

5.14 Waste Management

This section evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the CPV Vaca Station (CPVVS). Section 5.14.1 describes project site investigations and the waste and waste streams that would be generated by the project. Section 5.14.2 describes the project's environmental analysis in terms of waste and waste disposal sites. Section 5.14.3 discusses potential cumulative effects. Section 5.14.4 describes mitigation measures. Section 5.14.5 presents laws, ordinances, regulations, and standards (LORS) that apply to the generated waste. Section 5.14.6 describes agencies that have jurisdiction over the generated waste and specifies who to contact in those agencies. Section 5.14.7 describes permits required for generated waste and a schedule for obtaining those permits, and Section 5.14.8 provides the references used to prepare this section.

5.14.1 Affected Environment

This section discusses the condition of the proposed CPVVS site, a 24-acre site owned by the City of Vacaville, California, in terms of the potential need to remove or otherwise treat contaminated soil or groundwater at the site, and discusses the various nonhazardous and hazardous waste streams for CPVVS construction and operation.

5.14.1.1 Site Investigations

Investigations of the project site that have been undertaken to determine whether or not contamination is present that will require removal or remediation have included a Phase I Environmental Site Assessment.

5.14.1.1.1 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) was conducted by CH2M HILL for the CPVVS site. This ESA was conducted in accordance with methods prescribed by the American Society for Testing and Materials (ASTM) document entitled "Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process" (Designation: E 1527-93, May 1993)."

The site is currently fallow. Historically, the site has been used for corn and other row-crop agricultural production. The ESA revealed the following recognized environmental conditions (REC) in connection with the CPVVS site:

- Historical, long-term use of the property for agricultural purposes may have resulted in contamination of soil and groundwater through persistent application of agricultural chemicals.
- Historical application of biosolids (i.e., sludge from the City of Vacaville Easterly Wastewater Treatment Plant (EWTP) to the site from the EWTP, may have resulted in contamination of soil and groundwater.

The assessment identified two RECs associated with the CPVVS property. Considering the future intended use of the project site for industrial purposes, potential human health risks are likely to be minimal.

According to the Phase I ESA, there is no immediate need to assess the groundwater quality because of the property's future intended use. The proposed power plant will get its water supply from tertiary treated water from the EWTP, and all wastewater will be treated onsite using a zero liquid discharge (ZLD) system. All of the CPVVS's reclaimable water will be recycled within the plant, and the CPVVS will not discharge any reclaimable water. For these reasons, there will be no groundwater use or discharges associated with the proposed project. A copy of the Final Phase I ESA is included in Appendix 5.14A.

5.14.1.2 Project Waste Generation

Wastewater, solid nonhazardous waste, and liquid and solid hazardous waste will be generated at the CPVVS site during facility construction and operation.

5.14.1.2.1 Construction Phase

During construction, the primary waste generated will be solid nonhazardous waste. However, some nonhazardous liquid waste and hazardous waste (solid and liquid) will also be generated. All of the hazardous wastes will be generated at the plant site. The types of waste and their estimated quantities are described in the following discussion. Typical wastes generated during construction and demolition are identified in Table 5.14-1.

TABLE 5.14-1
Wastes Generated during Construction

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, mineral wool insulation	Construction activities	Normal refuse	200 tons	Nonhazardous	Recycle and/or dispose of in a Class II or III landfill
Scrap metals	Construction activities	Parts, containers	<2 tons	Nonhazardous	Recycle and/or dispose of in a Class III landfill
Empty hazardous material containers	Operations and maintenance of plant	Drums, containers, totes*	<1 ton	Hazardous and nonhazardous solids	Containers <5 gal will be disposed as normal refuse. Containers >5 gal will be returned to vendors for recycling or reconditioning.
Spent welding materials	Construction activities	Solid	1,500 lb	Hazardous	Disposal at a Class I landfill
Waste oil filters	Construction equipment and vehicles	Solids	500 lb	Nonhazardous	Recycle at a permitted TSDF
Used and waste lube oil	Combustion Turbine and steam turbine lube oil flushes	Hydrocarbons	5,000 gal	Hazardous	Recycle at a permitted TSDF
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	100 cu ft	Hazardous	Recycle or dispose at a permitted TSDF

