

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NPDES NO. CA0081957

MONITORING AND REPORTING PROGRAM NO. R5-2003-0013
FOR
WHEELABRATOR SHASTA ENERGY COMPANY INC.
AND WHEELABRATOR LASSEN INC.
SHASTA COUNTY

This monitoring and reporting program (MRP) presents requirements for monitoring of discharges from the Shasta facility and Lassen facility. This MRP is issued pursuant to Water Code Section 13267. Specific sampling station locations are identified in Order No. R5-2003-0013. Unless otherwise noted, the Discharger shall not implement any changes to this MRP until a revised MRP is issued by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Discharge flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

The MRP incorporates requirements for monitoring the following:

General Monitoring Requirements

- Precipitation
- Water supply
- Aboveground petroleum storage
- Priority pollutants (at permit renewal)
- Acute and chronic toxicity (at permit renewal)
- Combined effluent from both facilities (Discharge 001)
- Receiving water (R-1 and R-2)

Shasta Facility

- Ponds
- Landscape irrigation wastewater (blowdown pond)
- Under drain system (IW-Shasta and Discharge 002)
- Septic tank leachfield
- Ash

Lassen Facility

- Internal waste sources
- Discharge to Shasta facility retention pond (IW-Lassen)
- Industrial storm water

GENERAL MONITORING REQUIREMENTS

PRECIPITATION MONITORING

Precipitation information shall be collected as follows and submitted with the monthly monitoring report:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Precipitation	Inches	Visual	Daily	Monthly

WATER SUPPLY MONITORING

Water samples shall be collected from all Shasta facility and Lassen facility supply wells, analyzed, and reported in accordance with the standards provided by the Shasta County Department of Resource Management, Environmental Health Division. A report of the water supply monitoring shall be submitted with the monthly monitoring report.

ABOVEGROUND PETROLEUM STORAGE MONITORING

The Discharger shall visually inspect the aboveground petroleum storage tanks at the Shasta and Lassen facilities, as required by the facility's Spill Prevention Control and Countermeasure Plan. A report of the inspection shall be submitted. In the event of a petroleum release, a report shall be submitted describing the corrective action that was taken to remediate and dispose of the contaminated area. The results shall be submitted with the monthly monitoring report.

PRIORITY POLLUTANTS

Additional sampling shall be conducted during two separate sampling events prior to permit renewal to determine if the discharge contains the metals, volatile substances, semi-volatile substances, and pesticides identified in the California Toxics Rule (CTR) and National Toxics Rule (NTR). Two grab samples shall be collected from Discharge 001 and R-1. The first sampling event shall be performed during April through October, when water is diverted into the ACID canal for irrigation. The second sampling event shall be collected during storm water runoff (November through March), when there is upstream flow in the ACID canal. The samples shall be analyzed for pH, hardness, semi-volatile substances (EPA Method 8270C or equivalent), volatile substances (EPA Method 8260B or equivalent), and pesticides (EPA Method 8081A or equivalent). The estimated flow rate of the receiving water at the time of sampling is also required. All chemical analyses shall be performed at a laboratory certified by the California Department of Health Services.

ACUTE TOXICITY

Acute toxicity monitoring shall be conducted once prior to permit renewal to determine whether the effluent (Discharge 001) is contributing toxicity to the ACID canal and/or Cottonwood Creek. The grab sample shall be collected at Discharge 001, during periods of storm water runoff (November through March), when there is upstream flow in the ACID canal. The sample shall be representative of the volume and quality of the discharge. The date and time of sample collection shall be recorded. The 96-hour bioassay shall be conducted using rainbow trout as the test species. The percent survival shall be reported and the results submitted with the monitoring report.

THREE SPECIES CHRONIC TOXICITY

Chronic toxicity monitoring shall be conducted once, prior to permit renewal, to determine whether the effluent (Discharge 001) is contributing toxicity to the ACID canal and/or Cottonwood Creek. The testing shall be conducted as specified in EPA 600/4-91-002, or latest edition. Chronic toxicity samples shall be collected at the discharge prior to its entering the ACID canal. Twenty-four hour composite or individual grab samples shall be representative of the volume and quality of the discharge. Date and time of sample collection shall be recorded. The results shall be submitted with the monitoring report and include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum

Frequency: Once, prior to permit renewal. The sample shall be collected during periods of storm water runoff (November through March) when there is upstream flow in the ACID canal.

	Dilutions (%)					Controls	
	<u>100</u>	<u>75</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>Receiving Water</u>	Lab Water
% Discharge 001 Effluent	100	75	50	25	12.5	0	0
% Dilution Water ¹	0	25	50	75	87.5	100	0
% Lab Water	0	0	0	0	0	0	100

¹ Dilution water shall be receiving water from the ACID canal taken upstream from the discharge point. If the receiving water exhibits toxicity the Discharge may be required to use lab water as dilution water. The dilution series may be modified after the initial test upon approval of the Executive Officer.

EFFLUENT MONITORING
 (DISCHARGE 001)

The Discharger shall inspect the Anderson Cottonwood Irrigation District (ACID) canal daily near the discharge and report weekly whether it contains irrigation or storm water. Effluent samples shall be collected at the point of discharge from the retention pond to the ACID canal (Discharge 001). The results shall be submitted with the monthly monitoring report and include the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Estimated Flow	gpd	Continuous	Daily
Temperature	°F	Grab	Weekly
Chlorine	mg/L	Grab	Weekly
Chloride	mg/L	Grab	Weekly
Specific Conductance	µmhos/cm	Grab	Weekly
Settleable Solids	ml/L	Grab	Weekly
Total Dissolved Solids	mg/L	Grab	Weekly
pH	Units	Grab	Monthly
Sulfate	mg/L	Grab	Monthly
Fecal Coliform	MPN ¹ /100mL	Grab	Monthly
Total Coliform	MPN ¹ /100mL	Grab	Monthly
Turbidity	NTU	Grab	Monthly ²
Arsenic	µg/L	Grab	Quarterly ³
Manganese	µg/L	Grab	Quarterly ³
Iron	µg/L	Grab	Semi-Annually ⁴
COD	mg/L	Grab	Semi-Annually ⁴
Oil and Grease	mg/L	Grab	Semi-Annually ⁴
Total Suspended Solids	mg/L	Grab	Semi-Annually ⁴
Tannins & Lignins	mg/L	Grab	Semi-Annually ⁴
Turbidity	NTU	Grab	Semi-Annually ⁴
General Minerals	mg/L	Grab	Annually ⁵
<u>Priority Pollutant Inorganics</u>	mg/L	Grab	Annually ⁵

¹ Most probable number, if sample results are >1600 use 25 tube fermentation technique.

² During April through October, when water is diverted into the ACID canal for irrigation

³ Twice, from April through October, when water is diverted into the ACID canal for irrigation and twice during storm water runoff (November through March), when there is upstream flow in the ACID canal.

⁴ Samples shall be collected during the first hour of the first storm water discharge after the dry season and once thereafter during the wet season.

⁵ Once, from April through October, when water is diverted into the ACID canal for irrigation.

RECEIVING WATER MONITORING

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions in the ACID canal at a point approximately 100 feet upstream (R-1) and approximately 200 feet downstream (R-2) of the discharge. Receiving water sampling locations may be adjusted after completion of the receiving water impact report requested in Provision No. G.10. of Order No. R5-2003-0013. Notes on receiving water conditions shall be summarized in the monthly monitoring report. Attention shall be given to the presence of or absence of:

- | | | | |
|---------------------------------|-----------------------|--------------------|------------------|
| a. Bark or sawdust | c. Oil sheen or slick | e. Scum or foam | g. Aquatic life |
| b. Floating or suspended matter | d. Discoloration | f. Bottom deposits | h. Upstream flow |

Grab samples shall be collected at approximately the same time as the discharge samples. The results shall be submitted with the monthly monitoring report and include the following.

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>
Estimated Flow	gpd	R-1, R-2	Monthly
Temperature	°F	R-1, R-2	Monthly ¹
pH	Units	R-1, R-2	Monthly ² ; Semi-annually ³
Turbidity	NTU	R-1, R-2	Monthly ² ; Semi-annually ³
Fecal Coliform	MPN/100mL	R-1, R-2	Monthly ² ; Semi-annually ³
Total Coliform	MPN/100mL	R-1, R-2	Monthly ² ; Semi-annually ³
Arsenic	µg/L	R-1	Quarterly ⁴
Manganese	µg/L	R-1	Quarterly ⁴

¹ Before 15 October 2004, R-1 and R-2 sampling required only when there is upstream flow in the ACID canal. After 15 October 2004, additional upstream and downstream sampling locations representative of irrigation and non-irrigation periods of operation may be selected by the Executive Officer based on information presented in report requested in Provision No. G.10.

² During April through October, when water is diverted into the ACID canal.

