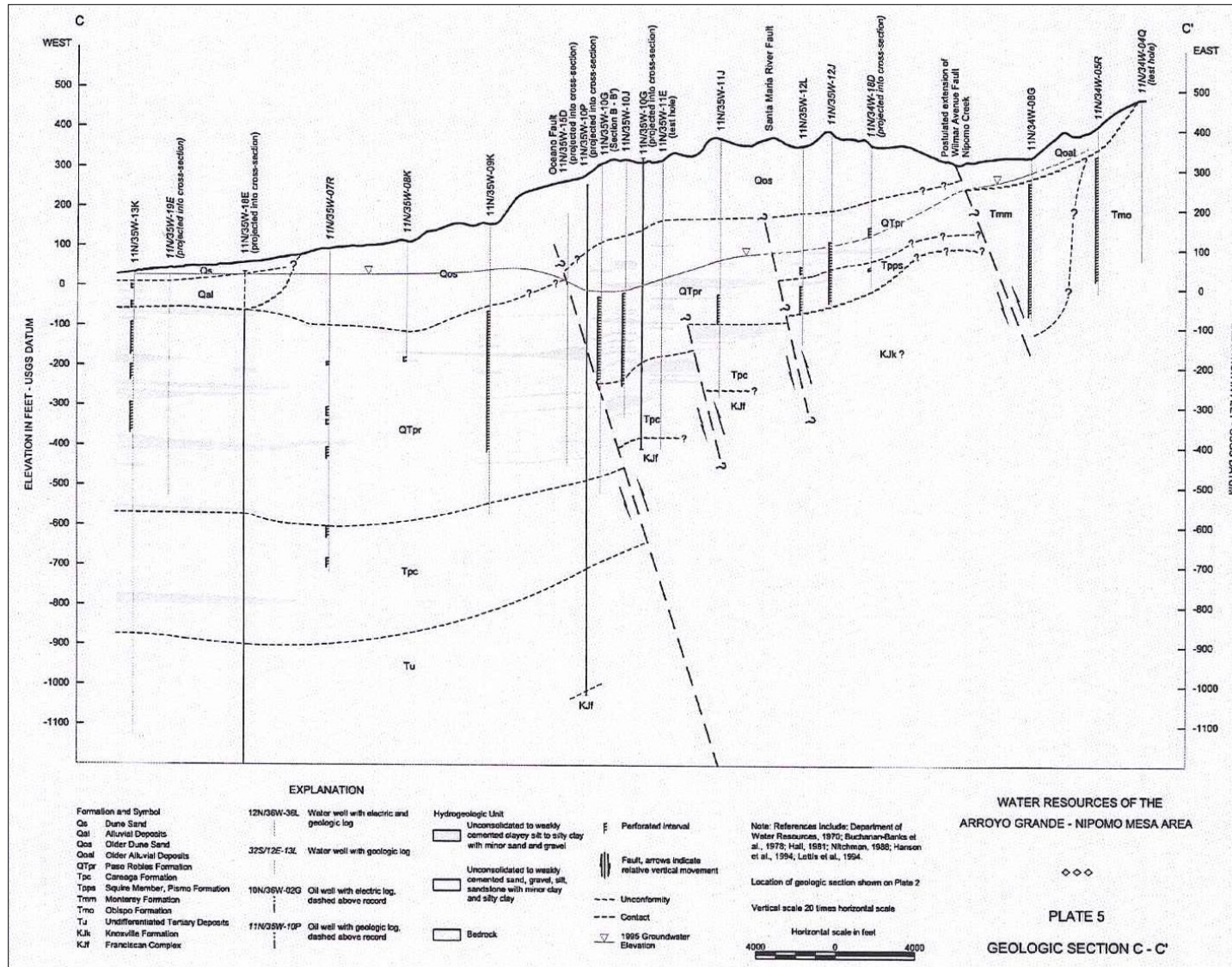
Figure 4.7-6 Geologic Cross Section B – B'



Source: CDWR 2002



Figure 4.7-7 Geologic Cross Section C – C'



Source: CDWR 2002



Within the SMGB, the Paso Robles Formation is the thickest and most extensive aquifer in the basin. The report by Luhdorff and Scalmanini includes a map with hydraulic conductivity (K) values for the Paso Robles Formation at 20 locations (2000). In the Sisquoc plain, Orcutt Upland, and central Santa Maria River Valley, K ranges from 100 to 400 gallons per day per square foot (gpd/ft<sup>2</sup>) (13 to 52 feet per day [ft/d]). Values are lower in the western portion of the Santa Maria River Valley and beneath Nipomo Mesa, where the reported values range from 15 to 110 gpd/ft<sup>2</sup> (2 to 15 ft/d). The wells are typically screened over hundreds of feet of the Paso Robles Formation, so these values are bulk averages for the formation.

