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5.13 WASTE MANAGEMENT

Hydrogen Energy International LLC (HEI or Applicant) is jointly owned by BP Alternative Energy North America Inc. and Rio Tinto Hydrogen Energy LLC. HEI is proposing to build an Integrated Gasification Combined Cycle power generating facility called Hydrogen Energy California (HECA or Project) in Kern County, California. The Project will produce low-carbon baseload electricity by capturing carbon dioxide (CO₂) and transporting it for CO₂ enhanced oil recovery (EOR) and sequestration (storage)¹.

The 473-acre Project Site is located approximately 7 miles west of the outermost edge of the city of Bakersfield and 1.5 miles northwest of the unincorporated community of Tupman in western Kern County, California, as shown in Figure 2-1, Project Vicinity.

The Project Site is near a hydrocarbon-producing area known as the Elk Hills Field. The Project Site is currently used primarily for agricultural purposes. Existing surface elevations vary from about 282 feet to 291 feet above mean sea level.

The Project will gasify petroleum coke (petcoke) (or blends of petcoke and coal, as needed) to produce hydrogen to fuel a combustion turbine operating in combined cycle mode. The Gasification Block feeds a 390-gross-megawatt (MW) combined cycle plant. The net electrical generation output from the Project will provide California with approximately 250 MW of low-carbon baseload power to the grid. The Gasification Block will also capture approximately 90 percent of the carbon from the raw syngas at steady-state operation, which will be transported to the Elk Hills Field for CO₂ EOR and sequestration. In addition, approximately 100 MW of natural gas generated peaking power will be available from the Project.

The Project Site and linear facilities comprise the affected study area and are entirely located in Kern County, California. These Project components are described below.

Major on-site Project components will include, as shown on Figure 2-5, Preliminary Plot Plan:

- Solids Handling, Gasification, and Gas Treatment
 - Feedstock delivery, handling and storage
 - Gasification
 - Sour shift/gas cooling
 - Mercury removal
 - Acid gas removal

- Power Generation
 - Combined-cycle power generation
 - Auxiliary combustion turbine generator

¹ This carbon dioxide will be compressed and transported via pipeline to the custody transfer point at the adjacent Elk Hills Field, where it will be injected. The CO₂ EOR process involves the injection and reinjection of carbon dioxide to reduce the viscosity and enhance other properties of the trapped oil, thus allowing it to flow through the reservoir and improve extraction. During the process, the injected carbon dioxide becomes sequestered in a secure geologic formation. This process is referred to herein as CO₂ EOR and Sequestration.

- Electrical switching facilities
- Supporting Process Systems
 - Natural gas fuel systems
 - Air separation unit (ASU)
 - Sulfur recovery unit/Tail Gas Treating Unit
 - Zero liquid discharge (ZLD) units for process and plant waste water streams
 - Carbon dioxide compression
 - Raw water treatment plant
 - Other plant systems

The Project also includes the following offsite facilities, as shown on Figure 2-7, Project Location Map:

- **Electrical Transmission Line** – An electrical transmission line will interconnect the Project to Pacific Gas & Electric Company’s (PG&E) Midway Substation. Two alternative transmission line routes are proposed; each alternative is approximately 8 miles in length.
- **Natural Gas Supply** – A natural gas interconnection will be made with PG&E or SoCalGas natural gas pipelines, each of which are located southeast of the Project Site. The natural gas pipeline will be approximately 8 miles in length.
- **Water Supply Pipelines** – The Project will use brackish groundwater supplied from the Buena Vista Water Storage District (BVWSD) located to the northwest. The raw water supply pipeline will be approximately 15 miles in length. Potable water for drinking and sanitary use will be supplied by West Kern Water District to the southeast. The potable water supply pipeline will be approximately 7 miles in length.
- **Carbon Dioxide Pipeline** – The carbon dioxide pipeline will transfer the carbon dioxide captured during gasification from the Project Site southwest to the custody transfer point. Two alternative carbon dioxide pipeline routes are proposed; each alternative will be approximately 4 miles in length.

The Project components described above are shown on Figure 2-8, Project Location Details, which depicts the region, the vicinity, the Project Site and its immediate surroundings.

All temporary construction equipment laydown and parking, including construction parking, offices, and construction laydown areas, will be located on the Project Site.

This section presents a discussion of potential impacts from the generation, storage, and disposal of hazardous and non-hazardous wastes from the Project. Included in the discussion are descriptions of waste streams that will be generated during construction and operation; descriptions of applicable waste disposal sites to be used by the Project; waste mitigation methods to minimize impacts to the environment; and applicable laws, ordinances, regulations, and standards (LORS).

5.13.1 Affected Environment

5.13.1.1 Project Site

A Phase I Environmental Site Assessment (ESA) of the Project Site has been prepared in accordance with American Society for Testing and Materials (ASTM) guidance document *ASTM Standards on Environmental Site Assessments for Commercial Real Estate*, Designation Practice E 1527 as required by the CEC for an AFC. The ESA report is included in this Revised AFC as Appendix M. The objective of the Phase I ESA was to identify Recognized Environmental Conditions (RECs) that may exist on the Project Site. The ASTM guidance document defines RECs as “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.”

Based on information generated for the Phase I Environmental Site Assessment prepared by URS (URS 2009), two RECs were identified on the Project Site. In addition, a standpipe was observed adjacent to the northwest corner of the Project Site, potentially associated with an underground storage tank (UST), the exact location of which is unknown. Records also indicate that historical USTs may have been present either on or adjacent to the Project Site (URS 2009). Contaminated soil may be associated with the potential historical or current presence of nearby USTs, unpermitted discharge from the Port Organics Products, LTD (PO) natural fertilizer manufacturing plant, and the open and uncontained tailings pile located at the onsite portion of the PO natural fertilizer manufacturing facility. Based on the results of the Phase I ESA, additional investigation work to address potential issues associated with these identified RECs has been recommended. The Phase I ESA report is included in this Revised AFC as Appendix M.