³ During storm water runoff (November through March), when there is upstream flow in the ACID canal.

³ Twice, from April through October, when water is diverted into the ACID canal for irrigation and twice during storm water runoff (November through March), when there is upstream flow in the ACID canal.

Turbidity (NTU) shall be determined by (1) individual samples or (2) by samples taken over an appropriate averaging period.

- (1) Individual Sampling – once per week during discharge.
- (2) Averaging Periods – a minimum of four samples per day from each upstream and downstream station for a period of 2 to 4 days during discharge. Samples collected for averaging must be spaced at least 3 hours apart.

SHASTA FACILITY MONITORING

SHASTA FACILITY POND MONITORING

The blowdown pond and fire/cooling water pond at the Shasta facility shall be inspected on a regular basis to check for liner failure and/or leakage. The following shall constitute the monitoring program for the blowdown pond and fire/cooling water pond. The results shall be submitted with the monthly monitoring report:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Freeboard Depth	Feet, inches	Visual	Weekly
Flow Pumped from Leachate Sump to Ponds	gpd	Cumulative	Daily

SHASTA FACILITY LANDSCAPE IRRIGATION WASTEWATER MONITORING
 (BLOWDOWN POND)

When wastewater from the blowdown pond at the Shasta facility is being supplied to the Shasta facility's landscape irrigation system, representative samples shall be collected of the water in accordance with the following. The results shall be submitted with the monthly monitoring report.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	gpd	Cumulative	Daily
Chloride	mg/L	Grab	Monthly
pH	units	Grab	Monthly
Sulfate	mg/L	Grab	Monthly
Specific Conductance	µmhos/cm	Grab	Monthly
Arsenic	µg/L	Grab	Quarterly
Manganese	µg/L	Grab	Quarterly
Molybdenum	µg/L	Grab	Quarterly
Vanadium	µg/L	Grab	Quarterly
<u>General Minerals¹</u>	mg/L	Grab	Annually

¹ General minerals include: bicarbonate, carbonate, calcium, chloride, magnesium, nitrate, potassium, silica, sodium and sulfate

SHASTA FACILITY UNDER DRAIN SYSTEM MONITORING
 (IW-SHASTA and DISCHARGE 002)

When flows are occurring, the point where groundwater from the facility under drain system discharges into the retention pond (IW-Shasta) and the ACID canal (Discharge 002) shall be monitored for the following. The results shall be submitted with the monthly monitoring report.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Estimated Flow	gpd	Cumulative	Daily
Specific Conductance	µmhos/cm	Grab	Monthly
pH	Units	Grab	Monthly
Total Coliform	MPN ¹ /100mL	Grab	Monthly
Fecal Coliform	MPN ¹ /100mL	Grab	Monthly
General Minerals	mg/L	Grab	Annually

¹ Most probable number, if sample results are >1600 use 25 tube fermentation technique.

LEACHFIELD MONITORING

The Discharger shall investigate the source of total and fecal bacteria contamination detected in IW-Shasta, 001, and the ACID canal downstream of the discharge. Quarterly interim progress reports shall be submitted by **1st day of the second month** following the calendar quarter. A final report summarizing the septic and under drain system investigation and proposing necessary corrective action shall be submitted **by 1 May 2003**.

The Discharger shall inspect the leachfield weekly and report the presence or absence of saturated soils or standing liquid. All piezometers shall be monitored to determine if leachfield effluent is infiltrating into the shallow groundwater and migrating to the under drain system. The results shall be submitted with the monthly monitoring report and include the following:

<u>Constituent</u>	<u>Unit</u>	<u>Station</u>	<u>Sampling Frequency</u>
Depth to Water	feet, inches	Piezometers	Monthly
Gradient	--	Piezometers	Monthly
Groundwater Flow Direction	--	Piezometers	Monthly

ASH MONITORING AT THE SHASTA FACILITY

The Discharger shall keep a log describing the quantities of fly ash and bottom ash generated, stored, and removed from the facility. The log shall identify the disposal location or soil amendment application area. For soil amendment areas, the volume of ash applied and acreage shall be included. The frequency of log entries is discretionary; however, the log should be complete enough to serve as a basis for an annual report. A representative composite sample of the fly ash shall be tested annually for total and dissolved constituents. Dissolved constituents shall be obtained using the Waste Extraction Test (WET) described in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, with deionized water for the extraction solvent. The distilled water extract shall be analyzed for the following. By 1 February of each year, the analytical results and the above information shall be summarized and submitted in a report.

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
pH	Units	Composite	Annually
General Minerals	mg/kg; mg/L	Composite	Annually
Priority Pollutant Metals ¹	mg/kg; µg/L	Composite	Annually
Aluminum	mg/kg; µg/L	Composite	Annually
Barium	mg/kg; µg/L	Composite	Annually
Boron	mg/kg; µg/L	Composite	Annually
Cobalt	mg/kg; µg/L	Composite	Annually
Iron	mg/kg; µg/L	Composite	Annually
Manganese	mg/kg; µg/L	Composite	Annually
Molybdenum	mg/kg; µg/L	Composite	Annually
Vanadium	mg/kg; µg/L	Composite	Annually
2,3,7,8-TCDD and congeners ²	pg/g; pg/L	Composite	Annually

¹ Antimony, arsenic, beryllium, cadmium, chromium III, chromium VI, copper, cyanide, lead, mercury, nickel, selenium, silver, thallium, zinc

² EPA Method 1613

LASSEN FACILITY MONITORING

LASSEN FACILITY INTERNAL WASTE SOURCES

Metal cleaning wastewater and low volume waste sources shall be individually sampled. Low volume waste sources include but are not limited to: ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower cleaning wastes, and recirculating water systems.

<u>Parameter</u>	<u>Unit</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
Total Suspended Solids	mg/L	Grab	Annually
Oil and Grease	mg/L	Grab	Annually

LASSEN FACILITY DISCHARGE
 TO SHASTA FACILITY RETENTION POND
 (IW-LASSEN)

Lassen facility discharge samples shall be collected at the point of discharge to the retention pond (IW-Lassen). The results shall be submitted with the monthly monitoring report and include the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Estimated Flow	gpd	Continuous	Daily
Temperature	°F	Grab	Weekly
Chlorine	mg/L	Grab	Weekly
Specific Conductance	µmhos/cm	Grab	Weekly
Total Dissolved Solids	mg/L	Grab	Weekly
pH	Units	Grab	Weekly
Iron	µg/L	Grab	Semi-Annually ¹
COD	mg/L	Grab	Semi-Annually ¹
Oil and Grease	mg/L	Grab	Semi-Annually ¹
Total Suspended Solids	mg/L	Grab	Semi-Annually ¹
Tannins & Lignins	mg/L	Grab	Semi-Annually ¹
Turbidity	NTU	Grab	Semi-Annually ¹
Polychlorinated Biphenols	mg/L	Grab	Annually ²
General Minerals	mg/L	Grab	Annually ²
Priority Pollutant Inorganics, SVOCs and VOCs	mg/L	Grab	Annually ²

¹ Samples shall be collected during the first hour of the first storm water discharge after the dry season and once thereafter during the wet season.

² Annually, once between April through October, when water is diverted into the ACID canal.

LASSEN FACILITY INDUSTRIAL STORM WATER

Annual inspections of the Lassen facility shall be conducted to identify areas contributing to off-site storm water discharge, and to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly implemented or whether additional control measures are needed. An annual report of the findings shall be submitted by **1 July** of each year with certification that the facility is in compliance with its SWPPP.

Visual inspections for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May to September) at all storm water discharge locations. A report of the findings shall be submitted with the annual report.

Samples shall be collected during two rain events during the wet season (1 October to 30 April). Storm water samples shall be collected downstream from the last connection through which storm water leaves the Lassen facility.

The following shall constitute the storm water monitoring program for each off-site discharge location:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹
pH	pH Units	Grab	Twice ²
Total Suspended Solids	mg/L	Composite	Twice ²
Specific Conductivity	umhos/cm	Grab	Twice ²
Oil and Grease	mg/L	Grab	Twice ²
Iron	mg/L	Grab	Twice ²

¹ If after two years of sampling, if pollutants are not measured above industrial storm benchmarks, sampling requirements may be reduced or discontinued with the written approval of the Executive Officer.