The Quaternary Alluvium is the most permeable aquifer, although few testing data seem to be available to estimate hydraulic conductivity. Luhdorff & Scalmanini show seven locations with estimates of hydraulic conductivities. As for the Paso Robles Formation, data indicate that the hydraulic conductivity of the Alluvium generally decreases to the west. Values of 4500 gpd/ft<sup>2</sup> (600 ft/d) are typical in the Sisquoc plain, while 2,000 gpd/ft<sup>2</sup> (265 ft/d) is typical for the lower portion of the alluvium near Guadalupe. Typical thickness for the Quaternary Alluvium in the Santa Maria River Valley is 100 to 200 feet. Near Guadalupe, the upper portion of the alluvium is generally fine-grained and acts as a hydraulic confining layer above the lower alluvium and Paso Robles Formation.

The California Department of Water Resources initially monitored groundwater levels in the SMGB in the 1930s. Most of the available water level data is from pumping wells, and operations and methodology details were not reported according to current standards. Therefore, the data is of limited use except where long time records are available for wells, in which case, trends can be established.

Major declines in groundwater levels in Santa Maria River Valley wells and decrease of the groundwater hydraulic gradient toward the ocean occurred again between the mid-1940s and late-1960s. Drops in water level of 40 to 60 feet were common in wells during this period (CDWR 2002, Luhdorff & Scalmanini 2000).

Total dissolved solids (TDS) in groundwater east of Guadalupe were less than 1,000 milligrams per liter (mg/l) in the 1930s, but increased to greater than 3,000 mg/l by 1975 (Santa Barbara County Water Agency 1996, 1999). Increasing groundwater pumping and possible surface water diversions to support flourishing agricultural development in Santa Maria River Valley contributed to the drop in groundwater levels, the decrease in flows in the Santa Maria River, and the increase in TDS in groundwater. However, the most important factor appears to be a decrease in recharge due to a prolonged period of less than average rainfall from 1945 to 1970.

Substantial recovery of groundwater levels in the Santa Maria River Valley occurred in the 1970s and 1980s. Management of Cuyama River floodwater flows by Twitchell Dam began in 1959 and is credited with increasing recharge to the Santa Maria River Valley and helping to arrest the decline in groundwater levels.

Luhdorff & Scalmanini report that hydrograph records for the period from the early 1980s to late 1990s show successive periods of decline and recovery that are not consistent with perennial overdraft (2000). Reported estimates of the annual yield of the basin include 120,000 AF and 124,000 AF from 1968 to 1989, which Luhdorff & Scalmanini reports as the approximate



sustainable perennial yield (Santa Barbara County 1996, 2000, 2002; Ahlroth 1995; Luhdorff & Scalmanini 2000). Based on estimates, average demand (groundwater pumping) in the Santa Maria River valley was 96,200 AF/Y from 1945 to 1970 and 140,000 AF/Y in 2000 (Luhdorff & Scalmanini 2000).

Water balance evaluations for SMGB using hydrologic conditions based on 45-year period from 1935 to 1979 are reported to indicate average annual deficits of 6,000 AF for historical water demand conditions, and 20,000 AF for water demands projected into the future from the late 1990s (Santa Barbara County 1992, 1994, 1996, 2000, 2002). However, this estimated deficit is reduced by importation of water to Santa Barbara County beginning in 1996 from the State Water Project (SWP). Santa Barbara County estimated that the SWP imported 12,000 AF of water to the SMGB in 1999. This reduces the estimated deficit from 20,000 to 8,000 AF/Y. Recharge enhancement by Twitchell Dam will essentially erase any deficit. However, the recharge enhancement provided by management of flood water discharge from Twitchell Dam may diminish in the future due to depletion of Cuyama River flows by groundwater pumping in Cuyama Valley and decrease in storage capacity with accumulation of sediment in Twitchell Reservoir (CDWR 2003, SAIC et al. 2003).

Luhdorff & Scalmanini report specific yield values in the range of 8 to 13 percent, and assume a reasonable value of storativity of 0.0001 for portions of the aquifers system under confined conditions (2000).

