

SECTION 7.0

# Water Supply

This section describes the proposed water supply sources for the Vernon Power Plant (VPP). A map of the project site is presented in Section 2.0 (Figure 2.1-1). Section 7.1 discusses the source and uses of recycled water. Section 7.2 discusses recycled water quality. Section 7.3 discusses the source and uses of potable water. Section 7.4 addresses permits and permitting agencies. Section 7.5 provides the references used to prepare this section.

Water requirements for VPP are presented in Table 7.0-1. As shown in the table, VPP will require approximately 4,048 acre-feet of water in a typical year. Almost all of the water used will be for cooling. Additional information about water resources is provided in Subsection 8.14.

TABLE 7.0-1  
Daily and Annual Water Use for VPP Operations

Water Use	Water Source	Daily Use (gpm)		Annual Use (afy)
		Average	Maximum	
Recycled Water	Central Basin Municipal Water District	2,510	3,850*	4,048
Potable Water	City of Vernon	0.21	30	0.34

\* Includes 10 percent peaking factor over the water balance.

gpm = gallons per minute

afy = acre-feet per year (based on an annual operation of 8,760 hours/year)

## 7.1 Recycled Water Supply

Water demands for cooling and other industrial processes will be met by recycled water, which is highly treated and disinfected to meet the requirements specified in Title 22 of the California Code of Regulations.

The Title 22 recycled water will be primarily used for the cooling tower (roughly 96 percent of water consumption). Treated recycled water also will be used for evaporative cooling of air entering the gas turbines and makeup water for the heat recovery steam generators (HRGSs).

Recycled water will be supplied by the Central Basin Municipal Water District (CBMWD). A new recycled water pipeline will connect the plant to an existing recycled water pipeline on Boyle Avenue, approximately 2,000 feet east of the plant.

The CBMWD's recycled water system will require improvement before sufficient volume of recycled water will be available for VPP. Currently, the recycled water is supplied from the San Jose Creek Water Reclamation Facility via CBMWD's Century pump station. The large number of industrial users in Vernon will eventually increase the demand for recycled water to more than 1.5 billion gallons annually, which will exceed the available capacity at the Century pump station. CBMWD proposes to increase the level of connectivity within the

distribution system and, thus, equalize the burden between the Century pump station and another facility. This project, called the Southeast Water Reliability Project, includes a 10-mile pipeline connecting the existing system in Vernon to another part of the system in nearby Pico Rivera. With the completion of the Southeast Water Reliability Project, CBMWD will be able to provide additional water to Vernon as well as target potential future customers. CBMWD has committed to complete the Southeast Water Reliability Project prior to VPP so that recycled water will be available for the plant's use.

## 7.2 Recycled Water Quality

Table 7.2-1 summarizes the quality of recycled water from CBMWD's existing recycled water system. Constituents selected for inclusion are based on the industrial waste discharge requirements of the Sanitation Districts of Los Angeles County (LACSD), the agency receiving wastewater from the project.

TABLE 7.2-1  
Recycled Water Quality

Parameter	Concentration
Cyanide (total)	0.006 mg/L
Arsenic	0.001 mg/L
Cadmium	< 0.2 mg/L
Chromium (total)	0.0285 mg/L
Copper	0.031 mg/L
Lead	0.001 mg/L
Mercury	< 0.04 mg/L
Nickel	0.0465 mg/L
Silver	< 0.154 mg/L
Zinc	0.051 mg/L
TICH*	0
pH	7.17 (pH units)
Temperature	78.5°F

Source: LACSD, 2005.

\* Total Identifiable Chlorinated Hydrocarbons (TICH) include such pesticides as aldrin, dieldrin, chlordane, DDT, endrin, hexachlorocyclohexane, toxaphene, and PCBs. Chlorinated pesticides will likely be destroyed during treatment to meet Title 22 standards, resulting in an influent concentration of 0 mg/L.

mg/L = milligrams/liter

Water quality will change as recycled water is used for industrial processes. Cooling water treatment will require the addition of chemicals, such as a pH control agent like sulfuric acid, a mineral scale dispersant such as polyacrylate polymer, a corrosion inhibitor (phosphate based), and a biocide such as chlorine dioxide. In addition, some constituents will be altered by the heat generated in the cooling process.

## 7.3 Potable Water

Potable water for drinking, safety showers, fire protection water, service water, and sanitary uses will be provided from the City of Vernon's potable water system using two existing water lines adjacent to the project, one in Soto Street and the other in Seville Avenue.

Potable water use is included in Table 7.0-1. In addition, potable water will be used as an emergency supply for cooling and other industrial uses should the recycled water supply be interrupted for longer than 8 hours. The onsite storage capacity for recycled water will accommodate 8 hours of uninterrupted plant operations once recycled water from CBMWD is unavailable. Therefore, use of potable water for industrial purposes will only occur if recycled water is unavailable for periods longer than 8 hours.

## 7.4 Permits and Permitting Agencies

Permits required and the permitting agencies for water use are listed in Table 7.4-1. See Table 8.14-7 for additional permits related to water resources.

TABLE 7.4-1  
Permits and Permitting Agencies for VPP Water and Wastewater

Permit	Schedule	Agency
Recycled Water User Agreement	The City of Vernon's existing User Agreement with the CBMWD will need to be amended prior to connection. This will occur by mid-2006.	Central Basin Municipal Water District 17140 South Avalon Blvd, Ste. 210 Carson, CA 90746-1296 (310) 217-2222
Application of Service for Potable Water		City of Vernon 4305 Santa Fe Ave. Vernon, CA 90058 Contact: Kevin Wilson, Director of Community Service & Water Department (323) 583-8811

## 7.5 References

Sanitation Districts of Los Angeles County (LACSD). 2005. Final Effluent Quality, FY 2004-05 for Los Coyotes Water Reclamation Plant, San Jose Creek Water Reclamation Plant East, and San Jose Creek Water Reclamation Plant West.