² Samples shall be collected during the first hour of the first storm water discharge after the dry season and once thereafter during the wet season.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **1st day of the second month** following sample collection. (i.e., the January report is due by 1 March). Quarterly reports shall be submitted by the **1st day of the second month** following the calendar quarter. (i.e., the first calendar quarterly report is due by 1 May). Annual reports shall be submitted by **1 February of each year**.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provisions No. D.6.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

31 January 2003
(Date)

MEW:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0013

NPDES NO. CA0081957

WASTE DISCHARGE REQUIREMENTS
FOR
WHEELABRATOR SHASTA ENERGY COMPANY INC.
AND WHEELABRATOR LASSEN INC.
SHASTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

BACKGROUND

1. Wheelabrator Shasta Energy Company Inc. and Wheelabrator Lassen Inc. submitted a Report of Waste Discharge (ROWD) dated 31 July 2002 and supplementary information dated 11 September 2002 requesting revocation of their existing National Pollutant Discharge Elimination System (NPDES) permit for a wood-burning power plant (Shasta facility) and issuance of a new NPDES permit for combined flows from both their Shasta facility and a second natural-gas fired plant (Lassen facility).
2. Under Order No. R5-2002-0004 (NPDES NO. CA0081957), process water from the Shasta facility has been discharged to the Anderson-Cottonwood Irrigation District (ACID) canal. The Lassen facility is located within a paper mill. The paper mill and property are owned by Shasta Acquisition, Inc. doing business as (dba) Plainwell Paper Shasta Paper Company (hereafter Shasta Paper Company). Since 1983, process water from the Lassen facility had been discharged to the mill's wastewater treatment plant in accordance with an order held by the paper mill.
3. In October 2001, Shasta Paper Company filed for bankruptcy. The paper mill is no longer in operation and the Discharger cannot route Lassen facility process water to the mill's wastewater treatment plant indefinitely. The Discharger has requested that process water from both the Shasta and Lassen facilities be combined under a single NPDES permit and discharged to the ACID canal.
4. Wheelabrator Shasta Energy Company Inc. and Wheelabrator Lassen Inc. (hereafter Discharger) are separate operating companies, owned by Wheelabrator Environmental Systems Inc., which is owned by RESCO Holding, Inc., which is owned by Wheelabrator Technologies Inc., a wholly owned subsidiary of Waste Management, Inc.
5. Wheelabrator Shasta Energy Company Inc. owns the Shasta facility property (Assessor's Parcel Numbers 090-360-033, 090-360-037). Major equipment is owned by DFO

Partnership and leased to Wheelabrator Shasta Energy Company Inc. by Security Pacific Leasing Corporation.

6. Wheelabrator Lassen Inc. has owned the Lassen facility equipment since 1996. The Lassen facility occupies approximately four acres, of which a total of 0.68 acres are leased from Shasta Acquisition. The leased land is located on portions of the following parcels: Assessor's Parcel Numbers 090-150-001, 090-150-008, and 090-150-009. The remaining land (not leased by Wheelabrator Lassen Inc.) is located on these three parcels, as well as Assessor's Parcel Numbers 090-150-011 and 090-170-005.
7. Both the Shasta and Lassen facilities are south of the City of Anderson in Sections 24 and 26, T30N, R4W, MDB&M, as shown on Attachment A, which is attached hereto and part of this Order by reference. Effluent from both facilities, as well as surface water drainage, are to the ACID Canal, a tributary of Schmeider Gulch, Hooker Creek, Patterson Creek and numerous downstream unnamed tributaries, which are all tributaries of Cottonwood Creek. Annually, from April through October, water is diverted from the Sacramento River to the ACID Canal and used for irrigating pastures, hay, prunes, and home gardens and orchards. If the canal contains surplus water, overflows can discharge to the downstream tributaries. Generally, from November through April, the diversion ceases and the canal water consists of precipitation, storm water, and groundwater inflow. During major storm events, water discharges from the canal to the downstream tributaries are possible. Otherwise, the canal is dry since the water that remains in the canal infiltrates through the earthen canal bottom.
8. Effluent from both the Lassen facility and the Shasta facility continuously discharges to a retention pond on the Shasta facility property prior to discharge into the ACID canal. The following two distinct discharge locations and two distinct internal waste stream outfalls are in the vicinity of the retention pond (see Attachment B, which is attached hereto and part of this Order by reference):
 - Discharge 001 – Retention pond outfall at latitude 40°25'49" and longitude 122°16'32" that drains into conveyance structure that leads directly to ACID canal. The retention pond receives internal waste flows from both the Shasta facility (IW-Shasta) and the Lassen facility (IW-Lassen).
 - Discharge 002 – Outfall from the Shasta facility "easterly under drain" system. This system intercepts groundwater from the northern and western portions of the Shasta facility and discharges directly to the ACID canal, bypassing the retention pond.
 - IW-Shasta – Shasta facility internal waste outfall to the retention pond. IW-Shasta includes the following Shasta facility waste streams: blowdown, plant maintenance water, storm water runoff, and groundwater from the "internal under drain" system. The "internal under drain" system conveys groundwater from

beneath the Turbine building, as well as from the southern and south-central portions of the facility.

- IW-Lassen –Lassen facility pipeline outfall into the retention pond. This pipeline carries blowdown water, cooling water, plant maintenance water, and limited storm water from the Lassen facility. The Discharger has installed a discharge header to dissipate thermal energy prior to discharge to the retention pond.
9. Lassen facility discharge is greater in volume and has better water quality than Shasta facility discharge. The additional Lassen facility discharge would increase the flow to the ACID canal from approximately 0.34 million gallons per day (mgd) to approximately 3.8 mgd. In a letter dated 11 October 2002, ACID approved the flow increase.
 10. The facilities are in the Enterprise Flat Hydrologic Area (No. 508.10), as depicted on interagency hydrologic maps prepared by the Department of Water Resources (DWR) in August 1986. The mean annual rainfall in the area is approximately 30 inches and, based on information obtained from DWR Bulletin 73-79 (November 1979), the pan evaporation rate is approximately 72 inches per year.

SHASTA FACILITY

11. The Shasta facility consists of chipped and un-chipped biomass storage areas, a mechanical debarker, hog, chipper, and conveyors, boilers, generators, cooling towers, switchyard, equipment fueling and maintenance, aboveground and underground petroleum storage, chemical and waste storage, paved and unpaved roadways, laboratory and office, as shown on Attachment C, which is attached hereto and part of this Order by reference. The Shasta facility's wastes include: cooling tower blowdown, boiler blowdown, reject water from a reverse osmosis system, fuel storage pile leachate and seepage, fly ash, bottom ash, waste petroleum products, sewage, groundwater from under drain systems, and storm water runoff as shown on the water flow diagram, Attachment D, which is attached hereto and part of this Order by reference.
12. Groundwater is pumped from the wells into a lined fire/cooling water pond that is used as makeup for the firewater system pumps, primary and secondary cooling towers, and soft blowdown tanks. The well water is also pumped into a process water tank that provides water for Shasta facility maintenance and potable uses, and supplies water to the high purity water system. The high purity water system consists of three reverse osmosis treatment units that treat groundwater for use in the boilers. Reject water from reverse osmosis treatment is disposed of in the primary and secondary cooling towers.
13. Blowdown from the boilers discharges to the turbine hall sump where it combines with pumped groundwater prior to entering the primary cooling tower. The blowdown pond receives wastewater from the primary and secondary cooling towers. The blowdown

pond and fire/cooling water pond do not meet the construction standards for Class II surface impoundments, as defined in Title 27 of the California Code of Regulations. The Discharger has submitted a list of chemicals used to treat the Shasta facility's water and maintain the boilers and cooling towers.

14. The Discharger has capabilities to discharge blowdown pond wastewater to either an on-site landscape irrigation system or the retention pond, which continuously discharges to the ACID canal (Discharge 001). From the Shasta facility, the retention pond receives an average of 244,800 gallons per day (gpd) of wastewater from the blowdown pond. The retention pond also receives an average of 43,200 gpd of wastewater from Shasta plant maintenance, Shasta facility storm water runoff (21,600 gpd), and groundwater from the Shasta facility under drain system (28,800 gpd). The Discharger's February to July 2002 monitoring reports characterize Discharge 001 (from the Shasta facility alone) as follows:

Shasta Facility Discharge		
<u>Constituent</u>	<u>Units</u>	<u>Range</u>
Flow	gpd	25,200 to 492,900 (avg: 210,000)
Chloride	mg/L	28.3 to 40.6
Fecal Coliform	MPN/100mL	<2 to >1,600
Total Coliform	MPN/100mL	<2 to >1,600
pH	units	4.68 to 8.03
Specific Conductance	µmhos/cm	483 to 834
Total Dissolved Solids	mg/L	323 to 591
Total Settleable Solids	ml/L	<0.1
Iron	µg/L	108 to 162
Manganese	µg/L	72.4 to 114
Vanadium	µg/L	14.1 to 25.2
Arsenic, Aluminum, Molybdenum, Oil and Grease, Chemical Oxygen Demand, Total Suspended Solids, Tannins and Lignins	}	Not Detected

15. Preliminary groundwater investigations during Shasta facility construction encountered perched groundwater at depths of one to six feet below ground surface. There are two under drain systems that dewater the site. The easterly under drain intercepts groundwater upgradient of the Shasta facility and discharges it to the ACID canal (Discharge 002). The internal under drain system removes groundwater from within the Shasta facility and discharges it to the retention pond (IW-Shasta). The Discharger's February to July 2002 monitoring reports characterize IW-Shasta and Discharge 002 as follows:

Internal Discharge Locations, Shasta Facility, February to July 2002

<u>Constituent</u>	<u>Units</u>	<u>IW-Shasta</u>	<u>Discharge 002</u>
Specific Conductance	µmhos/cm	477 to 856 (avg: 701)	177 to 974 (avg: 539)
Total Coliform	MPN/100mL	<2 to >1600	<2 to 1600
Fecal Coliform	MPN/100mL	<2 to >1600	<2 to 1600

16. The primary fuel source for the Shasta facility wood-burning power plant is biomass from off-site sources; natural gas is used as a supplementary fuel for startup and flame stabilization of the plant's boilers. The Shasta County Department of Resource Management Air Quality Management District (SCAQMD) permit specifies the type of fuel used at the Shasta facility. The SCAQMD permit (#86-PO-08g) authorizes: mill waste; biomass fuel procured from private and public lands; agricultural residues such as almond and walnut shells and orchard prunings; hog fuel from eucalyptus or poplar plantations; land clearings from PG&E and public road right-of-ways or land development projects; wood waste comprised of tree tops, limbs, woody yard waste, and stumps; scrap lumber, pallets and crates from the general public; fuel cubes manufactured using mixed waste paper with paper mill pulp sludge; chipped creosote-treated wood products recycled from industrial use; scrapped waxed and non-waxed corrugated cardboard and wood-reinforced cardboard box material; and natural gas. The SCAQMD permit does not authorize wood products with chemical treatment other than creosote or wood waste from the general public that contains painted or chemically treated wood including plywood, particle board, or hardboard.
17. According to the California Department of Toxic Substances Control (DTSC), burning wood waste that is identified as hazardous waste is prohibited under Health and Safety Code Section 25143.1.5. DTSC also states that it is the generator's responsibility to determine whether their wood waste is hazardous under Federal and State Laws. Suppliers of creosote treated railroad ties perform Title 22 testing and self-certify their material as non-hazardous prior to shipment to the Discharger. The Discharger does not perform Title 22 testing of the railroad ties to verify the self-certification. In 30 August 2001, DTSC sampled the Discharger's railroad ties, fly ash, and bottom ash and found them below hazardous levels.
18. Soft blowdown tank water (pumped groundwater or fuel pile leachate) is used for dust control and to quench fly ash, a waste product from wood fuel combustion. Previously, fuel pile leachate was periodically pumped to the blowdown pond. Fly ash is loaded directly into trucks and transported off-site for use as soil amendment. Bottom ash, comprised entirely of mineral matter (sand and gravel), is used on-site and off-site for road base and trench filling.
19. Various petroleum products are used to maintain the Shasta facility's equipment. The aboveground storage tanks have secondary containment. The Discharger has submitted a

Spill Prevention Control and Countermeasure Plan for the Shasta facility's aboveground petroleum storage.

20. Water for industrial and domestic use at the Shasta facility is pumped from two on-site wells. The wells are installed to depths of approximately 500 feet below ground surface (bgs). The Shasta County Department of Resource Management, Environmental Health Division (SCEHD), regulates the Discharger's drinking water. Currently, SCEHD has not confirmed constituents in the water supply exceeding drinking water standards.
21. The Discharger has sampled the Shasta facility's blowdown pond for specific constituents in accordance with their Monitoring and Reporting Program. Monitoring reports from February to July 2002 characterize the blowdown pond wastewater as follows:

Blowdown Pond Wastewater, Shasta Facility

<u>Constituent</u>	<u>Units</u>	<u>Range</u>
Chloride	mg/L	40.7 to 93
pH	Units	8.24 to 8.69
Specific Conductance	µmhos/cm	699 to 917
Sulfate	mg/L	13.2 to 16.1
Total Dissolved Solids	mg/L	581
Arsenic	µg/L	ND
Manganese	µg/L	11.8
Molybdenum	µg/L	ND
Vanadium	µg/L	21.2 to 30.3

22. Staff sampling of water from the blowdown pond, fire protection/cooling water pond, retention pond, and fuel pile sump at the Shasta facility found the constituents tabulated below:

Wastewater Stream Characteristics, Shasta Facility

<u>Constituent</u>	<u>Units</u>	<u>Blowdown Pond</u>	<u>Fire Pond</u>	<u>Retention Pond</u>	<u>Fuel Pile Sump Leachate</u>
Aluminum	µg/L	<50	<50	649	3300
Arsenic	µg/L	8	<5	6	9
Iron	µg/L	<50	<50	895	6370
Manganese	µg/L	14	5	90	1070
Molybdenum	µg/L	4	<1	9	3
Vanadium	µg/L	27	9	24	18
Fluoranthene	µg/L	--	--	--	1.7
Fluorene	µg/L	--	--	--	0.71
Phenanthrene	µg/L	--	--	--	2.4
Pyrene	µg/L	--	--	--	1.7

23. Approximately 1,000 gpd of domestic sewage from the Shasta facility is disposed to a septic tank leachfield system on the Shasta facility property. In 1994, due to high groundwater conditions and elevated concentrations of bacteria in the internal under drain system, the Discharger relocated the original leachfield to an area north of the office and installed three piezometers. Test pits in the new leachfield area describe the subsurface as five feet of gravelly silt and sand underlain by three feet of gravelly sandy silt, becoming moist with depth. Silty and sandy clay was encountered at 8.5 and 9 feet, the bottom of the test pits.
24. To protect water quality, the *Guidelines for Waste Disposal from Land Developments* specify that the depth to anticipated highest ground water below the leaching trench shall not be less than five feet. The depth to ground water reported in the three piezometers located on the Shasta facility property ranges from 0.00 to 3.0 feet. Although the shallow groundwater has not caused surfacing sewage, total and fecal coliform bacteria have historically been found in the Shasta facility internal under drain system, as discussed in Finding No. 15. The Discharger is conducting an investigation (Finding 26) to assess whether the present system violated Order No. 96-236 which prohibits domestic wastewater discharges to the under drain system.
25. As discussed in Finding No. 15, wastewater from the internal under drain system discharges to the retention pond, and the ACID canal at Discharge 001. Limited sampling of Discharge 001 and the ACID canal, upstream and downstream of the discharge, has detected total and fecal coliform bacteria in the discharge and downstream receiving water. The fecal coliform concentrations in the ACID canal, downstream of the discharge, exceed the water quality objective for contact recreation.
26. As required under Order No. R5-2002-0004, the Discharger began a subsurface investigation to determine the source of bacteria in the Shasta facility effluent. Additional shallow piezometers in the vicinity of the leachfield were installed and sampled to assess of the potential for leakage from the septic tank, under drain system, and force main. Retention pond, effluent, and receiving water bacteria samples were also taken. Quarterly water level measurements indicate local groundwater mounding is present in the leachfield area, but the predominant gradient is to the east-southeast direction. Preliminary results indicate that only low concentrations of fecal coliform are present in groundwater near the under drains, but not enough information was available to determine whether the septic tank is a potential source of fecal coliform in the NPDES discharge. Three rounds of quarterly data also suggest that the current sanitary system at the Shasta facility is not a significant source of fecal coliform via groundwater flow to Discharge 001 or 002. Preliminary data reports suggest that the retention pond may be naturally high in fecal coliform due to the waterfowl and other species present in the pond. The Discharger has adjusted the sampling of IW-Shasta to avoid sampling

backwash from the retention pond. In A final investigation report will be issued in May 2003 summarizing conclusions and outlining recommended corrective actions.

LASSEN FACILITY

27. The Lassen facility, a 48.5-MW base-loaded natural gas-fired electrical generation facility, operates 24 hours per day, 7 days per week. Distilled water is also produced at the Lassen facility to maintain the Discharger's status as a qualifying facility under the Public Utility Regulatory Policy Act.
28. All power generating equipment is stored in covered buildings. Power generation equipment includes a heat recovery steam generator that produces approximately 120,000 lb/hr of steam, an electrical generator (consisting of a combined gas turbine and power turbine), a gas generator evaporative cooler, and an electrical switchyard. A 14-inch pipeline was originally installed between the Shasta facility and Shasta Paper Company's mill to transport steam. It was modified in December 2002 to convey process water and storm water approximately 3,800 feet from the Lassen facility to the Shasta facility retention pond for discharge. The Lassen facility is presented in Attachment E, which is attached hereto and part of this Order by reference.
29. The Lassen facility's wastes include: boiler blowdown, continuous sample line discharge, reverse osmosis brine concentrate, demineralization system backwash, reverse osmosis prefilter backwash, cooling water, distillation system cooling water, storm water runoff, and domestic waste. There are no wood fuel storage areas and ash is not generated or stored at the Lassen facility.
30. Electricity is generated at the Lassen facility by supplying natural gas and steam to the gas turbine. Steam of varying pressures is generated by the heat recovery stream generator. High pressure steam is recycled back to the gas turbine to increase its operating efficiency. Intermediate and low pressure steam is used in steam seals and in the distillation system.
31. Over 2,200 gallons per minute (gpm) of water is supplied to the Lassen facility from two groundwater supply wells. Well 15 is installed to 560 ft bgs. Well 12 is installed to 540 ft bgs. The Discharger estimates that over 75 percent of the water discharged from the Lassen facility is single-pass, noncontact cooling water. Use of this water is presented in Attachment F, which is attached hereto and part of this Order by reference. An estimate of the total volume of water discharged from the Lassen facility at internal waste stream outfall IW-Lassen is provided in the table below.