TABLE 5.14-1
Wastes Generated during Construction

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Solvents, paint, adhesives	Maintenance	Solids and liquids	500 gal	Hazardous	Recycle at a permitted TSDf
Spent lead acid batteries	Construction machinery	Heavy metals	10	Hazardous	Store no more than 10 batteries (up to 1-year) – recycle offsite.
Spent alkaline batteries	Equipment	Metals	50 lb	Universal waste solids	Recycle or dispose offsite at an Universal Waste Destination Facility
Waste oil	Equipment, vehicles	Hydrocarbons	500 gal	Non-RCRA hazardous liquid	Dispose at a permitted TSDf
Sanitary waste	Portable toilet holding tanks	Solids and liquids	200,000 gal	Non-hazardous liquid	Remove by contracted sanitary service
Stormwater	Rainfall	Water	6,870 gal/yr	Non-hazardous liquid	Discharge to stormwater drain
Fluorescent, mercury vapor lamps	Lighting	Metals and PCBs	20 lb	Universal waste solids	Recycle or dispose offsite at a Universal Waste Destination Facility
Passivating and chemical cleaning fluid waste	Pipe cleaning and flushing	Liquids	10,000 gal	Hazardous or nonhazardous liquid	Sample and characterize – if clean, dispose of in sanitary sewer; otherwise, manage appropriately offsite
Hydrotest water	Testing equipment and piping integrity	Water	10,000 gal	Hazardous or nonhazardous liquid	Sample and characterize – if clean, dispose of in storm drain; otherwise, manage appropriately offsite

*Containers include <5-gallon containers and 55-gallon drums or totes

RCRA = Resource Conservation and Recovery Act

TSDf = treatment, storage, and disposal facility

Nonhazardous Solid Waste

The following nonhazardous waste streams potentially could be generated from construction of the generating facility and the electric transmission line:

- **Paper, wood, glass, and plastics.** Approximately 200 tons of paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers during project construction. These wastes will be recycled where practical. Waste that cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dumpsters.
- **Metal.** Approximately 2 tons of metal including steel (from welding and cutting operations, packing materials, and empty nonhazardous chemical containers) and

aluminum waste (from packing materials and electrical wiring) will be generated during construction. Waste will be recycled where practical, and nonrecyclable waste will be deposited in a Class III landfill.

Wastewater

Wastewater generated during construction will include sanitary waste, stormwater runoff, equipment washdown water, and water from excavation dewatering during construction (if dewatering is required). Depending on the chemical quality of these wastewaters, they could be classified as hazardous or nonhazardous. As discussed in a later section, wastewater would be sampled and if found hazardous would be disposed of. Methods for disposing of nonhazardous wastewaters are identified in Section 5.14.1.2.3.

Hazardous Waste

Most of the hazardous waste generated during construction will consist of liquid waste, such as water from excavation dewatering (if it contains contaminants), flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated during construction.

When pipes are cleaned and flushed, waste liquid will be generated. The volume of flushing and cleaning liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal. Wastewaters generated during construction could also be considered hazardous, if demonstrated so by sampling. Methods for recycling and disposal of hazardous wastes during construction are described in Section 5.14.4.1.1.

5.14.1.2.2 Operation Phase

During CPVVS facility operation, the primary waste generated will be nonhazardous solid waste. However, varying quantities of solid and liquid hazardous waste will also be generated periodically. The types of wastes and their estimated quantities are discussed below.

Nonhazardous Solid Waste

The CPVVS will produce facility wastes typical of power generation facility operations and maintenance activities. These will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity of all solid nonhazardous waste generated is estimated to be about 50 cubic yards per year (approximately 35 tons per year). Large metal parts will be recycled.

A salt cake waste will be generated by the ZLD system and will be disposed of in a suitable offsite landfill after it has been tested to confirm that it is nonhazardous. If the salt cake is found to be hazardous, it will be disposed of at a hazardous waste landfill. During baseload operation at average ambient conditions (January through May and September through December, a total of 273 days), an average of 22.4 tons per day of salt cake will be generated and transported to an offsite landfill for disposal. During baseload operation at high ambient temperatures (June through July, a total of 92 days), an estimated 42.6 tons per day of salt cake will be generated. Assuming 365 days of operation, expected annual salt cake

generation is estimated at 10,034 tons (6, 115 tons generated during average ambient conditions, and 3,919 tons generated during high ambient conditions).

Nonhazardous Wastewater

The water balance schematic diagram, provided in Section 2, Figure 2.1-6, illustrates the expected liquid waste streams and Table 2.1-1 lists waste stream flow rates. The wastewater collection system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities to be discharged at the EWTP.

