

5.14 WASTE MANAGEMENT

This section discusses the generation, storage, and disposal of hazardous and non-hazardous wastes from the proposed ESPR Project. Included in the discussion are the environmental conditions at the ESGS, descriptions of waste streams generated during construction and operation, descriptions of applicable waste disposal sites to be used by the facility, proposed waste mitigation methods to minimize impacts to the environment, and applicable laws, ordinances, regulations, and standards (LORS).

5.14.1 Affected Environment

5.14.1.1 Plant Site

A Phase I Environmental Site Assessment (ESA) of the ESGS has been prepared in accordance with American Society for Testing and Materials (ASTM) Practice E 1527-00 and is included as Appendix T of this document. The objective of the Phase I ESA was to identify “recognized environmental conditions” that may exist on the ESGS site and in the vicinity of the proposed pipelines. A site walk was conducted on October 25, 2000. The following areas were observed: (1) hazardous materials and waste storage areas; (2) sumps and oil/water separators; (3) power blocks and their surrounding areas; (4) transformers and the surrounding bedding material; (5) aboveground storage tanks; and (6) fuel pipelines. An environmental database review was conducted to identify sites within a 1-mile radius of the ESPR Project for potential environmental concerns (URS, 2000). Sites with identified subsurface contamination within 1 mile of ESGS are shown on Figure 5.14-1. In addition, numerous previous investigation reports that characterize subsurface conditions were reviewed.

Based on the results of the November 2000 Phase I ESA, the following recognized environmental conditions for ESGS were documented:

- Total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) have been detected in soil and groundwater beneath at ESGS. Quarterly groundwater monitoring is conducted by Chevron in accordance with the Los Angeles Regional Water Quality Control Board (LARWQCB) requirements stipulated in Chevron’s Cleanup and Abatement Order 88-055.
- TPH, VOCs, and metals have been detected in groundwater beneath the retention basins. Quarterly groundwater monitoring is conducted by Southern California Edison (SCE) in accordance with Department of Toxic Substances Control (DTSC) requirements stipulated in SCE’s Consent Order for the retention basins.

- TPH were detected in soil and groundwater underlying the fuel-oil within the aboveground storage tanks.
- Oil staining was observed in the bedding material beneath and around transformers adjacent to Units 1 through 4.
- VOCs were detected in soil and groundwater near the Hazardous Waste Storage area.

With the exception of the Chevron El Segundo Refinery, other sites identified in the environmental database within 1 mile of ESGS (e.g., Chevron service station at 601 S. Vista Del Mar Boulevard and leaking underground storage tank site on Franklin Avenue in El Segundo) are not expected to impact the ESPR Project.

Demolition of the existing structures at the ESGS and construction of the new structures will require excavation to an approximate maximum depth of 20 feet below current grade. As described in more detail below in Sections 5.14.2, hazardous and non-hazardous wastes may be generated during the demolition and construction phases. Because some of the excavation will be below the groundwater level, dewatering of the excavation area will be required. Therefore, hydrocarbon-impacted soil and groundwater may be generated during the demolition and construction phases. A more detailed description of the soil and groundwater conditions is provided below in Section 5.14.2.

5.14.1.2 Offsite Structures

The water supply lines will be laid within the street rights-of-way in the City of El Segundo and the community of Playa del Rey in the City of Los Angeles. These pipelines are proposed to be buried in a common trench along or beneath existing streets. The new reclaimed water supply line will begin at a tie-in point to an existing 12-inch diameter reclaimed water main near the intersection of Richmond Street and El Segundo Boulevard, in the City of El Segundo. The new firewater supply line will begin at a tie-in point to an existing 18-inch diameter city water main at the intersection of Eucalyptus Drive and El Segundo Boulevard in the City of El Segundo. The pipelines will be routed as shown on Figure 3.2-1. Approximately 1.75 miles of the new city water line will be routed parallel to the new reclaimed water line and installed within a trench shared by both pipelines. Existing land uses within 0.5 mile of the new water supply lines include industrial, residential, commercial, open space, and public space.

Sanitary wastes from the proposed combined-cycle plant and existing generating plant will be discharged via a new line to the municipal sanitary sewer that is operated by the City of Manhattan Beach. As shown on Figure 3.2-1, the sanitary waste line will begin on the plant site and be routed to the south property line for approximately 150 feet to an existing manhole at the intersection of The Strand and 45th Street in the City of Manhattan Beach. Existing land uses within 0.5 mile of the sanitary waste line include industrial, residential, commercial, open space, and public space.

The water supply and sanitary waste water pipelines will be located in areas where naturally occurring soils have been disturbed, mixed or replaced as part of the existing improvements. The water and sanitary wastewater pipelines are proposed to be buried in trenches along existing city streets and paved over after installation. During excavation activities within street rights-of-way, it is possible that previously undiscovered contaminated soil might be encountered that cannot be placed in trenches as backfill, resulting in non-hazardous, or possibly hazardous, waste soil. Groundwater is not expected to be encountered during the installation of these pipelines.

The aqueous ammonia pipeline will begin at a tie-in point within the Chevron Refinery and will be routed for approximately 0.7 mile to the north perimeter fence of the power plant site via the Vista del Mar Boulevard overpass (refer to Figure 3.2-1). The aqueous ammonia pipeline will be suspended on pipe racks; therefore installation of the pipeline is not expected to generate waste materials.

Worker parking and material and equipment staging areas will be required during the construction period. Staging areas will serve as base stations for employees, field office locations, laydown areas, and storage of materials, equipment, and vehicles. Five potential temporary construction-laydown areas and seven potential temporary construction-parking areas have been identified for the ESPR Project (Figure 5.14-1). Table 5.9-3 identifies the location, area size, existing land use, and distance from plant site for these potential construction laydown/parking areas. Some grading and placement of gravel or pavement is expected to be required at one or more of the construction laydown and worker parking areas, but these activities are not expected to generate wastes that will require management.

5.14.1.3 Non-Hazardous Solid Waste Disposal

Existing non-hazardous solid waste disposal facilities in the general area of the ESPR Project are listed in Table 5.14-1. Three available Class III landfills are listed in Table 5.14-1; they are located in Corona (El Sobrante), Simi Valley (Simi Valley Landfill), and Orange County (Frank R. Bowerman), California, respectively. They accept non-hazardous wastes and inert

solid wastes, including construction/demolition wastes. Liquid wastes are not accepted by these landfills. Industrial process solid waste is accepted on a case-by-case basis.

There are several soil treatment and soil recycling facilities in southern California that accept hydrocarbon-impacted soil that is classified by the generator as a non-hazardous waste per Resource Conservation and Recovery Act (RCRA) and the California Code of Regulations Title 22 (CCR Title 22). Acceptable levels for treatment or recycling are established by the individual facilities. Three soil treatment and/or recycling facilities listed in Table 5.14-1 are located in Lynwood (American Remedial Technologies), Adelanto (TPS Technologies, Inc.), and Azusa (Thermal Remediation Systems), California.

5.14.1.4 Hazardous Solid Waste Disposal

Hazardous waste generated at the power plant will be taken offsite for recycling or disposal by a permitted hazardous waste transporter to a permitted treatment, storage, and disposal facility or Class I landfill. There are three Class I landfills located in California, including Laidlaw's Buttonwillow Landfill in Kern County, Laidlaw's landfill in Imperial County, and Chemical Waste Management's Kettleman Hills Landfill in King County. The permitted, operating, and remaining capacities of these landfills are described in Table 5.14-1. Hazardous waste generated during construction and operational phases at the ESPR Project is not expected to significantly impact available landfill capacity.