Average Process Water Discharge Rates to IW-Lassen, Lassen Facility

Average Discharge Flow Rates¹

<u>Internal Waste Sources</u>	<u>(gpm)</u>	<u>(gpd)</u>	<u>Assumption</u>
Prefilter backwash	0.2	317	(2,350 gal/wk)
Reverse osmosis brine	recycled	recycled	
Demineralization backwash	0.7	994	(13,820 gal/2 wks)
Blower blowdown	12	17,280	
Lab sample line	5	7,200	
Existing cooling systems	recycled	recycled	
Distillation system wastewater	2,155	3,103,200	
<u>Total</u>	<u>2,173</u>	<u>3,129,120</u>	

¹Not including storm water discharges.

32. Domestic waste is currently discharged to the mill sanitary sewer. In 2003, the piping will be modified to direct domestic waste to an underground holding tank; solids will be periodically pumped and trucked by a licensed hauler to a publicly owned treatment plant. Additionally, washdown water from the floor drains of the turbine generator building will be discharged to a holding tank and pumped regularly by a licensed hauler. Floor drains in the distilled water system room will be routed to the ACID canal through Discharge 001.
33. In April and May 2002, the Discharger sampled their water supply (from their clear well) and discharge (combination of all internal waste streams discharged). Results are summarized in the table below:

Quality of Water Supply and Discharge, July 2002, Lassen Facility

Parameter	Water		Parameter	Water	
	Supply	Discharge		Supply	Discharge
pH	8.13	7.83	Nitrate as N (mg/L)	1.36	1.15
Specific Conductance (umhos/cm)	211	224	Sulfate (mg/L)	6.5	7.5
Turbidity (NTUs)	<0.5	2.3	Calcium (ug/L)	12600	16000
Total Coliform (MPN/100mL)	2	80	Magnesium (ug/L)	9390	9540
Fecal Coliform (MPN/100mL)	<2	4	Sodium (ug/L)	15900	17500
Total Settleable Solids (ml/L)	<0.1	0.1	Silicon (ug/L)	35700	35300
Total Dissolved Solids (mg/L)	135	156	Potassium (ug/L)	1240	1170
Bicarbonate (mg/L)	78	86	Aluminum (ug/L)	254	232
Chloride (mg/L)	11.5	11	Manganese (ug/L)	<5.0	23.5

Additionally, chemical oxygen demand, tannins and lignins, oil and grease, carbonate, arsenic, total iron, molybdenum, and vanadium were not detected in either the water supply or the discharge.

34. The Lassen facility occupies approximately four acres. More than 90 percent is paved or covered with buildings. The facility is surrounded by the Shasta Paper Company mill. Storm water that falls on or runs onto the Lassen facility currently discharges to the

mill's storm drain system, floor drain system, or process sewer. In 2003, modifications to the Lassen facility will divert run-on storm water around or through the facility via curbing or grading to existing or new catch basins/swales. Only storm water from the core industrial area (approximately 2.75 acres) within the Lassen facility property will be managed under this NPDES permit. The Discharger estimates that approximately 75 percent of storm water will be discharged in IW-Lassen to the ACID canal at Discharge 001. The remaining will be discharged offsite as sheet flow off access roads or other non-industrial areas onto adjacent mill property. During rare short-term high intensity storms, some sheet flow to existing mill catch basins adjacent to the core area may occur. The overflow to the mill system will occur only during storms that exceed the design capacity of the Lassen storm water lift station(s). The design storm for the Lassen lift station(s) will be a 10 to 25-year recurrence interval storm.

35. A limited volume of petroleum products are stored at the Lassen facility. All drums and tanks have secondary containment and roof covers. A Spill Prevention Control and Countermeasure Plan for the Lassen facility was certified by a registered engineer in March 2002.
36. The Discharger sampled the Lassen facility effluent water once in July 2002 to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticide compounds, metals, and dioxin. These priority pollutants were not detected in the effluent samples at concentrations that will cause or contribute to a violation of any applicable water quality criteria contained in the Basin Plan. For several parameters, water quality criteria have been established at concentrations less than laboratory detection limits. Based on current technology, it is reasonable to assume that these remaining constituents will not cause or contribute to violations of water quality criteria either.
37. The Discharger estimates that in the summer, discharge from the Lassen facility is approximately 4 percent of the ACID canal flow, resulting in a maximum receiving water temperature increase induced by the Lassen facility flow to be approximately 1.5°F (0.9 °C). The Discharger estimates that Shasta facility flow, which is approximately 10 percent of the Lassen facility flow, would not significantly affect this temperature estimate. In the ROWD, the Discharger estimates the temperature of the following Lassen facility waste streams as follows:

Temperature Estimates, Lassen Facility		
Waste Stream	Summer/Winter (°F)	Summer/Winter (°C)
Clear well (influent)	66/ 60	18.9/ 15.6
Discharge of existing cooling systems	85/ 79	29.4/ 26.1
Influent to new distillation system	73/ 67	22.8/ 19.4

Discharge of new distillation system	98/ 92	36.7/ 33.3
Lassen facility discharge	96/ 90	35.6/ 32.2
ACID canal (upstream)	57/ NA	13.7 /NA

The Discharger has installed a discharge header at the inlet to the Shasta facility retention pond (point of discharge) to dissipate thermal energy and reduce temperature impacts on ACID in the winter. Additionally, the first natural waterways that may receive discharge from the Lassen and Shasta facilities are approximately 2 miles downstream. During the winter, temperature impacts of the Lassen facility waters on these creeks are expected to be low due to heat loss during travel time, dilution from storm water, and infiltration along the canal bed.

REGULATORY CONSIDERATIONS

38. The Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve water quality objectives for all waters of the Basin. This includes plans and policies adopted by the SWRCB and incorporated by reference, such as Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. These requirements implement the Basin Plan.
39. The United States Environmental Protection Agency (USEPA) adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy), which contains guidance on implementation of the *National Toxics Rule* and the *California Toxics Rule*.
40. The beneficial uses of the ACID canal, Schmeider Gulch, Hooker Creek, Patterson Creek, and the numerous downstream unnamed tributaries are not individually identified in the Basin Plan; however, the Basin Plan at page II-2.00 states: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for the ACID canal, but the Basin Plan does identify present and potential uses for Cottonwood Creek, to which the ACID canal, via Schmeider Gulch, Hooker Creek, Patterson Creek, and numerous downstream unnamed tributaries, is tributary.
41. The Basin Plan identifies the following existing beneficial uses for Cottonwood Creek: municipal and domestic supply (MUN); agricultural supply (AGR); water contact and

non-contact recreation (REC1 and REC2); freshwater habitat (COLD and WARM); fish migration (COLD); fish spawning (COLD and WARM); wildlife habitat (WILD); esthetic enjoyment; and preservation and enhancement of fish, wildlife, and other aquatic resources. In addition, State Board Resolution No 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

The Basin Plan on page II-1.00 states: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning..." and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

In reviewing whether the existing and/or potential uses of Cottonwood Creek apply to the ACID Canal, the Regional Board has considered the following facts:

- a. Domestic Supply and Agricultural Supply. The Regional Board is required to apply the beneficial uses of municipal and domestic supply to the ACID canal based on State Board Resolution No. 88-63 which was incorporated in the Basin Plan pursuant to Regional Board Resolution 89-056. In addition, the State Water Resources Control Board (SWRCB) has issued water rights to existing water users along the ACID canal and the Cottonwood Creek downstream of the discharge for domestic and irrigation uses. Since the ACID canal is an intermittent stream, the ACID canal likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water. In addition to the existing water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased domestic and agricultural uses of the water in the ACID canal.
- b. Water Contact and Noncontact Recreation and Esthetic Enjoyment. The Regional Board finds that the discharge flows through residential areas, there is ready public access to the ACID canal, exclusion of the public is unrealistic and contact recreational activities currently exist along the ACID canal, and downstream waters and these uses are likely to increase as the population in the area grows. Prior to flowing into Cottonwood Creek, the ACID canal flows through areas of general public access, meadows, residential areas and parks. Cottonwood Creek also offers recreational opportunities.
- c. Groundwater Recharge. In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Since the ACID canal is at times dry, it is reasonable to assume that the stream water is lost

by evaporation, flow downstream and percolation to groundwater providing a source of municipal and irrigation water supply.