General facility drainage will consist of area washdown, sample drains, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping, and will be routed to the facility's concrete-lined wastewater sump. Water from this sump will be sampled and analyzed at an approved lab. If contamination is present, the water will be trucked offsite for disposal at an approved wastewater disposal facility. If sampling results show no contamination, the water will be discharged to the EWTP.

Hazardous Waste

Hazardous waste generated will include waste lubricating oil, used oil filters from turbine equipment, spent catalyst, and chemical cleaning wastes. The catalyst units will contain heavy metals that are considered hazardous. Chemical cleaning wastes, which consist of alkaline and acidic cleaning solutions, will be generated from periodic pipe cleaning. These wastes may contain high concentrations of heavy metals and will be collected for offsite disposal.

The chemical feed area drains will collect spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns. Water collected will be sampled and, if it is not contaminated, released to the EWTP. The quantity of this effluent is expected to be minimal.

Wastes that potentially will be generated during operations at the facility are summarized in Table 5.14-2.

TABLE 5.14-2
Hazardous Wastes Generated During Operations

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil	Small leaks and spills from the gas turbine lubricating oil system	Hydrocarbons	500 gal/yr	Hazardous	Cleaned up using sorbent and rags, disposed of by certified oil recycler
Lubricating oil filters	Gas turbine lubricating oil system	Paper, metal, and hydrocarbons	600 lb/yr	Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	400 gal/yr	Hazardous	Recycled by certified recycler

TABLE 5.14-2
Hazardous Wastes Generated During Operations

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
HRSG CO catalyst units	HRSG (Use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	420,000 lb (every 10 years)	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, equipment wipe down, and similar activity	Hydrocarbons, cloth	One 55-gal container	Hazardous	Recycled by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	150 lb/yr	Hazardous	Recycled or disposed of by certified oil recycler
ZLD Salt Cake	ZLD	Salts	8,176 lbs/yr (for continuous operation)	Hazardous/Non-hazardous depending on lab analysis	Hazardous Material Landfill if hazardous, Municipal Landfill if non-hazardous

5.14.2 Environmental Analysis

5.14.2.1 Significance Criteria

The project could have a significant effect on the environment in terms of waste management if it would do the following (CEQA Guidelines Section 15002(g), Appendix G):

- Be located on a site which is included on a list of hazardous materials sites (Cortese List) compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- Have solid waste disposal needs beyond the capacity of appropriate landfills to accommodate them

The risks or hazards posed by the transportation of hazardous materials, including hazardous wastes, are described and analyzed in Section 5.5, Hazardous Materials Handling.

5.14.2.2 Cortese List

An examination of the California Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances Site List (Cortese List) shows that four of the 37 sites currently on the list for Solano County compiled pursuant to Government Code Section 65962.5 are located within the city limits of Vacaville and Elmira (DTSC, 2008a).

Of the four sites close to CPVVS, the site located in Elmira at the intersection of Holdener Street and A Street is the closest. The site is known as Wickes Forest Industries and is located on 7.5 acres. The Wickes Forest Industries site was a former wood-treating facility that ceased operation in 1982. Past operations resulted in soil and groundwater contamination. Groundwater contamination was discovered beneath the site and beneath adjacent properties. Potential contaminants of concern include chromium VI and arsenic.

The CPVVS site is not located on a Cortese-listed site and is not affected by the Wickes site because of the distance between the two sites (0.9 miles). No impacts will result related to Cortese-listed properties.

5.14.2.3 Solid Waste Disposal

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste, or garbage) will be recycled or deposited in a Class III landfill. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite treatment, storage, and disposal (TSD) facility for treatment or recycling, or will be deposited in a permitted Class I landfill. The following sections describe the waste disposal sites feasible for disposal of CPVVS wastes.

5.14.2.3.1 Nonhazardous Waste

Approximately 205 tons of solid waste will be generated during CPVVS construction, and solid waste will continue to be generated during its operation. Other solid wastes will be recycled to the extent possible, and what cannot be recycled will be disposed of at a permitted landfill as discussed below.

It is anticipated that all excavated soil will be used onsite for grading and leveling purposes. In the event that some excavated soil is not reused onsite, it would be classified for disposal on the basis of sampling completed once the soil is excavated and stockpiled. Soil determined to be nonhazardous could be suitable for reuse at a construction site or disposal at a regional disposal facility, depending on the chemical quality.