5.14.1.5 Facility Effluent Disposal

The current ESGS facility discharges up to 607 million gallons per day (MGD) of effluent consisting of non-contact once-through cooling water, treated chemical metal cleaning wastes, stormwater, non-chemical metal cleaning wastes, low volume in-plant wastes and treated sanitary wastes into Santa Monica Bay. Effluent from Units 1 and 2 is discharged through Outfall No. 001 and effluent from Unit 3 and 4 is discharged through Outfall No. 002. Effluent is currently disposed to Santa Monica Bay under NPDES Permit No. CA0001147, CI 4667. The outfalls and the nature of existing and Project waste streams are summarized in Table 5.5-5.

5.14.1.6 Hazardous And Non-Hazardous Wastewater (Non-Effluent Waste Streams)

One southern California wastewater treatment and recycling facility is listed in Table 5.14-1 that may accept RCRA hazardous, non-RCRA hazardous, and non-hazardous wastewater. DeMenno/Kerdoon located in Compton, California receives an average of approximately 82,200 gallons per day of wastewater. The operating capacity is approximately 4.6 million

TABLE 5.14-1**WASTE RECYCLING/DISPOSAL FACILITIES**

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Capacity	Operating Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
El Sobrante Landfill (Solids Disposal) 10910 Dawson Canyon Rd. Corona, CA 92883	Class III	4,000 tons per day	4,000 tons per day	50 years	2050	No
Simi Valley Landfill (Solids Disposal) 2801 Madera Rd. Simi Valley, CA 93065	Class III	4,000 tons per day	4,000 tons per day	20 to 50 years	2020 - 2050	No
Frank R. Bowerman Landfill 11002 Bee Canyon Access Road Irvine, CA 92602	Class III	117 million cyd/year	8500 tons per day	84.1 million cyd	2024	Yes
Waste Management Kettleman Hills Landfill (Solids Disposal) 36251 Old Skyline Rd. Kettleman City, CA 93239	Class I	10.7 million cyd/year	Current Operating Capacity Not Available	8 million cyd	2037 – 2038	No
Laidlaw Buttonwillow Landfill (Solids Disposal) Kern County, CA	Class I	13 million cyd/year	130,000 – 150,000 cyd/year	11 million cyd	2068 – 2078	No
Laidlaw Imperial County Landfill (Solids Disposal) Imperial County, CA	Class I	4 million cyd/year	110,000 cyd/year	2.9 million cyd	2021	No
Thermal Remediation Solutions (Solids Recycling) 1211 West Gladstone Ave. Azusa, CA 91702	Class III	200,000 tons per year	2,000 tons per day	Not applicable	Not applicable	No
TPS Technologies, Inc. (Soil Recycling) 12328 Hibiscus Ave. Adelanto, CA 92301	Not Applicable	Not Applicable	350,000 tons per year	Not Applicable	Not Applicable	No outstanding previous violation

TABLE 5.14-1

(CONTINUED)

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Capacity	Operating Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
American Remedial Technologies (Solids Recycling) 2680 Seminole Ave. Lynwood, CA 90262	Class III	200,000 tons per year	19,900 tons per month	Not applicable	Not applicable	One Notice of Violation pertaining to odor in Year 2000
Liquid Recycling/Waste Disposal Site	Title 23 Class	Permitted Capacity	Operating Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
DeMenno/Kerdoon (Liquids Recycling) 2000 N. Alameda St. Compton, CA 90222	Not applicable	84.1 million gallons per year of oily and 123 million gallons per year of waste oil	~30,000,000 gallons per year	Not applicable	Not applicable	Not from lead agency in past 2 years and no outstanding previous violations

gallons per month of waste oil and oily water. The permitted capacity is 123 million gallons per year of waste oil and 84.1 million gallons per year of oily water. Oil is recovered and recycled at DeMenno/Kerdoon. The ESGS has discharged routine and non-routine oily water and waste oil generated during periodic equipment repairs, lube oil flushes, oil/water separator (Table 5.14-4) at DeMenno/Kerdoon.

5.14.2 Environmental Consequences

The analysis of impacts related to waste management from the ESPR project is based on significance criteria summarized as follows:

- Non-hazardous solid wastes must not significantly alter available landfill, recycling or treatment program capacities.
- Non-hazardous liquid wastes must not cause a publicly owned treatment system to violate any applicable waste discharge requirements.
- Hazardous solid wastes must not significantly alter available Class I landfill capacity.
- The facility must comply with all applicable laws regarding the handling of hazardous wastes.

Additionally, according to the California Environmental Quality Act, Appendix G Guidelines, a project has a significant impact when it:

- Breaches standards relating to solid waste or litter control
- Creates a potential public health hazard or involves materials which pose a hazard, or
- Results in a need for new systems or substantial alterations to waste disposal facilities.

The following sections describe the wastes that are expected to be generated during the construction and operation of the ESPR Project, including pipelines, and how non-hazardous solid waste, wastewater, and hazardous solid and liquid wastes will be disposed.

5.14.2.1 Construction

5.14.2.1.1 Site Preparation. The demolition of ESGS Units 1 and 2 will generate non-hazardous and hazardous wastes. Dewatering will be required during the removal of Unit 1 and 2 foundations. It is anticipated that the groundwater levels will be lowered approximately 14 feet below the average groundwater elevation during this demolition phase. Groundwater beneath Units 1 and 2 has been impacted by TPH and VOCs and will consequently require

management in accordance with LORS during this demolition phase. This is discussed below.

Non-Hazardous Waste. Solid waste generated from demolition activities will include scrap metal, glass, concrete foundations, concrete stacks, asphalt, lumber, plastic, and empty non-hazardous containers. Management of these wastes will be the responsibility of the contractor(s). Typical management practices by the appropriate contractor include recycling when possible, proper storage of waste to prevent wind dispersion, and routine pick-up and disposal of waste to approved local Class III landfills.

Hazardous Waste. Hazardous waste associated with Asbestos Containing Materials (ACM), lead-based paint, and subsurface soil and groundwater is anticipated during demolition activities. Prior to the acquisition of ESGS by El Segundo Power LLC, SCE was in the process of implementing a 5-year plan to remove ACM from Units 1 through 4. It is estimated that approximately 60 percent of the ACM have been removed. The extent of Regulated Building Materials (RBM) that contain lead-based paint has not been quantified. ACM and RBM removal within ESGS is continuing. It is expected that nearly all ACM and RBM will be removed by operation of Units 1 and 2 during summer of 2001. Remaining ACM and RBM will be removed at the beginning of demolition.

Current estimates of the amount of ACMs and RBMs are provided in Tables 5.14-2 and 5.14-3. A final survey prior to demolition will establish the amount of remaining ACMs and RBMs to be removed as part of the ESPR Project. It is anticipated that 90% of the ACMs and RBMs in Tables 5.14-2 and 5.14-3 will be removed. Air monitoring and project inspection, including the execution of clearance protocols and procedures, will be included in the asbestos abatement oversight during the demolition phase for the safe removal of identified and unknown ACMs.

During demolition activities, an estimated 20,000 to 40,000 cubic yards of soil will be excavated and managed. Hydrocarbon-impacted soil may be encountered beneath the footprint of Units 1 and 2 and the supporting facilities (e.g., transformers and hazardous materials storage vessels). Soil contacted by hydrocarbon-impacted groundwater and hydrocarbon vapors emanating from hydrocarbon-impacted soil and groundwater may also be encountered. Impacted soil encountered during site preparation activities will be characterized and disposed in accordance with LORS and the Draft Waste Management Plan (Appendix S). Contaminated soil will be segregated, sampled, and tested in order to determine appropriate disposal and treatment options. If the soil is classified as hazardous (according to RCRA and CCR Title 22), the City of El Segundo Fire Department and the Los Angeles County, Department of Hazardous Materials Division will be notified, and the soil will be hauled to a Class facility or other appropriate soil treatment and recycling facility, if

acceptable. Non-RCRA hazardous soil and non-hazardous (petroleum-exempt) soil may be disposed of at a soil treatment and recycling facility if RCRA listed compounds (e.g., PCBs, carcinogenic PAHs, and some chlorinated VOCs) are not detected. It is anticipated that less than 20,000 cubic yards will require offsite management.