#### Nipomo Mesa Management Area Water Use

The Phillips SMF currently uses approximately 358 million gallons of water per year (1,100 acre-feet per year [AFY]). The facility lies within the NMMA of the Santa Maria Groundwater Basin. The 2011 water demand in the NMMA is presented in Table 4.7-1.

**Table 4.7-1 Existing Water Usage in NMMA**

<u>Water User</u>	<u>2011 Groundwater Production (AFY)<sup>a</sup></u>
<u>Phillips</u>	<u>1,100</u>
<u>Nipomo Community Services District (NCSD)</u>	<u>2,488</u>
<u>Golden State Water Company (GSWC)</u>	<u>1,043</u>
<u>Woodlands</u>	<u>864</u>
<u>Rural Water Company (RWC)</u>	<u>728</u>
<u>Rural Landowners</u>	<u>1,850</u>
<u>Agriculture</u>	<u>2,465</u>
<u>Total</u>	<u>10,538</u>

a. AFY = acre feet per year

Sources: NMMA TG 2012



Ground subsidence at the SMF or the surrounding area has not been reported by either the Applicant or any available published records by the United States Geologic Survey related to groundwater pumping in the region.

#### **4.7.1.2 Water Quality**

The Project Site currently houses the Refinery, pipelines, and related equipment. All crude oil is delivered by pipeline. The Refinery produces semi-refined liquid products, petroleum coke, elemental sulfur, and fuel gas. The two semi-refined liquid products, gas oil and pressure distillate, are sent via pipeline to a San Francisco Refinery. Petroleum coke is shipped via truck or railcar. Sulfur is shipped via truck and all produced fuel gas is recovered and used for energy at the Refinery.

The Proposed Project does not include any new construction or equipment, and the existing equipment will remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to pipeline shipping could be larger in volume as a result of increase pumping required to transport the additional materials produced. Based on effluent monitoring results from the Applicant, daily effluent ranged from 0.001 million gallons per day (MGD) on several days to a maximum effluent flow of 0.544 MGD. Similar effluent flow rates were reported in 2007 and 2008. Onsite total coke volume is limited to 4,000,000 cubic feet. Accordingly, coke is shipped daily to keep inventory below regulated thresholds.

Impacts to water quality would be significant if spill volume increased substantially along the pipeline route due to the Proposed Project. However, as the spill volumes would increase only nominally, impacts would be similar to current operations. In addition, the Refinery operates under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

The facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also performs the groundwater remediation. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The NPDES permit summarizes the final effluent limitations for the discharge. In addition to the effluent limitations, additional mass loading credits for storm runoff, which is commingled with process wastewater, can be granted. During wet weather, runoff effluent credits are provided according to the NPDES facility permit. Effluent limitations are included in the NPDES permit depending on the whether the effluent is less than or greater than 0.285 MGD, respectively with additional monthly average effluent limitations imposed in Table 9 of the NPDES facility permit.

A non-contact stormwater sewer system collects precipitation runoff from streets and unimproved areas, which are not subject to oil spills; the runoff then flows by gravity to an evaporation pond. The corresponding sludge is recycled at the adjacent coke facility.

Groundwater quality varies significantly across the basin (Santa Barbara County 1996, 1999). TDS in the groundwater generally increases from east to west. One of the main threats to groundwater in the NMMA is the potential for seawater intrusion in the coastal portions of the aquifer. Evaluating seawater intrusion risk depends on knowledge of the groundwater levels, depth of the aquifers, structural geology/stratigraphy, and the location of the seawater-freshwater interface (NMMA TG 2012). The potential for seawater intrusion is minimized when there is sufficient groundwater flow toward the ocean, which can be monitored using groundwater elevations to determine the offshore gradient. If the onshore aquifers are pumped in excess of replenishment, the groundwater flow direction could reverse and seawater intrusion could eventually occur (NMMA TG 2012). However, a substantial lag time may be present between excessive pumping-induced groundwater gradient reversal and seawater intrusion into the freshwater aquifer.

A series of coastal sentry wells are monitored regularly for seawater intrusion and reported publicly. To date, there has been no increase in chloride concentrations (indicative of seawater intrusion) in the coastal sentry wells. The 2011 NMMA report concluded that there is no evidence of seawater intrusion in the NMMA portion of the SMGB (NMMA TG 2012).

Groundwater quality monitoring in other parts of the NMMA has identified localized areas of the NMMA with nitrate concentrations as high as 90 percent of the Maximum Contaminant Level and rising nitrate concentrations in groundwater. Nitrate contamination can occur beneath agricultural lands as a result of leaching of fertilizer-rich soil into underlying groundwater. One of the Phillips wells reported a high (1000 mg/l) total dissolved solids (TDS) concentration, which exceeds secondary drinking water standards. However, the well is used for industrial processing (Carollo 2012).