Adjacent land uses consist of Adohr Road and agricultural uses to the north; Tupman Road and agricultural uses to the east; agricultural uses and an irrigation canal to the south; and a residence, structures (used for grain storage and organic fertilizer production), agricultural uses, and Dairy Road to the west. The land adjacent to the northwestern corner of the Project Site contains the PO natural fertilizer manufacturing plant, farming operations, and a residence. A portion of the PO facility extends into the northwestern corner of the Project Site. The West Side Canal, Kern River Flood Control Channel, and California Aqueduct are located approximately 500, 700, and 1,900 feet, respectively, to the south of the Project Site. The land southwest of the California Aqueduct is used for mineral and petroleum purposes. The Elk Hills Field is located approximately 1 mile south of the Project Site.

As described in more detail below in Section 5.13.2, Environmental Consequences, the Project will generate hazardous and non-hazardous wastes during the construction and operational phases of the Project that are typical of an IGCC power plant.

Facility workers will receive hazardous materials training as required by the Occupational Safety and Health Administration (OSHA), Hazard Communication Standard. Additionally, workers will be trained in hazardous waste procedures, spill contingencies, and waste minimization procedures in accordance with California Code of Regulations (CCR) Title 22.

5.13.1.2 Non-Hazardous Solid Waste Disposal

Existing non-hazardous solid waste disposal facilities in the general area of the Project Site are listed in Table 5.13-1, Waste Recycling/Disposal Facilities. Several available Class III landfills are listed in Table 5.13-1. These landfills accept non-hazardous wastes and inert solid wastes, including construction/demolition wastes. Industrial process solid wastes are accepted on a case-by-case basis.

5.13.1.3 Hazardous Solid Waste Disposal

Hazardous waste generated at the Project Site will be taken off site for recycling or disposal by a permitted hazardous waste transporter to a permitted Treatment, Storage, and Disposal Facility (TSDF) or Class I landfill. There are currently two Class I landfills accepting waste in California: Clean Harbors' Buttonwillow facility in Kern County, and Chemical Waste Management's Kettleman Hills Landfill in Kings County. The permitted, operating, and remaining capacities of these landfills are described in Table 5.13-1. Based on the remaining capacity and estimated closure dates of the Class I landfills in California, hazardous waste generated during construction and operational phases at the Project is not expected to significantly impact available landfill capacity.

5.13.2 Environmental Consequences

The wastes that would be generated during both the construction and the operation phases of the Project were identified to determine whether the Project would result in any potentially significant impacts. The significance criteria are based on the California Environmental Quality Act (CEQA) Guidelines, Appendix G, Environmental Checklist Form (approved January 1, 1999), and on performance standards or thresholds adopted by responsible agencies. An impact may be considered significant if:

- Construction activities result in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.
- Construction and/or operation activities generate waste materials that exceed the receiving capacity of appropriate disposal or recycling facilities.
- Construction and/or operation of the facility results in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.
- Non-hazardous liquid wastes cause a publicly owned treatment system to violate any applicable waste discharge requirements.
- Breaches standards relating to solid waste or litter control.
- Creates a potential public health hazard or involves materials that pose a hazard.
- Results in a need for new systems or substantial alterations to waste disposal facilities.

**Table 5.13-1
Waste Recycling/Disposal Facilities**

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Throughput	Permitted Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Taft Sanitary Landfill (Solid Waste Facility) 13351 Elk Hills Road Taft, CA 93626	Class III	419 tons per day	8.8 million cubic yards	6.7 million cubic yards	2123	No
Bakersfield Metropolitan (Bena) Sanitary Landfill Facility (SLF) (Solid Waste Facility) 2951 Neumarkel Road Caliente, CA 93518	Class III	4.5 thousand tons per day	53 million cubic yards	44.8 million cubic yards	2038	No
Shafter-Wasco Sanitary Landfill (Solid Waste Facility) 17621 Scofield Avenue Shafter, CA 93668	Class III	880 tons per day	11.6 million cubic yards	7.9 million cubic yards	2027	No
U.S. Borax Inc. Refuse Waste Pile (Solid Waste Facility) 14486 Borax Road Boron, CA 93516	Class III	443 tons per day	8.5 million cubic yards	1.4 million cubic yards	2023	No
McKittrick Waste Treatment Site (Solid Waste Facility) 56533 Highway 58 McKittrick, CA 93251	Class II	1.2 thousand tons per day	2.1 million cubic yards	84.1 thousand cubic yards	2029	No
Chemical Waste Management Kettleman Hills Landfill (Solids Waste Facility) 36251 Old Skyline Road Kettleman City, CA 93239	Class I	8 thousand tons per day	10.7 million cubic yards	6 million cubic yards	2038	No

**Table 5.13-1
Waste Recycling/Disposal Facilities**

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Throughput	Permitted Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Clean Harbors Buttonwillow Landfill (Solid and Liquid Waste Facility) Lokern Road Kern County, CA	Class I	10.48 thousand tons per day	14.29 million cubic yards	Not available	2068	No
American Remedial Technologies (Solids Recycling) 2680 Seminole Avenue Lynwood, CA 90262	Not Applicable	25 thousand tons per month	300 thousand tons per year	Not applicable	Not applicable	No
TPS Technologies, Inc. (Soil Recycling) 12328 Hibiscus Avenue Adelanto, CA 92301	Not Applicable	Not applicable	350,000 tons per year	Not applicable	Not applicable	No
Thermal Remediation Solutions (Solids Recycling) 1211 West Gladstone Avenue Azusa, CA 91702	Class III	200,000 tons per year	2,000 tons per day	Not applicable	Not applicable	No

Source: CIWMB, 2008.

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

5.13.2.1 Construction Phase

Project Site Construction

The Project will generate wastes typical for the construction of an Integrated Gasification Combined-Cycle (IGCC) power-generation plant. Table 5.13-2, Summary of Construction Waste Streams and Management Methods, summarizes the anticipated waste streams generated during construction, along with appropriate management methods for treatment, recycling, or disposal. A waste management plan that encompasses hazardous and nonhazardous wastes will be prepared prior to construction.

Non-Hazardous Waste

Solid waste generated from construction activities may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, and empty non-hazardous containers. These wastes will be segregated, where practical, for recycling. Non-recyclable wastes will be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal in accordance with all applicable LORS. Based on the remaining capacity and estimated closure dates of the Class III landfills in California, the non-hazardous wastes that cannot be recycled are not expected to significantly impact the capacity of the Class III landfills. With the implementation of Mitigation Measure WM-2, described in Section 5.13.4, below, impacts related to non-hazardous waste will be less than significant.

Hazardous Waste

Small quantities of hazardous wastes will likely be generated over the course of construction. These wastes may include waste paint, spent solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Hazardous wastes generated during Project construction will be handled and disposed of in accordance with applicable LORS and in accordance with Mitigation Measures WM-3 through WM-7. Hazardous wastes will be either recycled or disposed of in a licensed hazardous waste 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 can be recycled, such as turbine-cleaning wastes and used oil generated during construction. Based on the remaining capacity and estimated closure dates of the Class I landfills in California, the hazardous wastes that cannot be recycled are not expected to significantly impact the capacity of the Class I landfills. With the implementation of Mitigation Measures WM-3 through WM-7, described in Section 5.13.4, below, impacts related to hazardous waste will be less than significant.

**Table 5.13-2
Summary of Construction Waste Streams
and Management Methods¹**

Waste Stream	Waste Classification	Amount	Disposal Method
Used Lube Oils, Flushing Oils	Hazardous	seven 55-gallon drums per month	Recycle
Hydrotest Water (One time per commissioning, reuse as practical, test for hazardous characteristics)	Hazardous or Non-hazardous	2.8 million gallons total	Characterize. Drain non-hazardous to the Retention Basin. Dispose of hazardous at a hazardous waste disposal facility.
Chemical Cleaning Wastes (Chelates, Mild Acids, TSP, and/or EDTA – During Commissioning)	Hazardous or Non-hazardous Recyclable	525,000 gallons total	Hazardous or non-hazardous waste disposal facility.
Solvents, Used Oils, Paint, Adhesives, Oily Rags	Cal-Hazardous ² Recyclable	160 gallons per month	Recycle or dispose of as hazardous waste.
Spent Welding Materials	Hazardous	260 pounds per month	Dispose at a hazardous waste landfill.
Used Oil Filters	Hazardous	100 pounds per month	Dispose at a hazardous waste landfill.
Fluorescent/Mercury Vapor Lamps	Hazardous Recyclable	50 units per year	Recycle
Misc. Oily Rags, Oil Absorbent	Non-hazardous or Hazardous Recyclable	one 55-gallon drum per month	Recycle or dispose at a hazardous waste landfill.
Empty Hazardous Material Containers	Hazardous Recyclable	1 cubic yard per week	Recondition, recycle, or dispose at a hazardous waste landfill.
Used Lead/Acid and Alkaline Batteries	Hazardous Recyclable	1 ton per year	Recycle
Sanitary Waste from Workforce (Portable Chemical Toilets)	Non-Hazardous	390 gallons per day	Pump and dispose by sanitary waste contractor.
Site Clearing – Grubbing, Excavation of Non-Suitable Soils, Misc. Debris	Non-Hazardous	Minimal	Reuse Soils or dispose at a non-hazardous waste landfill. (see Section 2.6.1 — Project Site Construction — of this Revised AFC).
Scrap Materials, Debris, Trash (Wood, Metal, Plastic, Paper, Packing, Office Waste, etc.)	Non-Hazardous	40 cubic yards per week	Recycle or dispose at a non-hazardous waste landfill.

Source: HECA Project.

Notes:

¹ All Numbers are estimates

² Under California regulations

CTG = combustion turbine generator

EDTA = ethylene diamine tetra-acetic acid

STG = steam turbine generator

TSP = trisodium phosphate

Wastewater

Wastewater generated during construction of the Project will include sanitary wastes, equipment wash water, hydrotest water, and stormwater runoff. Sanitary waste will be disposed of offsite by a sanitary waste contractor. Non-hazardous hydrotest water will be routed to the appropriate process area stormwater retention basin for reuse. Stormwater runoff will be routed to retention basins during the initial grading operation to prevent the release of sediment from the Project Site. A stormwater pollution prevention plan (SWPPP) will be developed for the construction phase. Construction-related wastewater will be managed according to appropriate LORS. Based on the proposed management of the construction-related wastewater and stormwater, impacts related to wastewater management will be less than significant.

Off-site Linear Facilities

Non-Hazardous and Hazardous Waste

During the installation of the electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the process and potable water supply lines, non-hazardous soils and surface demolition debris (e.g., concrete, asphalt, and piping) are anticipated. These wastes will be transported and disposed at an appropriate disposal facility. If contaminated soil is encountered during installation, these soils will need to be managed in accordance with applicable LORS. Soil sampling will likely be required to profile the waste for disposal classification purposes. 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 Resource Conservation and Recovery Act (RCRA) and California Code of Regulations (CCR) Title 22 criteria. Waste disposal facilities are listed in Table 5.13-1, Waste Recycling/Disposal Facilities.

Non-hazardous and hazardous wastes are not expected to be encountered at paved parking and equipment staging locations. If site grading is necessary to use unpaved parking and equipment staging locations, then non-hazardous soil and debris (trash, asphalt) may be generated. With the implementation of Mitigation Measures WM-1 through WM-7, described in Section 5.13.4, below, impacts will be less than significant.

5.13.2.2 Operation Phase

Project Operations

Operation of the plant will generate wastes resulting from processes, routine plant maintenance, and office activities typical of IGCC power-generation operations. The operating waste streams and management methods are summarized in Table 5.13-3, and are described in more detail below. Non-hazardous wastes generated during operation of the power plant 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 electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the water supply line will not generate any significant amounts of waste. The types of waste and their estimated quantities are shown in Table 5.13-3. A waste management plan that encompasses hazardous and nonhazardous wastes will be prepared prior to operations.

**Table 5.13-3
Summary of Operating Waste Streams and Management Methods¹**

Waste Stream	Waste Classification	Anticipated Maximum Amount / yr	Disposal Method
Spent Claus Sulfur Recovery Catalyst (Activated Alumina)	Non-Hazardous	7 tons	Dispose at a non-hazardous waste landfill.
Claus Catalyst Support Balls (Activated Alumina)	Non-Hazardous	3 tons	Recycle
Spent Sour Shift Catalyst (Cobalt Molybdenum)	Non-Hazardous	67 tons	Send to reclaimer for metals recovery.
Spent Titania (TiO ₂)	Non-Hazardous	2 tons	Send to reclaimer for metals recovery.
Spent Hydrogenation Catalyst (Cobalt Molybdenum)	Non-Hazardous	2 tons	Send to reclaimer for metals recovery.
Hydrogenation Catalyst Support Balls (Alumina Silicate)	Non-Hazardous	1 ton	Recycle
Spent SCR Catalyst (Titanium, vanadium, tungsten, combustion contaminants, and inert ceramics)	Hazardous	1,600 cubic feet	Return to supplier to reclaim/dispose.
Spent CO/VOC oxidation catalyst (Noble metals, other inerts, and combustion contaminants)	Non-Hazardous	600 cubic feet	Send to reclaimer for noble metals recovery.
Amine Regenerator Carbon Filter TGTU (Activated Carbon)	Hazardous	26 tons	Stabilize and dispose at a hazardous waste landfill.
Spent Mercury Removal Carbon Beds (Impregnated activated carbon)	Hazardous	14 tons	Stabilize and dispose at a hazardous waste landfill.
Sour Water Carbon Filter (Activated Carbon)	Hazardous	48 tons	Stabilize and dispose at a hazardous waste landfill
Process Wastewater ZLD Solids (Inorganic and organic salts)	May be Non-Hazardous or Hazardous	5,300 tons	Stabilize and dispose at a hazardous waste landfill
Plant Wastewater ZLD Solids (Inorganic and organic salts)	May be Non-Hazardous or Hazardous	15,000 tons	Stabilize and Characterize for landfill disposal.
Refractory Brick and Insulation	Anticipated Non-Hazardous	360 tons	Characterize for landfill disposal.
MDEA Sludge TGTU	Hazardous	2,000 gallons	Dispose at an incinerator or hazardous waste landfill.
Sour Water Sludge	Hazardous	30 tons	Dispose at an incinerator or hazardous waste landfill.
Amine Absorber Residues TGTU (Iron and salts)	Non-Hazardous	20 cubic yards	Dispose at a non-hazardous waste landfill.

**Table 5.13-3
Summary of Operating Waste Streams and Management Methods¹ (Continued)**

Waste Stream	Waste Classification	Anticipated Maximum Amount / yr	Disposal Method
Spent Caustic	Hazardous	400,000 gallons	Offsite treatment to oxidize sulfides to sulfates. Adjust pH and dispose as non-hazardous.
Spent Sulfuric Acid	Hazardous	14,000 gallons	Dispose of at hazardous waste disposal facility.
Off-Line Combustion Turbine Wash Wastes (Detergents and residues)	Hazardous or Non-Hazardous	15,000 gallons	Characterize and dispose as non-hazardous or hazardous waste.
HRSG Wash Water (Infrequent) (Detergent, residues, neutralized acids)	Hazardous or Non-Hazardous	100,000 gallons	Characterize and dispose as non-hazardous or hazardous waste
Water Treatment Sludge and Used Water Filter Media	Non-Hazardous	90 tons	Characterize and dispose as non-hazardous or hazardous waste.
Used Oil	Hazardous	8,000 gallons	Recycle.
Spent Grease	Hazardous	16 55-gallon drums	Characterize and dispose as hazardous waste.
Miscellaneous Filters and Cartridges	Hazardous or Non-Hazardous	150 cubic yards	Characterize and dispose as non-hazardous or hazardous waste.
Miscellaneous Solvents	Hazardous	two 55-gallon drums	Recycle or disposal as hazardous waste.
Flammable Lab Waste	Hazardous	two 55-gallon drums	Characterize and dispose as hazardous waste.
Waste Paper and Cardboard	Non-Hazardous	320 cubic yards	Recycle
Combined Industrial Waste (Used PPE, materials, small amounts of refractory, slurry debris, etc.)	Non-Hazardous	320 cubic yards	Dispose at a non-hazardous waste landfill.
Gasification solids (Solid slag-like product)	Anticipated to be Non-Hazardous or covered by regulatory exclusion	51,000 to 274,000 short tons (wet); 25,500 to 137,000 short tons (dry)	Reuse, reclaim sellable metals, or characterize for landfill disposal in accordance with applicable LORS.

Source: HECA Project

Notes:

¹ All numbers are estimates.

HRSG = heat recovery steam generator

MDEA = methyldiethanol amine

PPE = personal protective equipment

SCR = selective catalytic reduction

TiO₂ = Titania

TGTU = tail gas treating unit

ZLD = zero liquid discharge

Non-Hazardous Solid Waste

The following types of non-hazardous solid waste may be generated: paper, wood, plastic, metal cardboard, deactivated equipment and 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 segregated and recycled to the extent practical, and the remainder will be removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Based on the remaining capacity and estimated closure dates of the Class III landfills in California, the non-hazardous wastes that cannot be recycled are not expected to significantly impact the capacity of the Class III landfills. With the implementation of the mitigation measures described in Section 5.13.4.2, below, impacts related to non-hazardous waste during operation will be less than significant.

Gasification Solids

The gasifier will produce a solid slag-like by-product called “gasification solids.” These solids are made of ash from the petcoke, fluxant, and unconverted carbon that exit the gasifier in the solid phase.

Because the power plant has not yet been constructed, the gasification solids have not yet been generated. Consequently, the composition can only be projected, based on feed materials. An extensive review was performed of publicly available documents pertaining to the gasification solids generated by other IGCCs. Other IGCC power plants with beneficial reuse of the gasification solids match within normal variances the Project design, operation, gasification equipment, process specifications, and feed material blends.

Reuse potential is being evaluated and includes possibilities in the cement industry, aggregate or road base industry, metal reclaiming (for vanadium and nickel), and/or blending with petcoke to form a sellable fuel.

Gasification solids produced from the use of a feedstock that is at least 50 percent coal is excluded from hazardous waste regulations and requirements, per the exclusions in applicable federal and California regulations (i.e., Title 40 of the Code of Federal Regulations (40 CFR) Section 261.4(b)(7)(ii)(F), and California regulation 22 CCR Section 66261.4(b)(5)(A)). Based on analytical data compiled from similar IGCC operations, it has been well documented that, even when the feedstock is less than 50 percent coal, the gasification solids from the Project are anticipated to be non-leachable. The solids from other IGCCs passed the federal toxic characteristic leachability protocol (TCLP) tests, and were therefore characterized as non-hazardous. No publicly available information was found regarding the analysis of IGCC solids by the California toxic leachability test (i.e., pursuant to the California the Waste Extraction Test found in CCR Title 22), but the solids are anticipated to be non-leachable, based on available analytical results from federal leachability TCLP tests. The Project has made a significant design effort to produce low-carbon gasification solids to reduce the potential leachability of the

solids. Gasification solids that are produced from feedstocks of less than 50 percent coal will be analyzed, characterized, and managed in accordance with applicable LORS.

Liquid Wastes

There will be no direct surface water discharge of industrial wastewater or stormwater from process areas. The primary sources of wastewater at the Project will be from cooling tower blowdown, water supply raw water treatment reject, and process condensate wastewater from the gasifier. Process wastewater will be treated on-site and recycled within the gasification and power plant systems, to the maximum practical extent. Cooling tower blowdown that cannot be recycled and reject water from the raw water treatment plant are sent to a plant wastewater ZLD unit (Plant ZLD). Gasification blowdown that cannot be recycled is sent to a process wastewater ZLD unit (Process ZLD). Each blowdown stream is sent to a separate utility ZLD. Each stream is treated and recovered as high-purity water and ZLD solids. Any contaminants in the gasification blowdown stream are concentrated in the ZLD solids. The ZLD solids generated from the Plant ZLD and the Process ZLD systems are kept separate to avoid unnecessary contamination. The ZLD solids will be disposed of at an approved offsite facility in accordance with applicable LORS. Solids from the Process ZLD system has the potential to be classified as hazardous pursuant to the hazardous waste regulations of CCR Title 22, and is listed as such in the summary table (Table 5.13-3). Utility ZLD solids are not anticipated to be hazardous. Additional information on the ZLD processes is provided in the Zero Liquid Discharge subsection below.

Sanitary wastewater from the Project restrooms, showers, and kitchens will be disposed to a private on-site sewage disposal system consisting of a conventional septic tank and leach field. No municipal system is available in the vicinity of the Project Site.

Sour Water/Black Water

Process water produced within the gasification process must be treated to remove dissolved gases (carbon dioxide, ammonia [NH₃], hydrogen sulfide [H₂S] and other trace contaminants) before being recycled to the Slurry Preparation area or the Sour Shift and Gas Cooling unit. The dissolved gases are driven from the water using steam-stripping techniques. The steam provides heat and a sweeping medium to strip (expel) the gases from the water. The sour gas is directed to the Claus SRU.

Zero Liquid Discharge

There will be two separate ZLD systems: one for gasification wastewater, and one for mixed plant wastewater. Mixed plant wastewater includes cooling tower blowdown, raw water treatment reject, evaporative cooler blowdown, and other miscellaneous drains.

The ZLD systems will be comprised of traditional thermal water treatment technology. The pure distillate produced from the evaporators in both systems will be returned to the gasification or power blocks for reuse. The ZLD solids will be (separately) trucked to an approved off-site material disposal facility in accordance with applicable LORS.

Stormwater Management

Stormwater management for the Project will be designed to avoid direct discharge to offsite surface waters.

Stormwater generated at the Project will be managed as follows:

- Non-contact stormwater runoff outside the power block and process areas will be routed to the stormwater retention basins. After solids have settled and water is determined to be suitable for reuse, stormwater will be filtered for suspended solids removal before being used as cooling tower makeup water. If this collected stormwater is determined to be contaminated and unsuitable for cooling tower use, then it will be reused in the slurry preparation area.
- Stormwater that may be contaminated with oil will be separately collected and routed to an oil/water separator. Recovered waste oil from the separator will be disposed off site in accordance with applicable LORS. The separated water will be reused or sent to the Plant ZLD system.
- Runoff in the AGR Unit will be collected in a separate, dedicated system for isolation purposes in the unlikely event of a methanol spill.
- Stormwater runoff from chemical and oil storage areas will be held within the associated secondary containment. Stormwater held in these areas will first be tested. If it is acceptable for cooling water makeup, then it will be routed to the retention pond. Oily stormwater will be routed through an oil/water separator.
- Drainage within process areas where solids (e.g., coal, petcoke, fluxant, or gasifier solids) are present will be collected and conveyed to the solids-handling water collection facility. The collection facility will be constructed of concrete, and will provide for mobile equipment access to remove accumulated solids. Water that accumulates within the solids-handling collection facility will be reused as make-up to gasification.
- Drainage from remote solids handling areas such as feedstock truck unloading, inactive feedstock storage, active feedstock silos, and the crusher station will be collected in local area retention basins for settlement, testing, reuse, and/or treatment as appropriate.
- Offsite stormwater runoff will be routed around the Project Site, following the existing drainage patterns as feasible.

An SWPPP will be developed prior to operations. The Project stormwater runoff will be managed in accordance with this plan, which will include the measures outlined above. Retention basin locations are shown on Figure 2-36, Preliminary Storm Water Drainage Plan. With the implementation of these measures, impacts related to stormwater management will be less than significant.

Hazardous Wastes

Various types of hazardous wastes will be generated during operational activities, including spent catalysts, filters and ZLD solids, sludge, spent caustics and solvents, used oils from equipment maintenance, and oil-contaminated materials such as spent oil filters, rags, or other cleanup materials. Spent catalysts will be returned to the manufacturer for metals reclamation or disposed of in accordance with applicable LORS. Used oil generated will be recycled. Waste filters and ZLD solids, sludge, spent caustics and solvents, and all other hazardous wastes requiring disposal will be disposed of in a licensed hazardous waste disposal facility. Other occasional waste streams include alkaline- or acid-cleaning solutions used during chemical cleaning of equipment. Table 5.13-3, Summary of Operating Waste Streams and Management Methods, summarizes the hazardous waste to be generated from operation of the Project.

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a licensed hazardous waste facility. Hazardous wastes will be transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, destruction certifications, biennial reports, etc., will be kept on site and accessible for inspection for 3 years. Land disposal restriction notices/certificates will be kept on site and accessible for inspection for 5 years.

Based on the remaining capacity and estimated closure dates of the Class III landfills in California, the non-hazardous wastes that cannot be recycled are not expected to significantly impact the capacity of the Class III landfills. With the implementation of the mitigation measures described in Section 5.13.4.2, below, impacts related to hazardous waste during operations will be less than significant.

5.13.2.3 Abandonment/Closure

Section 3.0, Facility Closure, of this Revised AFC contains a detailed discussion of closure issues that are summarized in this subsection. If it becomes necessary to close the plant temporarily for any reason (due to a disruption in the natural gas supply or feedstocks, flooding, damage from an earthquake, fire, storm, etc.), facility security will be maintained on a 24-hour basis and the CEC will be notified. A contingency plan for temporary closure will be prepared prior to startup of the facility to ensure compliance with all LORS and to protect human health and the environment. Depending on the duration of any temporary shutdown, the plan will direct the safe shutdown of all equipment and the draining of all chemicals from the process. Any waste generated under these circumstances will be disposed of in accordance with all applicable LORS.

The planned life of the facility is a minimum of 20 years. A general closure plan identifying the handling and disposal requirements for nonhazardous and hazardous wastes will be prepared prior to closure. This plan will identify opportunities for recycling. All equipment containing liquids will be drained and decommissioned as part of closure procedures to protect public health, safety, and the environment. Unused chemicals will be sold back to the suppliers or other purchasers where practicable. All nonhazardous wastes will be disposed of in appropriate landfills or recycled. Hazardous wastes will be disposed of according to all applicable LORS. The Project Site will be secured 24 hours per day during the decommissioning activities.

5.13.3 Cumulative Impacts Analyses

Past, current, and potential future projects, including the proposed Project, would generate non-hazardous waste. There are, however, adequate recycling facilities and landfill capacities to dispose of the waste from the Project over the next 20 years. Based on information provided by the County, there are currently 20 new developments proposed within a 6-mile area of the proposed Project. Of these 20 projects, one is oil-and-gas related, two are agriculture, two are commercial, three are residential, two are mixed use, and ten are industrial in nature. While non-hazardous waste generated by the proposed Project would add to the total waste generated in Kern County and in California, recycling of non-hazardous wastes from the proposed Project and other proposed developments listed above will play a significant role in reducing the amount of material that is sent to landfill. There are adequate recycling and non-hazardous-waste disposal facilities to handle the non-hazardous wastes from the proposed Project and other proposed developments; thus, the cumulative impacts from the proposed Project would be considered less than significant.

5.13.4 Mitigation Measures

5.13.4.1 Construction

Waste Mitigation (WM) Measure-1

Prior to the initiation of the Project construction phase, construction workers will receive waste-related training. Training will focus on the recognition and proper handling of subsurface soil contamination, as well as contingency procedures to be followed to provide worker safety and protect the public.

WM-2

A detailed waste management plan for waste generated during construction will be prepared at least 60 days prior to rough grading to assure proper storage, labeling, packaging, recordkeeping, manifesting, waste minimization, and disposal of hazardous materials and waste. A waste management plan will also be prepared for operation of the Project. The waste management plan will include:

- A description of each hazardous waste stream;
- Waste classification procedures;
- Waste container and label requirements;
- Accumulation, handling, transport, treatment, and disposal procedures for each waste;
- Waste minimization procedures;
- Preparedness, prevention, contingency, and emergency procedures; and
- Personnel training.

WM-3

Hazardous wastes will be accumulated 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 constructed according to local codes and requirements. Hazardous waste containers and labels will be maintained according to applicable regulations. The hazardous waste storage areas will be inspected and maintained at least weekly, as required.

WM-4

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a licensed hazardous waste facility in accordance with applicable LORS. Hazardous wastes are transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, destruction certifications, etc., will be kept on site and accessible for inspection for 3 years. Land disposal restriction notices/certificates will be kept on site and accessible for inspection for 5 years.

WM-5

Spill control and management procedures will be included in the emergency response procedures developed for the Project prior to operation. 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. The spill response procedures are discussed further in Section 5.12, Hazardous Materials Handling.

WM-6

Facility workers will receive hazardous materials training as required by the Occupational Safety & Health Administration (OSHA), Hazard Communication Standard. Additionally, workers will be trained in hazardous waste procedures, spill contingencies, and waste minimization procedures in accordance with CCR Title 22. Hazardous waste training includes the following subjects:

- Hazardous waste characteristics;
- 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 and transportation requirements; and
- Waste minimization practices.

WM-7

Procedures to minimize hazardous waste generation will be established. Workers will be trained in procedures to reduce the volume of hazardous wastes generated at the Project. 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 wastes will be recycled whenever possible.

Implementation of the above waste management procedures for handling construction-related debris, and hazardous wastes, where encountered, will mitigate demolition and construction-related impacts to a less-than-significant level. No further mitigation is proposed.

5.13.4.2 Operations

Project Site

The Applicant will update the waste management procedures for construction of the Project Site and implement them for operations at the power plant. In addition, the Applicant will develop and implement procedures and requirements as outlined in the Hazardous Materials Business Plan (HMBP). These procedures and programs will minimize potential site-operations-related impacts.

Off-Site Structures

Periodic inspection and maintenance of the electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the process and potable water supply line in accordance with applicable LORS will mitigate potential operations-related impacts associated with the linear facilities.

5.13.4.3 Monitoring Program

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

5.13.5 Laws, Ordinances, Regulations, and Standards

5.13.5.1 Federal

RCRA, 42 United States Code (USC), § 6901 to § 6992k, provides the basic framework for federal regulation of non-hazardous and hazardous waste. RCRA's Subtitle D establishes state responsibility for regulating non-hazardous wastes, while Subtitle C controls the generation, transfer, storage, and disposal of hazardous waste through a comprehensive "cradle to grave" system of hazardous waste management techniques and requirements. The U.S. Environmental Protection Agency (USEPA) is responsible for implementing the law, and the implementing regulations are set forth in 40 Code of Federal Regulations (CFR) 260 *et seq.* The law allows USEPA to delegate the administration of the RCRA programs to the various states, provided that the state programs meet or are more stringent than the federal requirements. California's program was authorized by USEPA on August 1, 1992, and the California EPA's Department of Toxic Substances Control (DTSC) is responsible for administering the program.

The Clean Water Act (CWA) 33 USC, § 1251 *et seq.* provides the regulatory framework for managing the discharge of wastewater to waters of the U.S. The USEPA has nationwide authority to implement the CWA, but states may be authorized to administer various aspects of the National Pollutant Discharge Elimination System (NPDES), as well as pretreatment programs. California is authorized under the CWA to administer the NPDES program, implement publicly owned treatment works' pretreatment programs, oversee federal facilities, and issue general permits.

Under 49 CFR 172, 173, and 179, controls are provided on labeling, placarding, and packaging for hazardous waste shipments that will be shipped offsite over the state highways and roads. The U.S. Department of Transportation and the California Highway Patrol are responsible for its administration and enforcement.

5.13.5.2 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. County of Kern, Environmental Health Services Department (EHSD) has the authority to assure the proper storage and disposal of solid waste in Kern County.

Wastewater is regulated under California's Porter-Cologne Water Quality Control Act, which established a statewide system for water pollution control, Water Code, § 13000 *et seq.* The State Water Resources Control Board (SWRCB) 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.

Accumulation of hazardous waste on site is regulated under 22 CCR Section 66262.34. Hazardous waste cannot be stored on site for more than 90 days, so any hazardous waste stored on site at the Project will have to be appropriately transferred within that time period.

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 (HWCL), California Health and Safety Code, § 25100 *et seq.* It should be noted that California's HWCL 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 HWCL rests with the DTSC. However, the County of Kern EHSD provides most regulatory functions covering those who generate hazardous waste.

5.13.5.3 Local

For hazardous waste, the designated Certified Unified Program Agency (CUPA) for the Project area is the County of Kern EHSD. They have delegated authority to administer state and federal programs. In addition, the EHSD regulates the storage of hazardous materials in USTs and cleanup of petroleum releases from USTs. The EHSD will be contacted in the event of a release of hazardous wastes or materials to the environment. The EHSD assumes enforcement responsibility for the implementation of Title 23 of the CCR and regulates the generation and storage of hazardous waste for the Project area through the requirement for a HMBP.

The following summarizes the applicable LORS that govern the handling of non-hazardous and hazardous wastes. The LORS applicable to the handling of waste at the Project Site are also summarized in Table 5.13-4, Summary of LORS – Waste Management.

5.13.6 Involved Agencies and Agency Contacts

Agencies with jurisdiction to issue applicable permits or enforce LORS related to waste management are shown in Table 5.13-5.

5.13.7 Permits Required and Permit Schedule

The Project will apply for a USEPA hazardous waste generator identification number from the USEPA and a hazardous waste generator permit from the County of Kern EHSD.

The Project will be required to develop an HMBP for the County of Kern EHSD.

A summary of applicable waste permits is presented in Table 5.13-6, Applicable Permits.

**Table 5.13-4
Summary of LORS – Waste Management**

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal Jurisdiction				
RCRA Subtitle C and D, 42 USC § 6901 to § 6992k, and § 6.12.2.1	Regulate non-hazardous and hazardous wastes. Laws implemented by the state.	Section 5.13.5.1	USEPA Region IX and DTSC	Tetra Tech EMI (Contractor for US EPA) (415) 495-8895 and DTSC Duty Officer Clovis Field Office (519) 297-3901
40 CFR § 260 <i>et seq.</i>	Implementing regulations for RCRA Subtitle C law. Implemented by USEPA by delegating to the state.	Section 5.13.5.1	DTSC	DTSC Duty Officer Clovis Field Office (519) 297-3901
49 CFR 172,173, and 179	Controls labeling, placards, and packaging for hazardous waste shipments.	5.13.1	California Highway Patrol and Department of Transportation	California Highway Patrol (Bakersfield Office) 4040 Buck Owens Blvd., Bakersfield (661) 864-4444
Federal Clean Water Act, 33 USC § 1251 <i>et seq.</i>	Regulates wastewater discharges to waters of the U.S. The NPDES program is administered at the state level.	Section 5.13.5.1	Central Valley RWQCB	Doug Patteson (519) 445-5156
State Jurisdiction				
California Integrated Waste Management Act, Public Resources Code § 40000 <i>et seq.</i>	Implements RCRA regulations for non-hazardous waste.	Section 5.13.5.2	County of Kern EHSD	Matthew Constantine, Director (661) 862-8700
Porter-Cologne Water Quality Control Act of 1998, Water Code § 13000 <i>et seq.</i>	Regulates wastewater discharges to surface and groundwater of California. NPDES program implemented by SWRCB.	Section 5.13.5.2	Central Valley RWQCB	Doug Patteson (519) 445-5156
22 CCR § 66262.34	Regulates accumulation periods for hazardous waste generators. Typically hazardous waste cannot be stored on site for more than 90 days.	Section 5.13.5.2	DTSC	DTSC Duty Officer Clovis Field Office (519) 297-3901
California Hazardous Waste Control Law, California Health and Safety Code § 25100 <i>et seq.</i>	Regulates hazardous waste handling and storage.	Section 5.13.5.2	County of Kern EHSD	Matthew Constantine, Director (661) 862-8700

**Table 5.13-4
Summary of LORS – Waste Management (Continued)**

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Local Jurisdiction				
County of Kern EHSD	Regulates enforcement responsibility for the implementation of Title 23, Division 3, Chapters 16 and 18 of the CCR, as it relates to hazardous material storage and petroleum UST cleanup.	Section 5.13.5.3	County of Kern EHSD	Matthew Constantine, Director (661) 862-8700
County of Kern EHSD	Regulates hazardous waste generator permitting, and hazardous waste handling and storage.	Section 5.13.5.3	County of Kern EHSD	Matthew Constantine, Director (661) 862-8700
County of Kern General Plan Public Facilities Element	Will ensure all new development complies with applicable provisions of County Integrated Solid Waste Management Plan.	Section 5.13.5.3	Kern County Planning and Building Department	(661) 862-8600

Source: California DTSC, 2008; Cal-EPA, Central Valley RWQCB, 2008; County of Kern, Planning Department, 2008; County of Kern, Building Department, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

- CCR = California Code of Regulations
- CFR = Code of Federal Regulations
- DTSC = Department of Toxic Substances Control
- EHSD = Environmental Health Services Department
- LORS = laws, ordinances, regulations, and standards
- NPDES = National Pollutant Discharge Elimination System
- RCRA = Resource Conservation and Recovery Act of 1976
- RWQCB = Regional Water Quality Control Board
- SWRCB = State Water Resources Control Board
- U.S. = United States
- USC = United States Code
- USEPA = U.S. Environmental Protection Agency
- UST = underground storage tank

**Table 5.13-5
Agency Contact List for LORS**

Agency		Contact	Address	Telephone
1	USEPA	Tetra Tech EMI (Contractor for US EPA) Attention: Notifications	135 Main Street, Suite 1800 San Francisco, CA 94105	(415) 495-8895
2	DTSC	Noel Lavery DTSC Duty Officer Clovis Field Office	1515 Tollhouse Road Clovis, CA 93611	(916) 255-3618 (559) 297-3901
		Charles Corcoran Office of Policy	P.O. Box 806 Sacramento, CA 95812-0806	(916) 327-4499
3	County of Kern EHSD	Matthew Constantine, Director	2700 M Street, Suite 300 Bakersfield, CA 93301	(661) 862-8700
4	RWQCB Central Valley Region	Doug Patteson (NPDES) Surface Water Discharges	1685 E Street Fresno, CA 93706	(559) 455-6190

Source: California DTSC, 2008; Cal-EPA, Central Valley RWQCB, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

- DTSC = Department of Toxic Substances Control
- EHSD = Environmental Health Services Department
- LORS = laws, ordinances, regulations, and standards
- NPDES = National Pollutant Discharge Elimination System
- RWQCB = Regional Water Quality Control Board

**Table 5.13-6
Applicable Permits**

Responsible Agency	Permit/Approval	Schedule
USEPA	USEPA Hazardous Waste Generator Identification Number	Prior to start of plant construction
Regional Water Quality Control Board	Central Valley Region NPDES Construction	Notice of Intent filed 30 Days prior to construction
County of Kern EHSD	Hazardous Waste Generator Program Permit	30 days prior to the generation of hazardous waste
County of Kern EHSD	Hazardous Materials Business Plan	30 days prior to the storage and use of hazardous materials

Source: California DTSC, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

- DTSC = Department of Toxic Substances Control
- EHSD = Environmental Health Services Department
- USEPA = U.S. Environmental Protection Agency

5.13.8 References

Barclays Law Publishers, ND. Barclays Official California Code of Regulations.

Cal-EPA (California Environmental Protection Agency), Central Valley RWQCB (Regional Water Quality Control Board), 2008. Information downloaded from: <http://www.waterboards.ca.gov/centralvalley>. March 2008.

Cal-EPA (California Environmental Protection Agency), DTSC (Department of Toxic Substances Control), 2008. Information downloaded from: <http://www.dtsc.ca.gov>. March 2008.

California Stormwater Quality Association, 2004. "Stormwater Best Management Practice Handbook, Industrial and Commercial."

CIWMB (California Integrated Waste Management Board), 2008. Information downloaded from: <http://www.ciwmb.ca.gov/SWIS>. March 2008.

County of Kern, Building Department, 2008. Information downloaded from: <http://www.co.kern.ca.us/bid/>. March 2008.

County of Kern, Planning Department, 2008. Information downloaded from: <http://www.co.kern.ca.us/planning/>. March 2008.

Environmental Data Resources Database Report. February, 2008.

Kern County Environmental Health Services Department. Information downloaded from: <http://www.co.kern.ca.us/eh>. March 2008.

Kern County Waste Management Department, 2008. Information downloaded from: <http://www.co.kern.ca.us/wd/>. March 2008.

Office of the Federal Register, 2008. Code of Federal Regulations, Title 40, Parts 260 to 265, Revised July 1.

URS (URS Corporation), 2009. Phase I Site Assessment.

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	Section 5.13, p. 5.13-1 Section 5.13.2, p. 5.13-4, Section 2		
Appendix B (e) (1)	A discussion of how facility closure will be accomplished in the event of premature or unexpected cessation of operations.	Section 5.13.2.3, p. 5.13-15		
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.	Section 5.13.1, p. 5.13-2 Section 5.13.2, p. 5.13-4 Section 5.13.3, p. 5.13-15 Section 5.13.4, p. 5.13-16		

Adequacy Issue: Adequate _____ Inadequate _____
 Technical Area: **Waste Management**
 Project Manager: _____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date _____
 Technical Staff: _____
 Technical Senior: _____

Project: _____
 Docket: _____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (12) (A)	A Phase I Environmental Site Assessment (ESA) 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. The Phase I ESA shall have been completed no earlier than one year prior to the filing of the AFC.	Section 5.13.1.1, p. 5.13-2 Appendix M		
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 <i>et seq.</i> , chemical composition, estimated annual weight or volume generated, and estimated frequency of generation.	Section 5.13.2, p. 5.13-4 Table 5.13-2, p. 5.13-7 Table 5.13-3, p. 5.13-10		

Adequacy Issue: Adequate _____ Inadequate _____
 Technical Area: **Waste Management**
 Project Manager: _____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date _____
 Technical Staff: _____
 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 (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 <i>et seq.</i> , 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.	Section 5.13.1.2, p. 5.13-3 Section 5.13.1.3, p. 5.13-4 Table 5.13-1, p. 5.13-5		
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.	Section 5.13.2.1, p. 5.13-7 Section 5.13.2.2, p. 5.13-9 Table 5.13-2, p. 5.13-7 Table 5.13-3, p. 5.13-10		
Appendix B (h) (1) (B)	A discussion of any measures proposed to improve adverse site conditions.	Section 5.13.4, p. 5.13-16		
Appendix B (h) (1) (D) (v)	The waste disposal system and on-site disposal sites;	Section 5.13.2.1, p. 5.13-7 Section 5.13.2.2, p. 5.13-9		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with 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; and	Section 5.13.5, p. 5.13-18 Table 5.13-4, p. 5.13-20		

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 (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, 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.	Section 5.13.5, p. 5.13-18 Section 5.13.6, p. 5.13-21 Table 5.13-5, p. 5.13-21		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Table 5.13-4, p. 5.13-20 Table 5.13-5, p. 5.13-21		
Appendix B (i) (3)	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 5.13.7, p. 5.13-22 Table 5.13-6, p. 5.13-22		