Wastewater. Hydrocarbon-impacted groundwater may be encountered during demolition site preparation and construction phase dewatering. The range of concentrations of hydrocarbon constituents is discussed in Appendix T, Phase I ESA. Notification of the LARWQCB and DTSC who have overseen previous assessment and remediation activities at this site related to onsite and offsite soil and groundwater contamination sources would be required. The LARWQCB oversees ongoing groundwater management activities at the Chevron El Segundo Refinery. Coordination with Chevron will be necessary to develop the best dewatering program to lower the water table to the desired depth without reducing the effectiveness of the ongoing groundwater management program at the El Segundo Refinery.

The characteristics of the underlying shallow aquifer suggest that high pumping rates on the order of 500 to 1000 gallons per minute (720,000 gallons per day to 7.2 [MGD]), or greater may be achieved in order to drawdown the groundwater elevation by 14 feet throughout the perimeter of Units 1 and 2 without dewatering controls (i.e., sheet piles, slurry walls). The perimeter of Units 1 and 2 is assumed to be 250 feet by 250 feet. This range assumes that groundwater would be extracted from an unconfined aquifer with a hydraulic conductivity ranging between 0.001 to 0.01 centimeters per second. The extraction of groundwater at these rates might adversely impact the Chevron Refinery groundwater management program without dewatering controls. Therefore, dewatering controls are included to ensure that there are no potential adverse impacts to the Chevron Refinery groundwater management program.

As one option for dewatering controls, sheet piling or a slurry wall may be installed around the perimeter of Units 1 and 2 to reduce the amount of groundwater that would be removed and managed during demolition-and construction-phase dewatering. The sheet piling would extend to approximately 40 feet below grade. Dewatering would continue during the removal of the Units 1 and 2 foundations and soil to 20 feet below grade, subsequent replacement of fill to the top of the original water table, and the installation of any piping and structures below the original water table.

As a second option for dewatering control, demolition excavation activities may proceed in phases to remove Units 1 and 2 foundations. Temporary sheet piling would be used to isolate areas where excavation and dewatering is needed to minimize the volume of extracted groundwater. The temporary sheet piling would extend to approximately 30 feet below grade.

TABLE 5.14-2

ASBESTOS CONTAINING MATERIALS – UNIT #1

Component/ Item/Area	Level	ACM (Y/N)	Type	Est. Quantity	Additional Samples
STEAM GENERATOR AND AUXILIARY EQUIPMENT (above turbine deck)					
Boiler, Piping & Ducting	7	No	Blue bands (abated)	N/A	3-9
Stack	7 up	Yes	Painted Coating (peeling w/lead)	14'x 110' = 1,540 SF	3
Air Ejectors	3	Yes	Cal/mag and mud	50 LF 6"-12" diam.	-
De-aerator, recirc. tank, storage tank, flash tank	3	No	N/A	N/A	-
Burning cleaning station	3	Yes	Transite panels/putty	900 SF	-
Elevator shaft	G-7	Yes	Transite panels/putty	54' x 140' = 7,560 SF	-
Chart recorder shack	6	Yes	Transite panels/putty	633 SF	-
Penthouse	7	Unknown/assume	Blocks and spray-applied	36' x 36' x 20' inaccessible space	6
Air pre-heaters	3	No	N/A	N/A	-
Control room (1 st , 2 nd & roof)	3-5	Yes/assume	SCT(2), ACT/M(2), floors(4), tar/gravel, PM	25' x 60' CMU building w/2 floors SCT/ACT-3,000 SF Floors-3,000 SF Roof-1,500 SF	48
STEAM GENERATOR AND AUXILIARY EQUIPMENT (below turbine deck)					
Boiler - lower dead air space (internal)	2	Yes	Block (deteriorated)	Unknown 2(5'x 60'x 15' inaccessible space)	-

TABLE 5.14-2
(CONTINUED)

Component/ Item/Area	Level	ACM (Y/N)	Type	Est. Quantity	Additional Samples
Gas recirc. fan & ducts	G	Yes-confirm	Mud & wire	2 each (30'x 30' x 40')= 7,200 SF	3
Blowdown tank	G	No	N/A	N/A	-
DRAFT SYSTEM					
Forced draft fans	G	No	N/A	N/A	-
Induced draft fans (N&S)	G-2	Yes	Mud & cloth (wire?)	2 each (20'x 30'x 30')= 3,600 SF	-
Induced draft ducts (N&S)	G-2	Yes	Mud & cloth (wire?)	2 each (30'x 15'x 30')= 9,000 SF	-
Air pre-heaters (N&S)	2	Yes	Mud & cloth (wire?)	2 each (25'x 15'x 10')= 3,750 SF	-
FUEL SYSTEM					
Fuel gas piping, oil piping, oil heaters, oil pumps	G	No	Blue bands (abated)	N/A	-
Reboiler	G	No	Bare metal	N/A	-
CONDENSATE AND FEEDWATER SYSTEM					
1 st point feedwater heaters (E&W)	2	Yes	Mud & wire	2(30'x 15.7') + 2(19.62')= 981.24 SF	-
2 nd point feedwater heaters (E&W)	2	Yes	Mud & wire	2(30'x 15.7') + 2(19.62')= 981.24 SF	-
3 rd point feedwater heater	2	Unknown/assume	Mud & wire	(25'x 15.7') + (19.62')= 412.12 SF	3
4 th point feedwater heater	2	Unknown/assume	Mud & wire	(25'x 15.7') + (19.62')= 412.12 SF	3
Evaporator condenser (1 per unit)	2	Yes	Mud & wire	(20'x 12.56') + (12.56')= 263.76 SF	-

**TABLE 5.14-2
(CONTINUED)**

Component/ Item/Area	Level	ACM (Y/N)	Type	Est. Quantity	Additional Samples
Boiler feed pumps (inside barrel housing)	G	Unknown/assume	Unknown	5 @ 80 SF each= 400 SF	3
Condensate booster pumps	G	No insulation	N/A	N/A	-
TURBINE (above and below the deck)					
Turbine housing	3	Unknown (not likely)	Sound deadener (hard spray-on)	Unknown	5
Other areas	2-3	Not likely-confirm	Blankets	N/A	3
CHEMICAL LAB AND LOCKER ROOM					
Counter tops	G	Unknown/assume	Possible Resin	40 SF	3
Ceiling tiles	G	Unknown/assume	1'x 1'/M, 2'x 4'	400 SF	6
Flooring	G	Unknown/assume	9'x 9'/M, 12'x 12'/M	400 SF	12
EXTERIOR					
Wall plaster	G	Unknown/assume	3 coat on lath	5,000 SF	5
Exterior wall vents- north and west	G	Yes	Transite panels	1,770 SF	-
ADMINISTRATION BUILDING					
Offices	G	Unknown/assume	2'x 4' SCT, WB/JC, HP, 12" VFT/M, SV, rolled roofing, pen. mastic	65'x 80' CMU building SCT-5,200 SF Flooring-5,200 SF WB/JC-10,000 SF Roof-5,200 SF	30
MAINTENANCE SHOP AND WAREHOUSE					
Miscellaneous	G	Unknown	1'x 1' ACT/M (2), 2'x 4' SCT, WB/JC, HP, roofing, pen. mastic	ESTIMATED SCT/ACT-4,000 SF WB/JC-5,000SF HP-5,000 SF Roof-10,000 SF	27

TABLE 5.14-2
(CONTINUED)

Component/ Item/Area	Level	ACM (Y/N)	Type	Est. Quantity	Additional Samples
FUEL OIL TANK AREA (south)					
Tank sidings	35'-40'	Yes	Transit panels	2 @ 16,000 SF = 32,000 SF	-
Displacement oil heater	G	Unknown/not likely	Insulation	Unknown	6
Displacement oil tank	G	No	Bare metal	N/A	-

Assumptions:

Any of the painted metal components, features and fixtures should be assumed to contain lead. All loose, blistered or flaking paint is considered hazardous waste by regulation, and shall be handled accordingly in conjunction with the demolition sequence. Assuming that all or most of the metal will be subject to some form of recycle/reuse as opposed to actual disposal, the remaining painted surfaces in good condition are considered a demolition item and should be handled by the demolition contractor with regard for all applicable worker safety, training and PPE regulations or requirements, including notification to the "receiver" of said materials that lead-based paint is present.

TABLE 5.14-3

ASBESTOS CONTAINING MATERIALS – UNIT #2

Component/ Item/Area	Level	ACM (Y/N)	Type	Est. Quantity	Samples
STEAM GENERATOR AND AUXILIARY EQUIPMENT (above turbine deck)					
Boiler, Piping & Ducting	7	No	Blue bands (abated)	N/A	3-9
Stack	7 up	Yes	Painted Coating (peeling w/lead)	14'x 110'= 1,540 SF	3
Air Ejectors	3	Yes	Cal/mag and mud	50 LF 6"-12" diam.	-
De-aerator, recirc. tank, storage tank, flash tank	3	No	N/A	N/A	-
Burning cleaning station	3	Yes	Transite panels/putty	900 SF	-
Chart recorder shack	6	Yes	Transite panels/putty	633 SF	-
Penthouse	7	Unknown/assume	Blocks and spray-applied	Unknown (36'x 36' x 20' inaccessible space)	6
Air pre-heaters	3	No	N/A	N/A	-
STEAM GENERATOR AND AUXILIARY EQUIPMENT (below turbine deck)					
Boiler - lower dead air space (internal)	2	Yes	Block (deteriorated)	Unknown (25'x 60'x 15' inaccessible space)	-
Gas recirc. fan & ducts	G	Yes-confirm	Mud & wire	2 each (30'x 30' x 40')= 7,200 SF	3
Blowdown tank	G	No	N/A	N/A	-

TABLE 5.14-3
(CONTINUED)

DRAFT SYSTEM					
Forced draft fans	G	No	N/A	N/A	-
Induced draft fans (N&S)	G-2	Yes	Mud & cloth (wire?)	2 each (20'x 30'x 30')= 3,600 SF	-
Induced draft ducts (N&S)	G-2	Yes	Mud & cloth (wire?)	2 each (30'x 15'x 30')= 9,000 SF	-
Air pre-heaters (N&S)	2	Yes	Mud & cloth (wire?)	2 each (25'x 15'x 10')= 3,750 SF	-
FUEL SYSTEM					
Fuel gas piping, oil piping, oil heaters, oil pumps	G	No	Blue bands (abated)	N/A	-
Reboiler	G	No	Bare metal	N/A	-
CONDENSATE AND FEEDWATER SYSTEM					
1 st point feedwater heaters (E&W)	2	Yes	Mud & wire	2(30'x 15.7') + 2(19.62')= 981.24 SF	-
2 nd point feedwater heaters (E&W)	2	Yes	Mud & wire	2(30'x 15.7') + 2(19.62')= 981.24 SF	-
3 rd point feedwater heater	2	Unknown/assume	Mud & wire	(25'x 15.7') + (19.62')= 412.12 SF	3
4 th point feedwater heater	2	Unknown/assume	Mud & wire	(25'x 15.7') + (19.62')= 412.12 SF	3
Evaporator condenser (1 per unit)	2	Yes	Mud & wire	(20'x 12.56') + (12.56')= 263.76 SF	-
Boiler feed pumps (inside barrel housing)	G	Unknown/assume	Unknown	5 @ 80 SF each=400 SF	3
Condensate booster pumps	G	No insulation	N/A	N/A	-

TABLE 5.14-3
(CONTINUED)

TURBINE (above and below the deck)					
Turbine housing	3	Unknown (not likely)	Sound deadener (hard spray-on)	Unknown	5
Other areas	2-3	Not likely-confirm	Blankets	N/A	3
EXTERIOR					
Auxiliary piping from Unit 2 to 3 under crossover bridge	G	Yes	Pipe insulation	May not be impacted- no quantity at this time	-

Assumptions:

Any of the painted metal components, features and fixtures should be assumed to contain lead. All loose, blistered or flaking paint is considered hazardous waste by regulation, and shall be handled accordingly in conjunction with the demolition sequence. Assuming that all or most of the metal will be subject to some form of recycle/reuse as opposed to actual disposal, the remaining painted surfaces in good condition are considered a demolition item and should be handled by the demolition contractor with regard for all applicable worker safety, training and PPE regulations or requirements, including notification to the “receiver” of said materials that lead-based paint is present.

The sheet piling would remain in place and dewatering would continue until fill material is replaced in the respective, isolated area. This phased approach would continue until the demolition of foundations and structures below the water table is completed, fill material replaced, and new piping and structures that are proposed are installed below the original water table.

The above dewatering scenarios are discussed further in the Draft Waste Management Plan (Appendix S). It is anticipated that the installation of a sheet pile or slurry wall around the perimeter of Units 1 and 2, or the installation of temporary sheet piles around smaller isolated areas during demolition and construction will significantly reduce the volume of groundwater during dewatering. It is further anticipated that the dewatering rate may be reduced to levels less than 500 gallons per minute. Aquifer testing and analysis will be conducted as part of the subsurface geotechnical investigation outlined in Appendix G. Aquifer testing and analysis will provide the necessary data to more accurately estimate the dewatering rate and select the dewatering controls.

Demolition and construction phase dewatering are anticipated to take 30 to 45 days each (up to 90 days total). The total volume range of groundwater that may be extracted, assuming dewatering controls and 300 to 500 gpm, is 13 to 65 MG.

Groundwater encountered during dewatering may be treated onsite and discharged under a Construction Dewatering NPDES Discharge Permit. The management of the impacted groundwater, including the characterization, offsite transportation and treatment will be conducted in accordance with applicable LORS and the Draft Waste Management Plan in Appendix S. Prior to discharge, groundwater would be treated by Best Available Technology to remove TPH and VOCs to levels specified in the NPDES permit. Compliance monitoring will be conducted to assure that the parameters specified in the permit are met. NPDES discharge criteria for construction dewatering is included as an attachment to Appendix S.

Other wastewater generated during demolition activities will include sanitary wastes, equipment wash water, and stormwater runoff. Construction-related sanitary wastes, collected in portable self-contained chemical toilets, will be pumped periodically and transported by licensed contractors to a sanitary wastewater treatment facility. Stormwater runoff, which may be generated during construction activities, will be managed in accordance with state and local regulatory requirements and the stormwater NPDES permit requirements applicable to the ESPR Project. Equipment wash water, with the potential for contamination, will be contained at specifically designated wash areas and transported to a wastewater treatment facility via a licensed hauler or will be directed to the construction stormwater runoff collection system and handled in accordance with NPDES permit requirements.

5.14.2.1.2 New Plant Construction. Table 5.14-4 summarizes the anticipated waste streams generated during construction, along with appropriate management methods for treatment or disposal.

Non-Hazardous Waste. Solid waste generated from construction activities may include lumber, plastic, scrap metal and glass, excess concrete, and empty non-hazardous containers. Management of these wastes will be the responsibility of the contractor(s). Typical management practices by the appropriate contractor include recycling when possible, proper storage of waste to prevent wind dispersion, and routine pick-up and disposal of waste to approved local Class III landfills.

Hazardous Waste. Small quantities of hazardous wastes will possibly be generated over the course of construction. These wastes may include waste paint, spent construction solvents, and spent welding materials. Hazardous wastes generated during facility construction and operation will be handled and disposed of in accordance with applicable LORS. Hazardous wastes will be either recycled or disposed of in a licensed Class I disposal facility, as appropriate. Managed and disposed of properly, these wastes will not cause significant environmental or health and safety impacts. Most of the hazardous waste, such as HRSG cleaning wastes and used oil, generated during construction can be recycled. The small quantities of hazardous waste that cannot be recycled are not expected to significantly impact the capacity of the Class I landfills in California.

Wastewater. Wastewater generated during construction of the new plant will include sanitary wastes, equipment wash water, and stormwater runoff. Construction-related wastewater will be managed as described above regarding demolition activities.

5.14.2.1.3 Offsite Structures.

Non-Hazardous and Hazardous Waste.

During the installation of offsite water supply, wastewater, and aqueous ammonia pipelines, non-hazardous soils and surface demolition debris (e.g., concrete, asphalt, and piping) are anticipated. These wastes may be transported and disposed at a Class III facility. If contaminated soils are encountered during installation of water supply pipelines, these soils will need to be managed in accordance with applicable LORS. Soil sampling will likely be required to characterize the waste. Soil may be recycled or disposed as a non-hazardous waste at a Class III landfill or soil recycling facility, or disposed as hazardous waste at a Class I landfill. The disposal option will depend on the characterization of the waste per RCRA and CCR Title 22 criteria. Waste disposal facilities are listed on Table 5.14-1.

TABLE 5.14-4

**SUMMARY OF CONSTRUCTION WASTE STREAMS
AND MANAGEMENT METHODS¹**

Waste Stream	Waste Classification	Amount	Treatment
Scrap wood, steel, glass, plastic, paper, calcium, silicate insulation, mineral wood insulation, asphalt, concrete	Non-hazardous	20-40 cu yd/wk	Waste disposal facility
Empty hazardous material containers – drums	Recyclable Hazardous	1 cu yd/wk	Recondition or recycle
Used and waste lube oil during CT and ST Lube Oil Flushes	Recyclable Hazardous	<55 gallons per flush period, approximately 3 week duration	Recycle
Oil absorbent mats from CT and ST lube oil flushes and normal construction	Non-hazardous	1,000 sq. ft. per month, as needed	Waste disposal facility or laundry (permitted to wash rags)
Oily rags generated during normal construction activities lube oil flushes	Non-hazardous	3-4 55 gallon drums a month	Waste disposal facility or laundry (permitted to wash rags)
Spent batteries; lead acid	Hazardous	2 batteries/year	Recycle
Spent batteries; alkaline type, Sizes AAA, AA, C and D	Hazardous Recyclable	60 batteries/month	Recycle
HRSG and Preboiler Piping cleaning waste	Hazardous	200,000 gal per cleaning	Hazardous waste disposal facility or recycle
Used oil from oil/water separator	Recyclable Hazardous ²	<1,000 gal per year	Recycle
Sanitary Waste-Portable Chemical Toilets and Construction Office Holding Tanks	Sanitary	600 gpd	Pumped by licensed contractors and transported to sanitary water treatment plant
Construction waste water from dewatering operations	Non-hazardous	65 million gallons	Carbon absorption and discharge under NPDES permit
Granular Activated Carbon	Non-hazardous Recyclable	Exchange 40,000 pounds of carbon per week (4 vessels)	Regenerated by the carbon supplier at their waste disposal facility
Soil	Non-hazardous Recyclable Hazardous (TBD)	20,000 cubic yards	Soil recycling facility or class I or III facility

¹ All numbers are estimates.

² Under California regulations.

Non-hazardous and hazardous wastes are not expected to be encountered at paved parking and equipment staging locations being considered. If site grading is necessary to utilize unpaved parking and equipment staging locations, non-hazardous soil and debris (trash, asphalt) would be encountered.

5.14.2.2 Operations and Maintenance

5.14.2.2.1 Plant Operations. Operation of the facility will generate wastes resulting from processes, routine facility maintenance, and office activities. The operating waste streams and management methods are summarized in Table 5.14-5 and are described in more detail below. The primary non-hazardous waste stream is circulating water generated and discharged as part of normal Plant operations. Non-hazardous and hazardous solid wastes will be generated on a smaller scale. Non-hazardous wastes during operation of the facility will be recycled to the greatest extent practical, and the remainder removed on a regular basis by a certified waste-handling contractor. Operation of the natural gas pipeline and water supply pipeline will not generate a material amount of waste. The types of waste and their estimated quantities are shown in Table 5.14-5

Non-Hazardous Solid Waste. ESGS Units 5, 6 and 7 will produce maintenance and plant wastes typical of power generation operations. The following types of non-hazardous solid waste may generated: paper, wood, plastic, cardboard, broken and rusted metal and machine parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes including the typical refuse generated by workers.

Office paper, newsprint, aluminum cans, wood, insulation, yard debris, concrete, gravel, scrap metal, cardboard, glass, plastic containers, and other non-hazardous waste material will be recycled, to the extent practical, and the remainder removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Other non-hazardous solid waste will be picked up periodically by an authorized local hauler for transport and disposal to a suitable Class III landfill in the area.

Liquid Wastes. HRSG blowdown, evaporative cooler blowdown, and oil-water separator effluent from plant and equipment drains will be routed to the existing retention basin. The effluent from the retention basin will be directed to the existing circulating water system outfall, Discharge No. 001, when the existing Units 3 and 4 are not operating. During operation of the Units 3 and 4, the effluent from the retention basin will be discharged into Discharge No. 002.

TABLE 5.14-5

OPERATING WASTE STREAMS AND MANAGEMENT METHODS¹

Waste Stream	Waste Classification	Amount	Treatment
Used hydraulic fluids, oils, grease, oily filters	Recyclable Hazardous	< 5 gallons/day	Recycle
Spent batteries; lead acid	Recyclable Hazardous	2 batteries/year	Recycle
SCR catalyst	Recyclable Hazardous	50 cubic meters every 3 to 5 years	Recycle
Oxidation Catalyst (CO)	Recyclable Hazardous	50 cubic meters every 3 to 5 years	Recycle
Used oil from oil/water separator	Recyclable Hazardous ²	50 gallons/year	Recycle
Oily rags	Non-hazardous	55 gallons/2months	Laundry (permitted to wash oil rags)
CTG used air filters	Non-hazardous	<1,000 filters	Recycle
CTG water wash	Non-hazardous	7,200 gallons/year	Waste disposal facility
HRSG periodic operational chemical cleaning	Hazardous	50,000 gallons per HRSG cleaning (Approx. 2 cleanings every 5 years)	Hazardous waste disposal facility (by licensed subcontractors)

¹ All numbers are estimates.

² Under California regulations.

Stormwater drains from within the powerblock areas for Units 5, 6 and 7 will be directed to an oil/water separator. The effluent from the oil/water separator will be discharged into the existing circulating water system outfall, Discharge No. 001.

Sanitary drains at the facility will be directed to the City of Manhattan Beach sewer line in accordance with the City's discharge requirements.

Expected average steady-state waste streams and flow rates for the facility based on summertime operating conditions are shown on the water mass balance diagrams, Figures 3.4-5 and 3.4-6. Characterization of the process wastewater streams is shown in

Table 5.14-6. Process wastewater will be discharged through the existing outfall structures described above and in accordance with the NPDES permit.

TABLE 5.14-6

PROCESS WASTE CHARACTERIZATION¹
(milligrams/Liter as ions, except as noted)

Constituent	Circulating Water Discharge	Existing Retention Basin Effluent	Combined Waste to Outfall 001	Sanitary Waste to Sewer
Calcium	400	43	400	50
Magnesium	1,100	18	1,100	20
Sodium	11,000	57	11,000	60
Potassium	380	3	380	3
M-Alkalinity, as CaCO ₃	NR	97	NR	100
Sulfate	1,900	123	1,900	130
Chloride	19,000	58	19,000	60
Nitrate	0.59	0	0.59	0
Fluoride	0.7	0.18	0.7	0.20
Aluminum	0.1	0.06	0.1	0.08
Silica	0.01-7.0	1	0.01-7.0	NR
TDS	33,000	420	33,000	440
pH	7.7-8.3	8.1	7.7-8.3	8.2
TSS	3.0	<1	3.0	500
Phosphate	NR	4	0	NR
Ammonia	NR	0	0	5
Oil and grease	NR	0	0	NR
BOD ₅	1.0	ND	1.0	400
COD	49	ND	49	100

¹ All numbers are approximate.
NR – Not Reported.

Estimated volumes of the facility's liquid wastewater discharge are shown in Table 5.14-7. Process waste streams will be sampled in accordance with the existing monitoring and reporting program to ensure that the chemistry of the process waste is within the limits of the discharge permits.

The facility will have the capability of using city water as potable water, service water, and firewater during operation. Volumes and flow rates of sanitary discharge wastes are summarized in Table 5.14-7.

TABLE 5.14-7

**ESTIMATED LIQUID PROCESS WASTEWATER
VOLUMES TO DISCHARGE¹**

Waste Stream	Source	Quantity/Day
Circulating Water Return	Condenser	206,000,000 gal
Stormwater Oil Water Separators Effluent	Plant and equipment drains, area precipitation runoff	3,100 gal
Existing Retention Basin Effluent	HRSG, oil water separator effluent	80,000 gal
Total Waste to Outfall 001	Circulating water and oil water separator effluent	207,000,000 gal
Total Waste to City Sewer	Sanitary drains system	750 gal

¹ All numbers are approximate.

Other Hazardous Wastes. Some hazardous wastes are generated, including spent catalyst from the SCR and CO systems, used oils from equipment maintenance, and oil-contaminated materials such as spent oil filters, rags, or other cleanup materials. Spent catalyst (approximately 50 cubic meters) is returned to the manufacturer on the order of every 3 to 8 years for metals reclamation and/or disposal. Used oil generated will be recycled, and oil or heavy metal contaminated materials (e.g., filters) requiring disposal will be disposed of in a Class I waste disposal facility.

Other occasional waste streams include alkaline or acid cleaning solutions used during pre-operational chemical cleaning of the boiler and preboiler systems of the HRSG, acid cleaning solutions from chemical cleaning of the HRSG after the unit is put into service, and turbine wash and HRSG gas side wash waters. Boiler cleaning may be conducted on a 3-to-5 year cycle. Waste generated during each cleaning operation will be temporarily stored onsite in portable tanks and disposed of offsite by the chemical cleaning contractor at an appropriate disposal facility.

Hazardous Solid Waste. Hazardous waste generated will include waste lubricating oil, oily rags, used batteries, used oil filters and other wastes from the CTGs and selective NO_x catalytic reduction system. Table 5.14-5 summarizes the hazardous waste to be generated from operation of the plant. Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a hazardous waste facility. Hazardous wastes will be transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, land disposal restriction notices/certificates, destruction certifications, etc. will be kept on site and accessible for inspection for 3 years.

Wastes associated with the operation of the offsite supply water and aqueous ammonia pipelines are not expected.

5.14.2.3 Abandonment/Closure

Premature closure or unexpected cessation of plant operations will be outlined in the facility's closure plan. The plan will outline steps to secure hazardous and non-hazardous materials and wastes. Such steps will be consistent with best management practices and the emergency response plan outlined in the HMBP. The plan will include monitoring of vessels and receptacles of hazardous material and wastes, safe cessation of processes using hazardous materials of managing hazardous wastes, and inspection of secondary containment structures.

Planned permanent closure impacts will be incorporated into the facility closure plan and evaluated at the end of the generating stations' economic operation. The facility closure plan will document non-hazardous and hazardous waste management practices, including the inventory, management, and disposal of hazardous materials and wastes, and permanent closure of permitted hazardous materials and waste storage units (e.g., RCRA-permitted retention basins and USTs).

5.14.2.4 Cumulative Impacts

The Class I and Class III landfills and soil and water recycling facilities in the ESPR Project site area have adequate recycling and disposal capacities for the ESPR Project. The capacity of the County of Los Angeles Waste Water Treatment Plant in Carson, California, (that treats sanitary wastes from the City of Manhattan Beach) is adequate to handle the additional sanitary sewer discharge from Units 5, 6 and 7.

Handling, storage, and transport of wastes will adhere to the Draft Waste Management Plan included in Appendix S. The Plan will be updated within 60 days prior to the beginning of demolition and new construction phases. This will minimize impacts to the environment during demolition, construction, and offsite transportation of wastes.

Groundwater dewatering, treatment, and discharge will be coordinated with Chevron to minimize the volume of groundwater requiring management during dewatering and to minimize potential impacts to the ongoing groundwater management program at the Refinery. A Construction Dewatering NPDES permit will be obtained prior to dewatering activities for the management, treatment, and discharge of the treated groundwater.

Offsite water treatment and recycling facilities in the ESPR Project area have adequate capacity to handle other liquid wastes that will be generated during construction and operation phases of the ESPR Project. Therefore, cumulative impacts from the project site and other projects in the region are not expected to be significant.

5.14.3 Stipulated Conditions

As a means of cooperating with the California Energy Commission (CEC) and establishing a conciliatory relationship, and an open efficient AFC process that allows the Commission to utilize its resources in the most efficient manner possible, ESPR expresses a willingness to stipulate to and accept the following CEC standard general conditions as promulgated by the CEC that apply to the issue area of waste management.

WASTE-1: Obtain Hazardous Waste Permissions Prior to Generating Hazardous Waste. The project owner shall obtain a hazardous waste generator identification number and hazardous waste treatment permit for neutralization facilities from the Department of Toxic Substances Control prior to generating any hazardous waste.

Verification: The project owner shall keep copies of the identification number and permit on file at the project site and notify the Compliance Project Manager (CPM) via the monthly compliance report of the receipt.

WASTE-2: Report Any Waste Management Related Enforcement Action. The project owner shall notify the CPM of any waste management related enforcement action taken or proposed to be taken against it, or against any waste hauler or disposal facility or treatment operator that the owner contracts with.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action.

WASTE-3: Waste Management Plan. Prior to the start of both construction and of operation, the project owner shall prepare and submit to the City of El Segundo and the CPM an updated waste management plan, business plan and facility closure plan for all wastes generated during construction and operation of the facility, respectively. The updated plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications

- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization / reduction plans.

Verification: No less than thirty (30) days prior to the start of construction, the project owner shall submit the construction waste management plans to the City of El Segundo and the CPM for review. The operation waste management plans shall be submitted no less than sixty (60) days prior to the start of project operation. The project owner shall submit any required revisions within thirty (30) days of notification of the need for such revisions by the CPM (or by a mutually agreed upon date). In the Annual Compliance Report, the project owner shall document how actual waste management methods compared to planned management methods during the year.

WASTE-4: Contaminated Soil Inspection. If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, or other signs, prior to any further construction activity at that location, an environmental professional (as defined by American Society for Testing and Materials practice E 1527-97 Standard Practice for Phase I Environmental Site Assessments) shall inspect the site, determine the need for sampling to confirm the nature and extent of the contamination and file a written report to the project owner stating the recommended course of action.

Verification: The project owner shall notify the CPM in writing within 5 days of any reports filed by the environmental professional, and indicate if any substantive issues have been raised.

5.14.4 Mitigation Measures

5.14.4.1 Demolition and New Construction.

Pursuant to Standard Condition Waste-3 waste management plans will be prepared prior to demolition and new construction phases on the ESPR Project to ensure the proper management of hazardous and non-hazardous solid and liquid wastes. A Draft Waste Management Plan is included in Appendix S that describes proper waste management procedures. Demolition and construction employees will receive hazardous waste related training that focuses on the recognition and management of potentially hazardous building materials and subsurface soil and groundwater contamination.

Demolition details for the closure of Units 1 and 2 are discussed in Section 3.8. The demolition plan has been prepared and implemented to ensure that the management, recycling, and/or disposal of non-hazardous and hazardous wastes is in accordance with applicable LORS.

A draft Waste Management Plan has been prepared for the management of subsurface soil and groundwater and hazardous and non-hazardous solid and liquid wastes generated during demolition and construction (Appendix S). This section and the Draft Waste Management Plan discuss the installation of sheet piling or a slurry wall to reduce mitigate potential impacts to the Chevron hydrocarbon plume during dewatering. The Plan ensures that the management, recycling, treatment, and/or disposal of non-hazardous and hazardous soil and groundwater will be conducted in accordance with applicable LORS. The Plan also outlines procedures to minimize ensure proper storage, labeling, packaging, record-keeping, manifesting, minimization, and disposal of hazardous materials and wastes.

The current HMBP for ESGS (Appendix N) includes waste management procedures, which may be adopted for the proposed facility. Employees who have not received training will be trained in procedures to reduce the volume of hazardous waste generated at the proposed facility. The procurement of hazardous materials will be controlled to minimize surplus materials on-site and to prevent unused materials from becoming “off spec.” Non-hazardous materials will be used in lieu of hazardous materials whenever possible. Hazardous materials will be reused or recycled whenever possible.

All hazardous wastes will be stored on-site for fewer than 90 days (or other accumulation periods as allowed by 22 CCR, Section 66262.34 for hazardous waste generators) and will be managed in accordance with state and federal hazardous waste generator requirements. Hazardous wastes, as well as hazardous materials that are spilled or otherwise become unsuitable for use, will be stored in an appropriately segregated hazardous waste storage area surrounded by a containment structure to control leaks and spills. The containment area will be sized to hold a volume equal to at least 110 percent of the largest container capacity. The outdoor containment structure will also have a volume equal to at least the capacity of the tank (or container) plus the volume of rainfall from a 50-year, 2-hour storm event. The hazardous waste storage areas will be inspected and maintained at least weekly, as required.

The current SPCC and HMBP for ESGS includes spill control and management procedures, which may be adopted by the proposed facility. The purpose of the spill control and management procedures is to avoid accidental mixing of incompatible chemicals and spills

during transfer of chemicals. The design of spill control and management procedures will include the containment, collection, and treatment systems.

Facility employees receive hazardous materials training. Additionally, employees are trained in hazardous waste procedures. Hazardous waste training includes the following subjects:

- Hazardous waste characteristic
- Use and management of containers
- Waste packing
- Marking and labeling
- Accumulation/storage areas
- Inspections
- Emergency equipment preparedness and prevention
- Contingency plan
- Emergency response procedures
- Spill response and containment hazardous waste manifesting
- Waste minimization.

Hazardous wastes are collected by a licensed hazardous waste hauler and disposed of at a hazardous waste facility. Hazardous wastes are transported off-site using a hazardous waste manifest. Copies of manifests, reports, waste analysis, exception reports, land disposal restriction notices/certifications, and destruction certifications, etc., are kept on-site and accessible for inspection for 3 years.

Implementation of the above waste management procedures for handling demolition and construction-related debris, and hazardous wastes, where encountered, during pipeline installation. No further mitigation is proposed.

5.14.4.2 Operations and Maintenance Phase Mitigations

5.14.4.2.1 Plant Site. Implementation of the above waste management procedures outlined for construction and implementation of the existing Business Plan and Risk Management Plan will minimize potential Plant operations-related impacts. No further mitigation is proposed.

5.14.4.2.2 Offsite Structures. Periodic inspection of the water supply, sanitary discharge, and ammonia supply pipelines in accordance with applicable LORS will mitigate potential operations related impacts associated with the pipelines. Additional discussion of operations

related mitigation for the aqueous ammonia pipeline is discussed in 5.15.3. No further mitigation measures are proposed.

5.14.4.3 Monitoring Program

Environmental impacts related to waste management issues caused by construction and operation of the ESPR Project, including pipelines, are expected to be minimal. Therefore, extensive monitoring programs are not required. Monitoring of generated waste volumes and characteristics during construction and operation of the ESPR Project will be conducted in accordance with monitoring and reporting requirements stipulated in appropriate regulatory permits to be obtained for construction and operation.

5.14.5 Applicable Laws, Ordinance, Regulations, and Standards

The following summarizes the applicable LORS, which govern the handling of non-hazardous and hazardous wastes. The LORS applicable to the handling of waste at the project site are summarized in Table 5.14-8.

TABLE 5.14-8

LORS APPLICABLE TO WASTE MANAGEMENT

	Applicability	Conformance (Section)
Federal		
42 U.S.C. § 69016992k, Regulate non-hazardous and Section 6.12.2.1, RCRA Subtitle C and D	Regulate non-hazardous and hazardous wastes. Laws implemented by the State.	Section 5.14.5.1
40 CER 260, et seq.	Implementing regulations for RCRA Subtitle C law. Implemented by the U.S. EPA by delegating to the State.	Section 5.14.5.1
Federal Clean Water Act 33 U.S.C. § 1251 et seq.	Regulates wastewater discharges to surface waters of the U.S. NPDES program administered at the State level.	Section 5.14.5-1
California		
Public Resources Code § 40000 et seq. (California Integrated Waste Management Act)	Implements RCRA regulations for non-hazardous waste.	Section 5.14.5.2

**TABLE 5.14-8
(CONTINUED)**

	Applicability	Conformance (Section)
Water Code § 13000 et seq. (Porter-Cologne Water Quality Control Act of 1998)	Regulates wastewater discharges to surface and groundwater of California. NPDES program implemented by State Water Resources Control Board.	Section 5.14.5.2
22 CCR § 66262.34	Regulates accumulation periods for hazardous waste generators. Typically hazardous waste cannot be stored on site for greater than 90 days.	Section 5.14.5.2
California Health and Safety Code § 25100 et seq. (California Hazardous Waste Control Law)	Regulates hazardous waste handling and storage. Implemented by the Los Angeles County Fire Department, Hazardous Materials Division and City of El Segundo.	Section 5.14.5.2
Local		
Los Angeles County Waste Water Treatment Plant	Regulates discharge to the sanitary sewer system	Section 5.14.5.3
City of El Segundo Municipal Code, Title 6 Chapter 6.22 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	Regulates enforcement responsibility for the implementation of Title 23, Division 3, Chapters 16 and 18 of CCR, as it relates to hazardous material storage and petroleum UST cleanup.	Section 5.14.5.3

5.14.5.1 Federal

The RCRA, 42 U.S.C., §69016992k, provides the basic framework for federal regulation of both non-hazardous and hazardous waste. RCRA's Subtitle C establishes state responsibility for regulating non-hazardous wastes, while Subtitle D controls the generation, transportation, storage and disposal of hazardous waste through a comprehensive "cradle to grave" system of hazardous waste management techniques and requirements. The US EPA is responsible for implementing the law and the implementing regulations are set forth in 40 CFR 260, et seq. The law allows the EPA to delegate the administration of the RCRA programs to the various states provided that the state programs meet the federal requirements. California's program was authorized by the EPA on August 1, 1992, and the California EPA's DTSC is responsible for administering the program.

The Clean Water Act (CWA) 33 U.S.C., §1251 et seq. provides the regulatory framework for managing the discharge of wastewater to surface waters of the U.S. The USEPA has nationwide authority to implement CWA, but states may be authorized to administer various

aspects of the NPDES as well as pretreatment programs. California is authorized under CWA to administer the NPDES program, implement publicly owned treatment works pretreatment programs, oversee federal facilities, and issue general permits.

5.14.5.2 State

Non-hazardous solid waste is regulated by the California Integrated Waste Management Act, Public Resources Code, §40000 et seq. The law provides a solid waste management system to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible in an efficient and cost-effective manner to conserve natural resources, to protect the environment, and to improve landfill safety. Local agencies are required to develop and establish recycling programs, reduce paper waste, purchase recycled products, and implement integrated waste management programs that conform to the state's requirements. The Los Angeles County Public Works Group, Waste System Division has an integrated waste management program in place.

Wastewater is regulated under California's Porter-Cologne Water Quality Control Act, which established a statewide system for water pollution control Water Code, secs. 13000 et seq. The State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCBs) are the principal agencies responsible for control of water quality and issuing permits under the NPDES program. Los Angeles Region would issue construction dewatering NPDES permits and amend existing NPDES permit for wastewater discharge.

Accumulation of hazardous waste on site is regulated under the CCR, Section 66262.34. Hazardous waste cannot be stored on site for more than 90 days. Any hazardous waste stored on site at the ESGS would have to be appropriately transferred within three months.

As stated previously, RCRA allows states to develop their own programs to regulate hazardous waste. California has developed its own program by passage of the California Hazardous Waste Control Law, California Health and Safety Code, §25100 et seq. It should be noted that California's Hazardous Waste Control Law includes non-RCRA hazardous wastes. In addition, the law specifies two hazardous waste criteria (Soluble Threshold Limit Concentration and Total Threshold Limit Concentration) that are not required under RCRA. Primary authority for the statewide administration and enforcement of California's Hazardous Waste Control Law rests with the DTSC. However, local Certified Unified Program Agencies provide most regulatory functions covering hazardous waste generators.

5.14.5.3 Local

The County of Los Angeles Wastewater Treatment Plant in Carson, California issues permits and monitoring requirements for sanitary discharge.

For non-hazardous solid waste, the City of El Segundo has developed a hazardous materials and waste management element in their 1992 General Plan. This element provides as a goal the minimization, recycling, treatment, and management of hazardous materials and wastes.

For hazardous waste, the designated Certified Unified Program Agency for the ESPR Project site area is El Segundo Fire Department. They have delegated authority to administer state and federal programs. The City of El Segundo regulates the storage of hazardous materials in underground storage tanks and cleanup of petroleum releases from USTs under Title 6, Chapter 6.22 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The City of El Segundo shall be contacted in the event of a release of hazardous wastes or materials to the environment. The City assures enforcement responsibility for the implementation of CCR, Title 23.

5.14.5.4 Agency Contacts

Agencies with jurisdiction to issue applicable permits or enforce LORS related to waste management are shown in Table 5.14-9.

TABLE 5.14-9

AGENCY CONTACTS

Agency	Contact	Title	Telephone
Los Angeles Regional Water Quality Control Board (Groundwater/Waste)	Manjulika Chabrabarti	Associate	(213) 576-6722
Los Angeles Regional Water Quality Control Board (NPDES)	David Hung	Associate	(213) 576-6664
Department of Toxic Substances Control	Adela Weinstein	Hazardous Materials Specialist	(818) 551-2171
City of El Segundo Fire Department	Steve H. Tsumura, CIH	Environmental Safety Manager	(310) 524-2242
Manhattan Beach Public Works	Clarence Van Corbach	Engineer	(310) 802-5315

5.14.5.5 Applicable Permits

The ESGS has an active NPDES permit from the Los Angeles RWQCB for discharge of stormwater and wastewater. A separate Construction Dewatering NPDES permit would be required to allow the discharge of groundwater during dewatering. Groundwater quality parameters would be specified in the permit. A separate NPDES permit for the discharge of construction-related wastewater (other than from dewatering) would be required.

The facility has an EPA hazardous waste generator identification number from the DTSC and a hazardous waste generator permit from the Los Angeles County Fire Department.

A summary of applicable permits is presented in Table 5.14-10.

TABLE 5.14-10

APPLICABLE PERMITS

JURISDICTION	POTENTIAL PERMIT REQUIREMENTS
Federal	No federal permits are required
State	
California Regional Water Quality Control board, Los Angeles Region	Construction Dewatering NPDES Permit Must be obtained within 30 days of site preparation activities
Local	
Los Angeles County regional Water Quality Control Board	Waste Discharge permit for groundwater injection. (Alternative to NPDES Permit)
South Coast Air Quality Management District	Rule 1166 for monitoring excavations and soil piles with volatile hydrocarbons. Must be obtained within 30 days of excavation activities

5.14.6 References

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Office of the Federal Register. 1997. Code of Federal Regulations, Title 40, Parts 260 to 265, Revised July 1.

Radian International 2000. Liquid Hydrocarbon Recovery Project, April 2000 Semiannual Sampling Event, August 7.

Woodward-Clyde International Americas, Inc. 1998. Additional Buyer's Due Diligence Investigations: El Segundo Generating Station.

Adequacy Issue: Adequate _____ Inadequate _____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date _____

Technical Area: **Waste Management**

Project: _____

Technical Staff: _____

Project Manager: _____

Docket: _____

Technical Senior: _____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (b) (1) (C)	A detailed description of the design, construction and operation of the facilities, specifically including the power generation, cooling, water supply and treatment, waste handling and control, pollution control, fuel handling, and safety, emergency and auxiliary systems, and fuel types and fuel use scenarios; and	Sections 3.9, 3.10, 3.4, 3.5, 3.6, 3.7, 3.8		
Appendix B (e) (2)	A discussion of how facility closure will be accomplished in the event of premature or unexpected cessation of operations.	Sections 5.14.1, 5.14.2.3		
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Sections 5.14.1, 5.14.2, 5.14.3, and 5.14.4		
Appendix B (g) (12) (A)	A Phase I Environmental Site Assessment for the proposed power plant site using 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), which is incorporated by reference in its entirety; or an equivalent method agreed upon by the applicant and the CEC Staff that provides similar documentation of the potential level and extent of site contamination.	Sections 5.14.1, 5.14.2 Appendix T		

Adequacy Issue: Adequate _____ Inadequate _____

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Appendix B (g) (12) (B)	A description of each waste stream estimated to be generated during project construction and operation, including origin, hazardous or nonhazardous classification pursuant to Title 22, California Code of Regulations, § 66261.20 et seq., chemical composition, estimated annual weight or volume generated, and estimated frequency of generation.	Sections 5.14.2.1, 5.4.2.2 Table 5.4-4 Table 5.4-5		
Appendix B (g) (12) (C)	A description of all waste disposal sites which may feasibly be used for disposal of project wastes. For each site, include the name, location, classification under Title 23, California Code of Regulations, § 2530 et seq., the daily or annual permitted capacity, daily or annual amounts of waste currently being accepted, the estimated closure date and remaining capacity, and a description of any enforcement action taken by local or state agencies due to waste disposal activities at the site.	Sections 5.14.2, 5.14.2.1, 5.14.2.2 Table 5.14-4 and Table 5.14.5		
Appendix B (g) (12) (D)	A description of management methods for each waste stream, including methods used to minimize waste generation, length of on- and off-site waste storage, re-use and recycling opportunities, waste treatment methods used, and use of contractors for treatment.	Table 5.14-10		

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Appendix B (h) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, and permits applicable to the proposed project, and a discussion of the applicability of each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed;	Sections 5.14.3, 5.14.5 Table 5.14-8		
Appendix B (h) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Table 5.14-9		
Appendix B (h) (2)	A discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A).	Sections 5.14.1, 5.14.5		
Appendix B (h) (3)	The name, title, phone number, and address, if known, of an official within each agency who will serve as a contact person for the agency.	Table 5.14.9		
Appendix B (h) (4)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.14.5.5 Table 5.14-10		
Appendix B. (i) (1) (B)	A discussion of any measures proposed to improve adverse site conditions.	Sections: 5.14.2, 5.14.3 and 5.14.4		

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Appendix B (i) (1) (D) (v)	The waste disposal system and on-site disposal sites.	Section 5.14.2 Appendix S		