Vacaville Sanitary Service (VSS) is the local service provider for residential, commercial, and industrial solid waste hauling. Under a franchise agreement, VSS holds the exclusive right to collect and haul solid waste in the Vacaville city limits. The primary disposal facility is the privately owned and operated Norcal Waste Systems Hay Road Landfill located in the unincorporated county east of Vacaville, approximately 6.8 miles from the CPVVS site. The Hay Road Landfill has adequate capacity to handle and dispose of solid waste generated by the CPVVS facility, as shown in Table 5.14-3. The other landfill included in this table, Potrero Hills Landfill, is a likely alternative to the Hay Road Landfill, until its estimated closure date in 2011.

TABLE 5.14-3
Solid Waste Disposal Facilities in the Vicinity of the CPVVS

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity* (Cubic Yards)	Remaining Capacity* (Cubic Yards)	Permitted Throughput* (Tons per Day)	Estimated Closure Date*	Violation of Minimum State Standards Noted*
Hay Road Landfill, Inc. (B+J Landfill)	Vacaville, CA	II, III	28,240,000	22,476,431	2,400	1/1/2070	Yes (10/07, 9/07, 8/07, 4/07)
Potrero Hills Landfill	Suisun City, CA	III	21,500,000	8,200,000	4,330	1/1/2011	Yes (7/07, 6/07)

* Based on California Integrated Waste Management Board (CIWMB) Solid Waste Information System Database (CIWMB, 2008a)

According to the CIWMB, Hay Road Landfill has a total capacity of 28.24 million cubic yards of refuse and the estimated remaining capacity as of April 30, 2006 was 22.476 million cubic yards. According to the CIWMB, there was one enforcement action against Hay Road Landfill in the last 12 months. The Notice of Intent to List was issued on October 31, 2007 with a scheduled compliance date of February 6, 2008. The final compliance date occurred on November 30, 2007 (CIWMB, 2008a).

Adequate landfill capacity exists; therefore, disposal of solid nonhazardous waste will not be a constraint on CPVVS development. Impacts related to landfill capacity will be less than significant.

5.14.2.3.2 Hazardous Waste

Hazardous waste generated at the CPVVS facility will be stored at the facility for less than 90 days. The waste will then be transported to a TSD facility by a permitted hazardous waste transporter. These facilities vary considerably in what they can do with the hazardous waste they receive. Some can only store waste, some can treat the waste to recover usable products, and others can dispose of the waste by incineration, deep-well injection, or landfilling. (Incineration and deep-well injection of these materials are not permitted in California.)

According to DTSC, there are 61 facilities in California that can accept hazardous waste for treatment and recycling (DTSC, 2008b). For ultimate disposal, California has three hazardous waste (Class I) landfills. The closest commercial hazardous waste disposal facility is Waste Management's Kettleman Hills Landfill.

Waste Management Kettleman Hills Landfill

This facility accepts Class I and II waste. The B-18 Landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordinance; this landfill has permitted capacity of 10 million cubic yards and a remaining capacity of approximately 2.6 million cubic yards as of June 2007 (Luibel, 2007). The life expectancy remaining for Landfill B-18 is about 3 years; however, expansion is anticipated (Luibel, 2007). Expansion of the facility would change the closure date to 2036 (Yarbrough, 2005).

Clean Harbors Buttonwillow Landfill

This landfill is permitted at 14.3 million cubic yards (CIWMB, 2008a; Buoni, 2007) and has approximately 9.2 million cubic yards of remaining capacity as of February 2006 (Buoni, 2007). At the current deposit rate, the landfill is permitted to accept waste until 2040 (CIWMB, 2007a). Buttonwillow has been permitted to accept all hazardous wastes except flammables, polychlorinated biphenyls (PCBs) with a concentration greater than 50 parts per million, medical waste, explosives, and radioactive waste with radioactivity greater than 1,800 picocuries (Buoni, 2007).

Clean Harbors Westmoreland Landfill

This facility is not currently open and accepting waste because the Buttonwillow facility can accommodate the current hazardous waste generation rate. The facility is, however, available in reserve and could be reopened if necessary. The landfill's conditional use permit prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCB, dioxins, air- and water-reactive wastes, and strong oxidizers.

Additional Facilities

In addition to hazardous waste landfills, there are numerous offsite commercial liquid hazardous waste treatment and recycling facilities in California. Some of the closest facilities include Clean Harbors in San Jose; Evergreen Environmental Services in Davis; Evergreen Oil Company in Newark; Ramos Environmental Services in West Sacramento; and Veoliaes (Onyx) Environmental Services in Richmond (DTSC, 2008b).