- d. Freshwater Replenishment. When water is present in the ACID canal, there is hydraulic continuity between the ACID canal and the Cottonwood Creek. During periods of hydraulic continuity, the ACID canal adds to the water quantity and may impact the quality of water flowing down stream in the Cottonwood Creek.
- e. Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources. The ACID canal flows to Cottonwood Creek via Schmeider Gulch, Hooker Creek, Patterson Creek and numerous downstream unnamed tributaries. The Basin Plan (Table II-1) designates the Cottonwood Creek as being both a cold and warm freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to the ACID canal. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l. This approach recognizes that, if the naturally occurring in-stream dissolved oxygen concentration is below 7.0 mg/l, the Discharger is not required to improve the naturally occurring level.

The beneficial uses of any specifically identified water body generally apply to its tributary streams. The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the reasonable potential for contact recreational activities, that the beneficial uses of the Cottonwood Creek apply to the ACID canal. The Regional Board also finds that based on the available information, the ACID canal absent the discharge, is at times an intermittent stream. The intermittent nature of the ACID canal means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge at times maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the ACID canal help support the cold-water aquatic life. Both conditions may exist within a short time span, where the ACID canal would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Cottonwood Creek. Dry conditions occur primarily in the winter months, but dry conditions may also occur throughout the year, particularly in the late fall and early spring. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during and immediately following high rainfall events. The ACID canal flows are unknown at this time; however, the Discharger will conduct flow monitoring on the ACID canal to determine the actual flow regime. To the extent assimilative capacity is available in the receiving water to accommodate constituents in the effluent which exceed

reasonable potential criteria, this permit contains a re-opener to set final effluent limitations based on concentrations or conditions determined to be in the receiving water. However, effluent limitations contained in this permit, do not account for the receiving waters having assimilative capacity. If necessary, the Discharger may submit receiving water characterization to demonstrate the flow regime and pollutant assimilative capacity and ask the Regional Board to re-open the permit to consider this new information.

42. Order No. 87-110 was adopted on 26 June 1987 for the ACID. This Order authorized the use of herbicides in the ACID canal. Other plants and aquatic life in the treatment area may be impacted. The Order prohibits the discharge of any chemical herbicide or other toxic materials into live streams, lakes, or ponds utilized as domestic water sources or which are fish-bearing waters. ACID applies Magnacide, an aquatic herbicide, along portions of the canal during early summer. Treated waters are conveyed along the canal and discharged to pastures and fields. ACID implements best management practices to ensure that treated waters are not released into natural waterways along the canal. Magnacide is registered under the Federal Insecticide, Fungicide and Rodenticide Act and bears an EPA approval label. The label states that the herbicide is toxic to fish and wildlife, should be kept out of lakes, streams, or ponds, and should not be applied to drainage areas where runoff or flooding will contaminate other bodies of water. The use of Magnacide is toxic to aquatic life for its intended use in the ACID canal.

Given the use of herbicides in the ACID canal, this Order will defer specific water quality protection standards for the protection of aquatic life in the ACID canal until the legal use of herbicides toxic to aquatic life is terminated. However, specific water quality protection standards for aquatic toxicity will apply to the discharge, under the terms of this Order, at the confluence of the ACID canal and Schmeider Gulch (or the first downstream tributary with the potential for receiving discharge from the ACID canal). At this time, the constituents of concern discharged to the ACID canal are limited to temperature as noted in Finding No. 37. Upon the termination of the Order 87-110 or the use of herbicides toxic to aquatic life in the ACID canal, this permit may be reopened to consider new findings of fact.

43. As noted previously, the ACID canal is typically fully charged during the irrigation season, which typically lasts from April through October. During the non-irrigation season, the ACID canal is dry, absent the discharge. During storm events, the ACID canal does accept and convey surface water runoff.

The Basin Plan states that: *“At no time shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature”*. The Basin Plan further states: *“In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial*

uses will be fully protected'. Previous Order No. R5-2002-0004 included a receiving water limitation for temperature, derived from the Basin Plan, which stated: "*The discharge shall not cause the following in the ACID Canal: ...10. Increase the normal ambient temperature of waters by more than 5°F(3°C).* "

The effluent from the Discharger's water distillation unit includes thermal waste. The Discharger estimates discharge from the Lassen facility may be 96°F in the summer and 90°F in the winter. Upstream receiving water temperatures are estimated to be 57°F in the summer. Since flow in the ACID canal is intermittent in the winter, no temperature estimate has been made. These estimates suggest that downstream receiving water temperature observations may exceed upstream observations by greater than 5°F. However, there is insufficient information to determine whether the normal ambient temperature of the downstream receiving water bodies, such as Schmeider Gulch, Hooker Creek, Patterson Creek or Cottonwood Creek, would be increased greater than 5°F above ambient temperatures.

In accordance with Finding No. 42 of this Order, this permit will defer specific water quality protection standards for the protection of aquatic life in the ACID canal until the legal use of herbicides toxic to aquatic life is terminated. Sufficient information is not available to determine if the Discharger is currently capable of meeting temperature receiving water limitation with the additional flows from the Lassen facility. This Order includes a time schedule for evaluating impacts and identifying methods of meeting the receiving water limitation for temperature at appropriate downstream receiving water tributaries of Cottonwood Creek. This Order may be reopened and a temperature receiving or effluent limit for the ACID canal or downstream tributaries may be added.

44. The beneficial uses of the underlying groundwater are municipal and domestic, industrial, and agricultural supply.
45. USEPA and the Board have classified this discharge as a minor discharge.
46. Federal regulations contained in 40 CFR 122.4(d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Board finds that the discharge from the Shasta facility does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective for: chloride, sulfate, electrical conductivity, settleable solids, chlorine, and pH. Effluent limitations for these constituents are included in this Order. The Board also finds that the discharge from the Lassen facility does have a reasonable potential to cause or contribute to an in-stream

excursion above a water quality objective for temperature. However, in accordance with Finding 43, this Order does not include an effluent limitation for temperature.

47. Based on preliminary sampling results, Order No. R5-2002-0004 required the semi-annual monitoring of Discharge 001 (Shasta facility), receiving water, and landscape irrigation water (Shasta facility) for aluminum, arsenic, iron, manganese, molybdenum, and vanadium. Results collected in April and July 2002 indicate that aluminum, iron, molybdenum, and vanadium do not have a reasonable potential to impact water quality. Average manganese and arsenic effluent results were 120 ug/L and less than 45 ug/L, respectively. Water quality criteria for manganese and arsenic are 50 ug/L (state secondary MCL) and 10 ug/L (federal primary MCL), respectively. This Order contains provisions that:
 - a. require the Discharger to continue providing information to determine whether the levels of these pollutants in the discharge cause or contribute to an in-stream excursion above a water quality standard;
 - b. if the discharge has a reasonable potential to cause or contributes to an in-stream excursion above a water quality objective, requires the Discharger to submit information to calculate effluent limitations for those constituents; and
 - c. allows the Board to reopen this Order and include effluent limitation for those constituents.
48. On 5 January 2001, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent from the Shasta facility and receiving water monitoring to meet the requirements of the State Implementation Policy (SIP). The Discharger sampled effluent from the Shasta facility and receiving water from the ACID Canal twice to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticide compounds, inorganics, asbestos, and dioxin. Asbestos, dioxin, priority pollutant organic substances, and priority pollutant inorganics (except arsenic) were not detected in the effluent and receiving water samples at concentrations that will cause or contribute to a violation of any applicable water quality criteria contained in the Basin Plan. These requirements include additional monitoring for arsenic to determine if water quality-based effluent limits are necessary.
49. As part of this permit application, the Discharger sampled effluent from the Lassen facility to determine if the priority pollutants established in the CTR and NTR were detected. Analytical results were submitted for volatile substances, semi-volatile substances, pesticide compounds, metals, and dioxin. Priority pollutant inorganics were not detected in the Lassen facility effluent at concentrations that will cause or contribute to a violation of any applicable water quality criteria contained in the Basin Plan.