## **4.7.2 Regulatory Setting**

### **4.7.2.1 Federal Policies and Regulations**

#### **Safe Drinking Water Act of 1974**

The Safe Drinking Water Act of 1974 (SDWA) was implemented by the EPA and is the primary federal regulation controlling drinking water quality in every public water system in the United States. The SDWA authorizes the EPA to establish and enforce guidelines for drinking water to protect against both naturally occurring and manmade contaminants.

The SDWA was originally implemented in 1974 with significant amendments in 1986 and 1996. The SDWA originally set standards for the treatment of individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionuclides, nitrates, toxic metals, bacteria, viruses, and pathogens. The amendments to the SDWA made some significant changes, most of which resulted in more stringent protection of drinking water sources. The amended SDWA also greatly enhanced the existing law by implementing operator training, funding for water system improvements, and public information as important components of safe drinking water.



## **The Clean Water Act**

The Clean Water Act of 1972 (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulates quality standards for surface waters. Under the CWA, the EPA has implemented many pollution control standards for industries, as well as water quality standards for all contaminants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained from the EPA.

### **4.7.2.2 State Policies and Regulations**

#### **Senate Bill 610, Water Supply Assessment.**

Senate Bill (SB) 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands.

SB 610 also requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA. The lead agency for the project is required to identify the public water system that might supply water to the project and then to request a WSA from the water supplier. If there is no public water system and the project meets the definition of “project” as defined in SB 610, then the lead agency must prepare the assessment. The County addresses the requirements of SB 610 in the following discussion and also the analysis of impact WR-1.

#### *Is the Proposed Project Subject to CEQA?*

Yes. As presented in this EIR, the Proposed Project requires permits issued by a public agency and is, therefore, subject to CEQA.

#### *Is the Proposed Project a “Project” under SB 610?*

A Proposed Project meets the definition of “Project” according to Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;

- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (DWR 2003b).

The Phillips SMF is an industrial processing plant occupying more than 40 acres of land. Therefore, a water supply assessment has been completed (Appendix G).

The water supply assessment concluded that the total water supplies available during normal, single-dry, and multiple-dry water years, within a 20-year projection, will meet the projected water demand for the Proposed Project, based on the Phillips groundwater rights in the NMMA, as defined in the Stipulation for the Santa Maria Groundwater Litigation (the Stipulation). The County of San Luis Obispo and other major water purveyors in the NMMA are bound by the Superior Court of the County of Santa Clara, under the Stipulation to uphold Phillips' rights to use water. The total water supplies for other planned future uses within the NMMA are not sufficient to meet future demands without the addition of supplemental water.

### **State Water Resources Control Board**

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are the principal state agencies with primary responsibility for the coordination and control of water quality. The SWRCB enforces the water quality standards set forth in the CWA for the State of California on behalf of the federal EPA. Most SWRCB objectives are based on the California Code of Regulations, Title 22 State Drinking Water Standards. The City of Whittier lies within Region 4, the Los Angeles Regional Water Quality Control Board.

### **The Porter-Cologne Water Quality Control Act of 1987**

The Porter-Cologne Water Quality Control Act governs water quality in California is by assigning the overall responsibility for water rights and water quality protection to the SWRCB to develop and enforce water quality standards. The EPA delegated to California the authority to issue NPDES permits for all areas within its boundaries, except Native American territories.

### **Safe Drinking Water and Toxic Enforcement Act of 1986**

The Safe Drinking Water and Toxic Enforcement Act provides two ways to administratively list chemicals known to the state to cause cancer or reproductive toxicity. A chemical can be listed if a body considered to be authoritative by the state's qualified experts, such as the EPA or Food and Drug Administration, formally identifies the chemical as causing cancer or reproductive toxicity. A chemical can also be listed if a state or federal agency has formally required labeling or identifying that chemical as causing cancer or reproductive toxicity. The criteria for listing these chemicals are outlined in 22 CCR Section 12902.

### **Groundwater Management Act of 1992**

The Groundwater Management Act, commonly referred to as Assembly Bill (AB) 3030, is designed to provide local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California, and AB



3030 ensures safe production and quality by encouraging local agencies to work cooperatively to manage groundwater resources within their jurisdictions (Water Code Section 10750).

**4.7.2.3 Local Policies and Regulations**

**San Luis Obispo County**

The County of San Luis Obispo encompasses approximately 3,300 square miles of land and has more than 260,000 residents. The San Luis Obispo County Water Resources Division is the County’s management authority to ensure sustainable water uses, reliable water supplies, and better water quality. The Water Resources Division has incorporated the Integrated Regional Water Management Plan, which promotes coordination with statewide water planning efforts.

**4.7.3 Significance Criteria**

The following hydrology and water resources impacts would be deemed significant if the Proposed Project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially change the quality of groundwater;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate of runoff in a manner that would result in flooding on or off-site; or
- Create, contribute, or alter hydrologic characteristics of the area producing runoff that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

**4.7.4 Project Impacts and Mitigation Measures**

Impact #	Impact Description	Phase	Residual Impact
WR.1	The Proposed Project one percent increase in water usage <u>would not adversely</u> impact the current and future availability of groundwater for other users, including agricultural and residential users.	Operation	Class III

The rights to extract water from the SMGB have been disputed since the 1990s, resulting in several legal proceedings and culminating with a multi-pronged lawsuit known as the Santa Maria Groundwater Litigation. The litigation was resolved in 2008 (Lead Case No. 1-97-CV-770214) with The Judgment After Trial (January 25, 2008), which approved the Stipulation (June 30, 2005). The Stipulation includes provisions for the rights to use the groundwater, development of the groundwater monitoring programs, and development of plans and programs to respond to Potentially Severe and Severe Water Shortage Conditions for the Nipomo Mesa

Management Area (NMMA). The Nipomo Mesa Management Area Technical Group (NMMATG), which represents various groups and organizations, was formed as a result of a legal judgment to monitor water usage and produce annual reports for the NMMA. These reports provide a breakdown of the available data for the NMMA, production records, and data presented herein.

Based on the 2011 report, the estimated production of groundwater in the NMMA was 10,538 acre-feet (AF) in 2011 (NMMATG 2012). Of the 10,538 AF of groundwater produced, the Applicant reported production of 1,100 AF, approximately ten percent of the total production (NMMATG 2012).

Table 4.7-2 lists the projected potential future water use in the basin. Currently, no projected increase is predicted for Rural Water Company, and no estimates are available for future agricultural uses.

**Table 4.7-2 Potential Future Water Usage in the NMMA**

<u>Water User</u>	<u>2011 Groundwater Production (AFY)<sup>a</sup></u>	<u>Potential Future Demand at 2030</u>
<u>Phillips</u>	<u>1,100</u>	<u>1,200<sup>1</sup></u>
<u>Nipomo Community Services District (NCSD)</u>	<u>2,488</u>	<u>3,400</u>
<u>Golden State Water Company (GSWC)</u>	<u>1,043</u>	<u>1,940</u>
<u>Woodlands</u>	<u>864</u>	<u>1,600</u>
<u>Rural Water Company (RWC)</u>	<u>728</u>	<u>NA</u>
<u>Rural Landowners</u>	<u>1,850</u>	<u>NA</u>
<u>Agriculture</u>	<u>2,465</u>	<u>NA</u>
<u>Total</u>	<u>10,538</u>	

Source: NMMATG 2012

*1. Phillips listed its potential future groundwater demand to be 1,200 AFY in the 4<sup>th</sup> Annual Report for the NMMA. The Proposed Project only involves a one percent increase from the current levels or a total demand of 1,111 AFY. Future increases in groundwater production due to Phillips projects under CEQA may require additional water supply assessments.*

The Proposed Project would result in an increase in groundwater use of one percent, or 11 AFY. According to the Stipulation, Phillips has no limit to the beneficial and reasonable use of groundwater unless there is a Severe Water Shortage Condition. In the next 20 years, if a Severe Water Shortage Condition occurs, per the Stipulation, Phillips would have rights to 110 percent of the highest amount of prior groundwater use (1,550 AFY). The Proposed Project demand (1,111 AFY) is less than Phillips groundwater rights, per the Stipulation. Therefore, the WSA concludes there is sufficient water supply for the Proposed Project for the next 20 years (Appendix G).

The water supply assessment is based on the groundwater rights of Phillips, as defined in the Stipulation. San Luis Obispo County and all major water purveyors in the NMMA are signed parties to the Stipulation and are bound by the water management agreement to comply with

each and every term, which includes upholding Phillips groundwater rights. The monitoring and water management requirements of the Stipulation are designed to protect the current and future availability of groundwater in the NMMA. Since the Proposed Project water demand is within the groundwater rights of Phillips and less than 110 percent of the highest amount of prior groundwater use, impacts associated with current and future water availability of groundwater for other users, including agricultural and residential users, is considered *less than significant* (Class III).

Impact #	Impact Description	Phase	Residual Impact
WR.2	The Proposed Project increase in groundwater pumping of onsite wells <u>would not</u> exceed sustained pumping capacities of existing wells, <u>nor result in</u> drawdown <u>of</u> onsite wells and wells on neighboring properties.	Operations	<u>Class III</u>

Water wells within the SMGB are screened over alluvial and bedrock approximately 1,500 feet below mean sea level under the Santa Maria River and approximately 200 feet above mean sea level under the northeastern edge of the Nipomo Mesa (DWR 2002). Wells in the Nipomo Mesa and Santa Maria area are screened for hundreds of feet within alluvial and Paso Robles Formation bedrock. Hydraulic conductivity is estimated to be approximately 15 to 110 gpd/ft<sup>2</sup> in the western portion of the Santa Maria River Valley increasing to 100 to 400 gpd/ft<sup>2</sup> in the central Santa Maria River Valley (Luhdorff and Scalmanini 2002).

The existing wells have considerably greater capacity and production capabilities than the current and projected uses. In addition, the NMMATG has adopted a Well Management Plan and protocol for establishing and measuring groundwater level measurements. To date, no drawdown or adverse effects have been noted and none are anticipated based on the available data and well conditions. However, the well monitoring program will continue to document and verify these findings. Therefore, the existing water wells have sufficient capacity to provide the additional water demand supply for the Proposed Project.

Impacts due to increased groundwater pumping on the adjacent properties would *be less than significant* (Class III).

**Mitigation Measures**

No mitigation measures are required.

**Residual Impacts**

There would be no residual impacts.



Impact #	Impact Description	Phase	Residual Impact
WR.3	The Proposed Project may have significant impacts on water quality.	Operations	<u>Class II</u>

The Proposed Project does not include any new construction or equipment and the existing equipment would remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated.

Impacts to water quality would be significant if spill volume increased along the pipeline route due to the Proposed Project. The Refinery operates under the Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

In addition, the facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also remediates the groundwater. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The increased crude oil refined at the site would be managed under the same spill prevention guidelines currently in place at the Refinery. In addition, any increased process water shall be treated in the existing treatment system. Therefore, there will be a less than significant impact with implementation of the following mitigation measures.

#### *Mitigation Measures*

*WR-3.1 Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.*

*WR-3.2 Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.*

#### *Residual Impacts*

There would be no residual impacts.

**4.7.5 Cumulative Impacts and Mitigation Measures**

Current operations at the SMF pump approximately 1,100 AF of groundwater per year, which is less than prior usage by the Applicant (NMMATG 2009). The proposed one percent increase in water use of 11 AFY, combined with current water use, would result in a projected water demand of approximately 1,111 AFY, which is less the Applicant’s groundwater rights per the Stipulation. Based on the WSA completed for the Proposed Project (Appendix G), there is sufficient water supply for the proposed throughput increase of 10 percent. In addition, the existing wells have adequate capacity to pump the additional water demand.

In the event of potentially severe to severe climatic drought conditions (as defined in the NMMA TG Water Shortage Condition and Response Plan) other water purveyors in the NMMA (not including the Applicant), would reduce water use through voluntary and mandatory conservation measures, according to the Well Management Plan. Finally, as required by the Stipulation, other water purveyors in the NMMA (NCSD, GSWC, RWC, and Woodlands) led by NCSD are planning to construct a pipeline to deliver supplemental water to the area to reduce or alleviate any future water shortages. Per the Stipulation, the Applicant is not required to participate in the Well Management Plan or Supplemental Water Project. These requirements of the Stipulation were designed to protect the groundwater resources of the NMMA.

Finally, the SMF collects and treats stormwater and water used in the plant operations and discharges the treated water under an NPDES Permit. This treatment and permitting process ensures that the potential pollutants to the groundwater and outfall areas are minimized.

Thus, no cumulative significant impacts to the groundwater supply, existing wells, or water quality are expected.

**4.7.6 Mitigation Monitoring Plan**

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
WR-3.1	Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.	Inspection	During operations	San Luis Obispo County Water Resources Division
WR-3.2	Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing <u>as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.</u>	Review of existing precaution measures	Prior to permit	San Luis Obispo County Water Resources Division