5.14.2.4 Waste Disposal Summary

The CPVVS facility will generate nonhazardous solid waste that will add to the total waste generated in Solano County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by CPVVS. It is estimated that CPVVS will generate approximately 200 tons of solid waste during construction (including approximately 1 tons of solid hazardous waste) and about 10,070 tons a year from operations (including approximately 1 ton of solid hazardous waste, and 10,034 tons of salt cake). Considering that 1,080,121 tons of solid waste were landfilled in Solano County in the year 2006, CPVVS's contribution (including the salt cake if determined to be non-hazardous) will likely represent less than 1 percent of the county's total waste generation (CIWMB, 2008b). Therefore, the impact of the project on solid waste recycling and disposal capacity will not be significant.

Hazardous waste generated will consist of waste oil, filters, selective catalytic reduction SCR and oxidation catalysts, fluids used to clean piping, and potentially the ZLD salt cake. The waste oil, catalysts, and the deionization trailer unit will be recycled. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, the effect of CPVVS on hazardous waste recycling, treatment, and disposal capability will not be significant.

5.14.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355).

The quantities of nonhazardous and hazardous wastes that would be generated during CPVVS construction and operation would be relatively low: an estimated 205 tons of solid waste during construction and approximately 10,070 tons per year during operation. Recycling efforts would be prioritized wherever practical, and capacity is available in a variety of treatment and disposal facilities. There is currently sufficient landfill capacity available in the project area. Therefore, the added waste quantities generated by the CPVVS would not result in significant cumulative waste management impacts.

5.14.4 Mitigation and Waste Management Methods

The handling and management of waste generated by CPVVS will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (for example, high-efficiency cleaning methods). The next level of waste management will involve reusing or recycling wastes (for example, used oil recycling). For wastes that cannot

be recycled, treatment will be used, if possible, to make the waste nonhazardous (for example, neutralization). Finally, offsite disposal will be used for residual wastes that cannot be reused, recycled, or treated.

The following sections present methods for managing nonhazardous and hazardous waste generated by CPVVS.

5.14.4.1 Construction Phase

Handling requirements and mitigation measures for the handling of wastes during construction are described in the following sections.

5.14.4.1.1 Nonhazardous Wastes

Nonhazardous solid waste generated during construction will be collected in onsite dumpsters and picked up periodically by VSS. The waste will then be taken to the Norcal Waste Systems Hay Road Landfill or another local landfill. Recyclable materials can be segregated and transported by construction contractors or other private haulers to an area recycling facility. VSS provides drop boxes or debris boxes for large quantities of recyclables.

Wastewater generated during construction will include sanitary waste and could include excavation dewatering water, equipment washwater, and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Excavation dewatering water will be contained in portable tanks and sampled prior to offsite disposal. Equipment washwater will be contained at designated wash areas and will be disposed offsite. Stormwater runoff will be managed in accordance with a stormwater management permit, which will be obtained before construction starts. Nonhazardous wastewater generation will be minimized by water conservation and reuse measures.

5.14.4.1.2 Hazardous Wastes

Most hazardous waste generated during construction will consist of liquid waste, such as excavation dewatering water, flushing and cleaning fluids, passivating fluids, and solvents. Some solid waste, in the form of welding materials and dried paint, may also be generated. Nonhazardous materials will be used whenever possible to minimize the quantity of hazardous waste generated. The construction contractor will be the generator of hazardous construction waste and will be responsible for proper handling in compliance with all applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. This waste will be moved daily to the contractor's 90-day hazardous waste storage area, located at the plant construction laydown area. The waste will be delivered to an authorized hazardous waste management facility, before expiration of the 90-day storage limit.

5.14.4.2 Operation Phase

Handling requirements and mitigation measures for the handling of wastes during operation are described in the following sections.

5.14.4.2.1 Nonhazardous Wastes

Wastewater from facility sinks, toilets, and showers will be disposed of by the EWTP.

Nonhazardous solid waste or refuse will be collected and deposited in a local landfill. Whenever practical, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that must be disposed of in a landfill.

5.14.4.2.2 Hazardous Wastes

To avoid the potential effects on human health and the environment from handling and disposing of hazardous wastes, procedures will be developed to ensure proper labeling, storage, packaging, recordkeeping, and disposal of all hazardous wastes. The following general procedures will be employed:

- The CPVVS will be classified as a hazardous waste generator and will obtain a site-specific U.S. Environmental Protection Agency (EPA) identification number that will be used to manifest hazardous waste from the CPVVS facility. Hazardous waste from the CPVVS facility will be stored onsite for less than 90 days before offsite disposal, treatment, or recycling.
- Hazardous wastes will be accumulated at the generating facility according to the California Code of Regulations Title 22 requirements for satellite accumulation.
- Hazardous wastes will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if not roofed, will be sized for an additional 20 percent to allow for rainfall. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler using a hazardous waste manifest. Wastes will be shipped only to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to the DTSC. Copies of manifests, reports, waste analyses, and other documents will be kept onsite and will remain accessible for inspection for at least 3 years.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever practical, and wastes will be recycled whenever practical.

Specifically, hazardous waste handling will include the following practices. Handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills:

- Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor, such as Evergreen Oil, Inc.
- Spent oil filters and oily rags will be recycled.
- Spent SCR and oxidation catalysts will be recycled by the supplier, if possible, or disposed of in a Class I landfill.

5.14.4.3 Facility Closure

When CPVVS is closed, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period greater than the time required for normal maintenance, including overhaul or replacement of the combustion turbines. Causes for temporary closure could be a disruption in the supply of natural gas, flooding of the site, or damage to the plant from earthquake, fire, storm, or other natural causes. Permanent closure would consist of a cessation in operations with no intent to restart operations and could result from the age of the plant, damage to the plant beyond repair, economic conditions, or other unforeseen reasons. Handling of wastes for these two types of closure are discussed below.

5.14.4.3.1 Temporary Closure

For a temporary closure, where there is no release of hazardous materials, facility security will be deployed on a 24-hour basis, and the CEC will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations will be implemented. This plan will be prepared as described in the plant closure section. The plan will be developed to ensure conformance with all applicable LORS and the protection of public health and safety and the environment. The plan, depending on the expected duration of the shutdown, could include draining all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS, as discussed in Section 5.14.5.

If the temporary closure is in response to facility damage, or where there is a release or threatened release of hazardous waste or materials into the environment, procedures will be followed as set forth in a risk management plan. Procedures include methods to control releases, notification of applicable authorities and the public, emergency response, and training for generating facility personnel in responding to and controlling releases of hazardous materials and hazardous waste. Once the immediate problem of hazardous waste and materials release is contained and cleaned up, temporary closure will proceed as described for a closure where there is no release of hazardous materials or waste.

5.14.4.3.2 Permanent Closure

The planned life of the generation facility is 30 years, although operation could be longer. When the facility is permanently closed, the handling of nonhazardous and hazardous waste and hazardous materials will be part of a general closure plan that will attempt to maximize the recycling of facility components. Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to protect public health and safety and the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste-collection facilities. All hazardous wastes will be disposed of according to applicable LORS. The site will be secured 24 hours per day during the CPVVS decommissioning activities.

5.14.4.3.3 Monitoring

Because the environmental impacts caused by construction and operation of the facility are expected to be minimal, extensive monitoring programs will not be required. Generated waste, both nonhazardous and hazardous, will be monitored during project construction and operation in accordance with the monitoring and reporting requirements mandated by the regulatory permits to be obtained for construction and operation.

5.14.5 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at CPVVS will be governed by federal, state, and local laws. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and to protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. Table 5.14-4 presents a summary of the LORS applicable to waste handling at the CPVVS facility.

TABLE 5.14-4
Laws, Ordinances, Regulations, and Standards for Waste Management

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
RCRA Subtitle D	Regulates design and operation of solid waste landfills. CPVVS solid waste will be collected and disposed of by a collection company in conformance with Subtitle D.	CIWMB	Sections 5.14.5.1, 5.14.4.1, 5.14.4.2.1, 5.14.1.2.2
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with Subtitle C.	DTSC	Sections 5.14.5.1, 5.14.4.1.2, 5.14.4.2.2, 5.14.1.2.2
Clean Water Act (CWA)	Controls discharge of wastewater to the surface waters of the United States. Industrial and sanitary wastewater will be discharged to the City of Vacaville's EWTP.	Regional Water Quality Control Board	Sections 5.14.5.1, 5.14.4.1.1, 5.14.4.2.1
State			
California Integrated Waste Management Act (CIWMA)	Controls solid waste collectors, recyclers, and depositors. CPVVS solid waste will be collected and disposed of by a collection company in conformance with the CIWMA.	CIWMB	Sections 5.14.5.2, 5.14.4.1, 5.14.4.2.1, 5.14.1.2.2
Hazardous Waste Control Law (HWCL)	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with the HWCL.	DTSC	Sections 5.14.5.2, 5.14.4.1.2, 5.14.4.2.2, 5.14.1.2.2
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to surface waters and groundwaters of California. Industrial and sanitary wastewater will be discharged to the City of Vacaville's EWTP.	Regional Water Quality Control Board	Sections 5.14.5.2, 5.14.4.1.1, 5.14.4.2.1
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids. Wastes will be accumulated and stored in accordance with Fire Code requirements. Permits for storage containers will be obtained, as needed, from the Vacaville Fire Department.	Vacaville Fire Department	Section 5.14.7, 5.14.5.4, 5.14.4.2.2

TABLE 5.14-4
Laws, Ordinances, Regulations, and Standards for Waste Management

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Local			
City of Vacaville General Plan, Policies 9.4G1, 9.4G2, 9.4I1, 9.4I2, 9.4I3	Provides guidance for remediation of contaminated sites and for siting and management of facilities that store, collect, treat, dispose or transfer hazardous waste. CPVVS will comply with the City's Hazardous Materials and Waste requirements as detailed in Chapter 9, Section 9.4 of the General Plan.	Solano County Department of Resource Management	Sections 5.14.7, 5.14.5.3, 5.14.4.2.2
Solano County Integrated Waste Management Plan	Provides guidance for local management of solid waste and household hazardous waste (incorporates the County's Source Reduction and Recycling Elements, which detail means of reducing commercial and industrial sources of solid waste). Waste will be recycled in a manner consistent with applicable LORS.	Solano County Resource Management Department	Section 5.14.6, 5.14.5.3, 5.14.4.1.2
Solano County Department of Resource Management various programs	Solano County Department of Resource Management is the Certified Unified Program Agency (CUPA) for Solano County that regulates and conducts inspections of businesses that handle hazardous materials, hazardous wastes, and/or have underground storage tanks. Solano County Department of Resource Management programs include assistance with oversight on property redevelopment (brownfields); and voluntary or private oversight cleanup assistance. CPVVS will comply with Solano County Department of Resource Management requirements concerning storage and handling of hazardous materials and wastes and will also cooperate with Solano County Department of Resource Management on resolution of environmental issues at the site.	Solano County Department of Resource Management	Section 5.14.6, 5.14.7, 5.14.5.3, 5.14.4.2.2

5.14.5.1 Federal LORS

EPA regulates wastewater under the CWA. The federal statute that controls nonhazardous and hazardous waste is the RCRA 42 USC 6901, et seq. RCRA's implementing regulations are found at 40 CFR 260, et seq. Subtitle D assigns responsibility for the regulation of nonhazardous waste to the states; federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring requirements for solid waste disposal facilities. Subtitle C controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a comprehensive "cradle-to-grave" system of hazardous waste management techniques and requirements. It applies to all states and to all hazardous waste generators (above certain levels of waste produced). CPVVS will conform to this law in its generation, storage, transport, and disposal of any hazardous

waste generated at the facility. EPA has delegated its authority for implementing the law to the State of California.

5.14.5.2 State LORS

Wastewater is regulated by the State and Regional Water Quality Control Boards under the Porter-Cologne Water Quality Control Act. Nonhazardous solid waste is regulated by the CIWMA of 1989, found in Public Resources Code Section 40000, et seq. This law provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. Counties are required to submit Integrated Waste Management Plans to the state. This law directly affects Solano County and the solid waste hauler and disposer that will collect CPVVS solid waste. It also affects CPVVS to the extent that hazardous wastes are not to be disposed of along with solid waste.

RCRA allows states to develop their own programs to regulate hazardous waste. The programs must be at least as stringent as RCRA. California has developed its own program in the California HWCL (Health and Safety Code Section 25100, et seq.). Because California has elected to develop its own program, the HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at CPVVS. However, the HWCL includes hazardous wastes that are not classified as hazardous waste under RCRA. Because hazardous wastes will be generated at the CPVVS facility during construction and operation, the HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

5.14.5.3 Local LORS

The Solano County Resource Management Department is certified by the CIWMB as the Local Enforcement Agency for solid waste facilities in Solano County and will be responsible for administering and enforcing the CIWMA for solid, nonhazardous waste for the CPVVS.

For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. Solano County Department of Resource Management is the local entity responsible for inspecting hazardous waste generators and reviewing their procedures for storage, treatment, and disposal of hazardous wastes and for environmental contamination issues and site redevelopment (brownfields development)

The City of Vacaville manages waste generation, recycling, and disposal programs through its Public Works Department. In this regard, the City provides assistance to businesses in achieving its overall goal of maximizing recycling and minimizing waste that is landfilled. The City of Vacaville General Plan (1980) also provides guidance for remediation of contaminated sites and for siting and management of facilities that store, collect, treat, dispose or transfer hazardous waste.

For emergency spills, Solano County Fire Department has a countywide Hazardous Materials (HazMat) Team consisting of firefighters who have completed formal training in hazardous materials incident response. The HazMat Team will identify the type and source of the hazardous material, oversee evacuation of people, and confine the spilled material, if possible. Material cleanup is the responsibility of the facility causing the spill. The closest

fire station to CPVVS is the City of Vacaville Fire Station No. 72 at 2001 Ulatis Drive, Vacaville. The station is approximately 3.5 miles away and would provide the first response to a fire at the project site. If hazardous materials were involved in the incident, Station No. 72 would be the first on-site, requesting additional resources from the Fairfield Station of the Solano County Fire Department. The Fairfield Station, with trained hazmat teams and the county's hazmat equipment, is approximately 14.6 miles from the project site (1633 Union Ave, Fairfield).

5.14.5.4 Codes

The design, engineering, and construction of hazardous waste storage and handling systems will be in accordance with all applicable codes and standards:

- The Uniform Fire Code
- The Uniform Building Code
- The Uniform Plumbing Code
- California Building Code
- California Fire Code
- City of Vacaville Municipal Code

5.14.6 Agencies and Agency Contacts

Several agencies, including EPA at the federal level and DTSC and California Environmental Protection Agency at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the CPVVS project. The regulations, however, are administered and enforced primarily through the Solano County Department of Resource Management, which is the designated CUPA. The persons to contact for nonhazardous and hazardous waste management are listed in Table 5.14-5.

TABLE 5.14-5
Agency Contacts for Waste Management

Issue	Agency	Contact
Nonhazardous Waste		
Solid Waste and Recycling	Solano County Department of Resource Management, Hazardous Materials Section 675 Texas Street, Suite 5500 Fairfield, CA 94533	Narcisa Untal Senior Planner (707) 784-6765 nuntal@solanocounty.com
Hazardous Waste		
Hazardous Waste Compliance and Inspections	Solano County Department of Resource Management, Hazardous Materials Section 675 Texas Street, Suite 5500 Fairfield, CA 94533	Albert G. Netto Senior Hazardous Materials Specialist (707) 784-6765 anetto@solanocounty.com

5.14.7 Permits and Permit Schedule

The temporary storage of hazardous wastes at the CPVVS will be included in the Hazardous Materials Business Plan submitted to the Solano County Department of

Resource Management as described in Section 5.5, Hazardous Materials. No additional permits are required.

5.14.8 References

Buoni, Marianna. 2007. Clean Harbor's Buttonwillow Landfill. Personal communication with John Putrich/CH2M HILL. June 11.

California Integrated Waste Management Board (CIWMB). 2008a. Solid Waste Information System (SWIS) Database, Solano County, April 17, 2008.

<http://www.ciwmb.ca.gov/SWIS/SiteListing.asp>

California Integrated Waste Management Board (CIWMB). 2008b. *2006 Landfill Summary Tonnage Report*. <http://www.ciwmb.ca.gov/Landfills/Tonnages/>. April 17, 2008.

City of Vacaville. 1980. *City of Vacaville General Plan*.

Department of Toxic Substance Control (DTSC). 2008a. DTSC's Hazardous Waste and Substances Site List (Cortese List), Solano County, April 17, 2008.

http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

Department of Toxic Substance Control (DTSC). 2008b. *California Commercial Offsite Hazardous Waste Management Facilities*. April 17, 2008.

Luibel, Helen. 2007. Waste Management Inc., Kettleman Hills Facility. Personal communication with John Putrich/CH2M HILL. June.

Yarbrough, T. 2005. Waste Management Kettleman Hills. Personal communication with Sarah Madams/CH2M HILL. March 8 and August 30.