50. NTR and CTR water quality criteria have been established for approximately 30 volatile substances, semi-volatile substances, and pesticides at concentrations less than current laboratory detection limits. Based on current technology, it is reasonable to assume that discharges from the Shasta and Lassen facilities will not cause or contribute to violations of water quality criteria for these constituents. However, by the time this Order expires, lower laboratory detection limits may be possible. Since Shasta and Lassen facility operations could change and priority pollutants currently non-detectable in the effluent could be found, these requirements include monitoring for metals, volatile substances, semi-volatile substances, and pesticides prior to permit renewal.
51. Federal Regulations for storm water discharges were promulgated by USEPA on 16 November 1990 (40 CFR Parts 122,123, and 124). The regulations require specific categories of facilities, which discharge storm water associated with industrial activity (storm water), to obtain NPDES permits and to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate industrial storm water pollution.
52. The State Water Resources Control Board (SWRCB) adopted Order No. 97-03-DWQ (General Permit No. CAS000001), on 17 April 1997, specifying waste discharge requirements for discharge of storm water associated with industrial activities, excluding construction activities, that requires submittal of a Notice of Intent, preparation of a Storm Water Pollution Prevention Plan, Site Map, and Monitoring Program by industries to be covered under the permit. The General Permit, Table D, requires steam electric generating facilities to sample for additional constituents. This individual permit and the provisions and monitoring it contains concerning storm water relieve the Discharger from seeking coverage under the General Permit.
53. Resolution 68-16 requires the Board in regulating the discharge of waste to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives).
54. The Board has considered Resolution 68-16 and finds that the current discharge from the Shasta facility may be inconsistent with this policy, and could cause an increase in groundwater constituents above water quality objectives, specifically: chloride, pH, specific conductance, and sulfate. Additionally, it has not been demonstrated that degradation of groundwater by the Shasta facility discharge is consistent with the maximum benefit to the people of the State. Therefore, groundwater limitations are necessary for the Shasta facility discharge to be in compliance with the Basin Plan and to assure that the discharge, as permitted herein, is consistent with Resolution 68-16. The Discharger is required to propose and fully implement Best Practicable Treatment or

Control (BPTC) measures so that the discharge does not create a condition of pollution or nuisance and that the highest water quality will be maintained.

55. Characterization of the wood fuel, blowdown pond, and domestic wastewater disposal system indicates that leachate from the unpaved storage area, lined pond, and leachfield at the Shasta facility have a reasonable potential to impact the underlying usable groundwater beneath the Shasta facility by migrating through the permeable subsurface materials. The potential impacts on usable groundwater and the appropriate level of degradation that complies with Resolution 68-16 have not been fully evaluated. The Discharger's current effort at the Shasta facility may not constitute BPTC as intended in Resolution 68-16. This Order establishes a schedule of tasks to characterize groundwater conditions, determine background levels, and if impacts are determined, evaluate BPTC for Shasta facility storage and disposal components. Completion of these tasks, and implementation of the approved strategies will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved.
56. This Order establishes background groundwater limitations for the Shasta facility and contains tasks for evaluating groundwater conditions and assuring that BPTCs are implemented. This Order also includes a provision to reopen the Order should it be determined that groundwater degradation is consistent with the maximum benefit to the people of the state. Accordingly, the discharge is consistent with Resolution 68-16. Based on the results of the scheduled tasks, the Board may reopen this Order to reconsider groundwater limitations and other requirements to comply with Resolution 68 16.
57. The Board further finds however that the discharge from the Lassen facility is consistent with Resolution 68-16, and will not likely cause an increase in groundwater constituents above water quality objectives. Therefore, groundwater limitations are not necessary for the Lassen facility discharge.
58. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses and do not contain waste constituents in concentrations statistically greater than background water quality.

59. The Basin Plan contains narrative water quality objectives for chemical constituents, taste and odor, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
60. The DWR has established standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards). These standards are described in two DWR publications: California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81 (December 1981).
61. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the California Water Code.
62. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
63. The Code of Federal Regulations (CFR) Part 423 specifies effluent limitations for the Steam Electric Power Generating Point Source Category. Fossil fuel is used secondarily at the Shasta facility and primarily at the Lassen facility. Therefore these limitations are applicable only to the Lassen facility discharge. In addition, since the Discharger does not spray water on logs at either the Shasta or Lassen facilities, effluent limitations established in the Code of Federal Regulations, Wet Storage Subcategory (40 CFR Part 429, Subpart I) are not applicable to discharge from these facilities.
64. The Board has considered the information in the attached Information Sheet in developing the findings in this Order. The attached Information Sheet is part of this Order.
65. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
66. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

67. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 10 days from the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order No. R5-2002-0004 is rescinded and Wheelabrator Shasta Energy Company Inc. and Wheelabrator Lassen Inc., their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastewater, including storm water, at locations or in a manner different from that described in Finding No. 8 and No. 34 is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision No. A.13. (See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)").
3. The discharge of leachate from wood fuel stockpiles to surface waters or surface water drainage courses is prohibited.
4. The discharge of ash, bark, sawdust, wood, debris, or any other wastes to surface waters or surface water drainage courses is prohibited.
5. The discharge of hazardous or toxic substances, including water treatment chemicals, solvents, or petroleum products (including oil, grease, gasoline and diesel) to surface waters or groundwater is prohibited.
6. The direct discharge of domestic wastewater to the under drain systems at the Shasta facility is prohibited.
7. The discharge of polychlorinated biphenyl compounds from the Lassen facility is prohibited.
8. Discharge of waste classified as "hazardous" as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., (hereafter Chapter 15), or "designated," as defined in Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations (Discharge 001)

- The discharge of wastewater to the ACID Canal at Discharge 001 in excess of the following is prohibited:

<u>Parameter</u>	<u>Unit</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Chloride	mg/L	106	250
Settleable Solids	ml/L	0.1	0.2
Specific Conductance	µmhos/cm	700	1000
Sulfate	mg/L	--	250
Chlorine	mg/L	0.01 (4-day avg)	0.02 (1-hr avg)

- Discharge 001 shall not have a pH less than 6.5 or greater than 9.0.
- Survival of aquatic organisms in 96-hour bioassays of undiluted waste from Discharge 001 shall be no less than:

Minimum for any one bioassay-----70%
 Median for any three or more consecutive bioassays---90%

- The discharge of process water (non-storm water and underdrain water) shall not exceed 4.5 mgd.

C. Discharge Specifications

- Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
- The discharge shall not cause degradation of any water supply.
- The discharge to any septic tank leachfield system shall remain underground at all times.
- Storm water discharges to any surface water or groundwater shall not adversely impact human health or the environment.
- Storm water discharges shall not cause or contribute to a violation of any applicable water quality objectives contained in the Basin Plan.

Shasta facility

- The discharge of wastewater from the Shasta facility blowdown pond to the landscape irrigation system at the Shasta facility shall not have a pH less than 6.5 or greater than 9.0 or exceed the following:

<u>Parameter</u>	<u>Unit</u>	<u>Daily Maximum</u>
Chloride	mg/L	106
Specific Conductance	µmhos/cm	1000
Sulfate	mg/L	250

7. The dissolved oxygen content of the fire/cooling water pond, blowdown pond, and retention pond at the Shasta facility shall not be less than 1.0 mg/L for 16 hours in any 24-hour period.

Lassen Facility

8. The discharge from the Lassen facility to IW-Lassen shall not have a pH less than 6.0 or greater than 9.0.
9. The discharge taken collectively from Lassen facility low volume waste sources and metal cleaning wastes shall not exceed the limits listed below. Low volume waste sources include but are not limited to: ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower cleaning wastes, and recirculating water systems.

<u>Parameter</u>	<u>Unit</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	mg/L	30	100
Oil and Grease	mg/L	15	20

D. Sludge, Wood Waste, and/or Ash Management

1. Collected screenings, sludge, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge or ash use or disposal practice shall be reported to the Executive Officer at least **30 days** in advance of the change.
3. Ash removed from the Shasta facility shall be:
 - a. If non-hazardous, tilled into agricultural fields for soil amendment; or
 - b. Disposed in a dedicated unit consistent with Title 27, Section 20200(b); or
 - c. Disposed in a Class III landfill consistent with Title 27, Section 20220(d).Any other use shall constitute disposal and shall be subject to Title 27, CCR requirements.

E. Receiving Water Limitations

Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. The discharge shall not cause the following in the ACID Canal or downstream tributaries:

1. Fecal coliform bacteria to exceed the geometric mean of 200/100mL or a maximum of 400/100mL during any 30-day period.
2. Concentrations of dissolved oxygen to fall below 7.0 mg/L.
3. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
4. Oils, greases, waxes, floating material (liquids, solids, foams, and scum), or suspended material to create a nuisance or adversely affect beneficial uses.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.

7. The turbidity of receiving waters to increase over background levels by more than:
 - a. 1 NTU when background turbidity is between 0 and 5 NTUs;
 - b. 20 percent when background turbidity is between 5 and 50 NTUs;
 - c. 10 NTUs when background turbidity is between 50 and 100 NTUs; and
 - d. 10 percent when background turbidity is greater than 100 NTUs.

In determining compliance with the above limits, appropriate averaging periods may be applied upon approval by the Executive Officer.

8. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units. In determining compliance with these limits, appropriate averaging periods may be applied upon approval by the Executive Officer.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. Increase the normal ambient temperature of waters by more than 5°F (3°C) (Until this Order is reopened, this limitation applies only to Schmeider Gulch or the nearest downstream tributary from Discharge 001 that receives flow from the ACID canal.)
11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
12. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to cause nuisance or adversely affect beneficial uses.
13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
14. Violations of any applicable water quality standard for receiving waters adopted by the Board or the SWRCB pursuant to the CWA and regulations adopted thereunder.

F. Groundwater Limitation

1. Discharges from the facility shall not cause underlying groundwater or groundwater downgradient of the facility to:

- a. Contain waste constituents in concentrations statistically greater than background water quality except that coliform organisms shall not exceed 2.2 MPN/100mL over any seven-day period;
- b. Exhibit a pH of less than 6.5 or greater than 8.5 pH units;
- c. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

G. Provisions

Shasta Facility

1. The Discharger is currently implementing a work plan to investigate the source of total and fecal coliform bacteria contamination in the Shasta facility Discharge and under drain systems. **By 1 May 2003, the Discharger shall prepare a final report summarizing the investigation and proposing necessary corrective actions.**
2. The Discharger shall complete Shasta facility improvements designed to protect water quality, perform water quality studies, and implement an enhanced monitoring program according to the following time schedule. All reports shall be submitted pursuant to Section 13267 of the California Water Code, and shall be prepared by a California Registered Professional Engineer, Geologist, or Engineering Geologist. Any surveying shall be performed by a California Registered Land Surveyor or Engineer qualified to perform surveying.
 - a. **By 1 May 2003**, the Discharger shall submit a Shasta Facility Background Groundwater Quality Workplan. The report shall identify what activities are necessary to establish background groundwater quality. The report also shall identify portions of the Shasta facility that may require additional BPTCs and what data are necessary to evaluate the need for and the selection of additional BPTCs. The report shall present the tasks and schedule required to obtain the necessary data. The implementation schedule shall be as short as practicable, and is subject to the Executive Officer's approval.
 - b. **By 1 September 2004**, the Discharger shall submit a *Shasta Facility Background Groundwater Quality Study Report*. The report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the Shasta facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data

- from a minimum of four consecutive quarterly groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.
- c. If the *Shasta Facility Background Groundwater Quality Study Report* indicates additional BPTCs are warranted, the Discharger shall submit a *Shasta Facility BPTC Evaluation Report and Implementation Workplan* by **1 May 2005**. The report shall identify portions of the Shasta facility requiring additional BPTCs and include a comprehensive evaluation of potential BPTCs for each such portion of the Shasta facility. The evaluation shall include an assessment of the ability to implement, effectiveness, and cost of each BPTC. Effectiveness shall be measured by reduction of impacts to groundwater including estimated concentration or mass loading reductions for each BPTC measure. Recommended BPTCs based on the BPTC evaluation, as well as an implementation schedule shall be proposed. The schedule for full implementation shall be as short as practicable, and in no case shall it exceed **six months** past the Executive Officer's approval of the work plan unless specifically approved by the Executive Officer. The component evaluation, recommended improvements, and implementation schedule are subject to the Executive Officer's approval.
- d. By **1 May 2007**, the Discharger shall submit a technical report that proposes specific numeric groundwater limitations for the Shasta facility that reflect full implementation of BPTC measures at the Shasta facility. Should numerical limits other than background be proposed, the Discharger shall: 1) describe how the numerical limits were determined considering actual data from compliance monitoring wells and impact reductions through full implementation of BPTC; and 2) submit results of a validated groundwater model to support its proposal. In addition, the technical report shall describe the overall status of compliance with implementation of BPTC measures and compliance with all groundwater background limitations.
3. By **1 May 2007**, the Discharger may elect to submit documentation demonstrating that degradation of groundwater quality above background conditions resulting from activities at the Shasta facility is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives). Submitting this information is optional and at the discretion of the Discharger.

4. Upon completion of tasks set forth in Provision Nos. G.2 and G.3, the Board shall consider the evidence provided and make a determination regarding whether the Discharger has implemented justified BPTCs at the Shasta facility and the appropriate final numeric groundwater limitations for the Shasta facility that comply with Resolution 68-16. This Order may be reopened to incorporate final numerical groundwater limits for the Shasta facility.
5. With the exception of creosote, the Discharger shall not use any form of treated wood as fuel in the power plant including but not limited to wood treated with copper, chromium, arsenic, pentachlorophenol, or tetrachlorophenol unless it meets the requirements of SCAQMD and DTSC. Any proposed change shall be reported to the Executive Officer at least **90 days** in advance of the change.
6. The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) for the Shasta facility containing best management practices to reduce pollutants in the storm water discharges. The Discharger shall amend the Shasta facility SWPPP whenever there is a change in construction, site operation, or maintenance that may affect the discharge of significant quantities of pollutants to surface water or groundwater. The SWPPP must also be amended if there are violations of this permit, or the Discharger has not achieved the general objectives of controlling pollutants in the storm water discharges.
7. The Discharger shall pump the septic tank at the Shasta facility at least every six months, and report volume pumped, disposal location, and condition of septic tank in monthly reports. Reduction in pumping and inspection frequencies shall only be made with approval from the Executive Officer.

Lassen Facility

8. The Discharger shall prepare a SWPPP for the Lassen facility containing best management practices to reduce pollutants in the storm water discharges. The SWPPP shall include industrial storm water sampling locations and sampling requirements. The Discharger shall amend the Lassen facility SWPPP whenever there is a change in construction, site operation, or maintenance that may affect the discharge of significant quantities of pollutants to surface water or groundwater. The SWPPP must also be amended if there are violations of this permit, or the Discharger has not achieved the general objectives of controlling pollutants in the storm water discharges.
9. **Within 30 days of adoption of this Order**, the Discharger shall prepare a workplan outlining activities to assess flow and temperature impacts of Lassen and Shasta discharge on the ACID canal and its downstream tributaries during the winter and summer canal operations.

10. By **1 July 2004** the Discharger shall prepare a *Receiving Water Impact Report* summarizing Lassen and Shasta discharge flow and temperature impacts on the ACID canal and its downstream tributaries during winter and summer canal operations. The following, as a function of varying ACID canal flow conditions, shall be addressed in the report: identification of receiving waters (i.e. ACID canal and downstream tributaries affected by Lassen and Shasta facility discharge), infiltration along ACID canal, heat losses along ACID canal, and temperature impacts on receiving waters. The report shall present maps showing downstream receiving waters and propose appropriate receiving water sampling locations during irrigation and non-irrigation time periods.
11. Upon completion of tasks set forth on Provision No. G.9, this Order may be reopened, and effluent limitations and/or receiving water limitations for temperature may be established.
12. If priority pollutant inorganics, VOCs, and/or SVOCs are measured in IW-Lassen above water quality criteria, the Discharger shall perform an investigation of the internal waste streams at Lassen facility to determine pollutant sources. Results of the investigation shall be provided in a report to be submitted within **90 days** of any elevated measurement. The report shall also include proposed recommendations for source reduction.
13. Installation of a septic tank and leachfield shall be performed in accordance with Shasta County Department of Environmental Health requirements. This Order may be reopened, and requirements regarding septic tank and leachfield operations may be included.

General

14. The Discharger shall comply with all the items of the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES),” dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as “Standard Provision(s).”
15. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2003-0013, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
16. The Discharger shall conduct chronic toxicity testing as specified in Monitoring and Reporting Program No. R5-2003-0013. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger

shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a toxicity reduction evaluation (TRE), and upon approval conduct the TRE. This Order will be reopened to include a chronic toxicity limitation and/or a limitation for the specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened and a limitation based on that objective included.

17. The Discharger shall conduct quarterly monitoring as specified in Monitoring and Reporting Program No. R5-2003-0013, to determine if the effluent contains arsenic, manganese other priority pollutant inorganics that may affect water quality. If after a review of the monitoring results it is determined that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above water quality objectives, this Order will be reopened and a limitation based on that objective included.
18. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
19. The Discharger shall comply with the standards contained in the Health and Safety Code, Chapter 6.67, Aboveground Storage of Petroleum.
20. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge or water treatment chemicals used. Notification on water treatment chemical changes shall include information from the manufacturer on toxicity and hazardous classifications.
21. The Discharger shall use the best practicable cost-effective control techniques(s) currently available to comply with discharge limits specified in this Order.
22. A copy of this Order shall be kept at both the Shasta and Lassen facilities for reference by operating personnel. Key operating personnel shall be familiar with its contents.
23. This Order expires on **1 January 2008** and the Discharger must file a Report of Waste Discharge (an application for renewal of waste discharge requirements) in accordance with Title 23, CCR no later than **180 days** in advance of such date if it wishes to continue the discharge.

24. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of Incorporation if a corporation, the name, address, and the telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision No. D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, Thomas R. Pinkos, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 31 January 2003.

THOMAS R. PINKOS, Executive Officer

MEW: