

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6T-2003-0027
NPDES NO. CA0103063, WDID NO. 6A1800045901

FOR

**UPDATED WASTE DISCHARGE REQUIREMENTS AND
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
FOR WINEAGLE GEOTHERMAL POWER PLANT**

Lassen County

FINDINGS of the California Regional Water Quality Control Board, Lahontan Region
(Regional Board):

1. Discharger

Carson Development Company, Inc. submitted a report of waste discharge and a National Pollutant Discharge Elimination System (NPDES) application for the Wineagle Geothermal Power Plant on January 30, 2003. Mapes Ranch Inc. own the property on which the Wineagle Geothermal Power Plant is located. The property is leased to Carson Development Company Inc. For the purpose of this Order, Carson Development Company, Inc. is referred to as the "Discharger," and the Wineagle Geothermal Power Plant as the "Facility."

2. Permit History

The requirements were updated most recently in Board Order No. 6-98-34, adopted on June 4, 1998. The first permit established for the Facility was Board Order No. 6-84-44, adopted on April 12, 1984. The permit was updated in 1993 with the issuance of Board Order No. 6-93-64. Each Board Order adopted since 1984 has been administratively continued insofar as no major changes have been necessary to previous earlier Board Orders.

3. Reason for Action

Board Order No. 6-98-34 has a June 4, 2003 expiration date. The Discharger submitted an NPDES permit application on January 30, 2003 for renewal of the NPDES permit. No modifications to existing operations were described in the permit renewal application. This Order is being updated to comply with current regulations and contains revised effluent limitations and a revised monitoring and reporting program.

4. Facility Location and Purpose

The Facility is located within Section 22, T30N R15E, MDB&M near the Wineagle Hot Springs in Honey Lake Valley. A location map, Attachment "A," is made a part of this Order. The Facility is owned and operated by Carson Development Company, Inc. and produces 700 kilowatts of electricity for sale to Pacific Gas and Electric.

5. Facility Discharge

The Facility pumps thermally heated groundwater from a depth of approximately 3,000 feet below the ground surface. Heat is extracted through a heat exchange process and the spent geothermal fluids discharge through Outfall 001 to a natural channel that historically drained the Wendel Hot Springs. The geothermal fluid discharged from the power plant is not treated. This discharge is regulated under this NPDES permit. The discharge to the receiving water channel flows to Honey Lake Wetlands and Honey Lake approximately one mile from the Facility. Geothermal fluid is pumped from geothermal well Wineagle 1 to a 700 kilowatt Rankine-cycle power plant. The geothermal fluid is discharged after transferring its heat energy to the power plant's working fluid. The discharge temperature is approximately 71°C (160°F). The project currently operates at an average production flow-rate of 735 gallons per minute (gpm). The maximum design production flow-rate is 800 gpm.

6. Waste Characteristics

Effluent from the Facility consists of natural geothermal groundwater that is used to transfer heat energy to the power plant's working fluid. No chemicals are added to the process wastewater. The Discharger collected samples from the Facility Outfall 001 for analysis as part of completing the NPDES renewal application. A summary of the results is presented below.

<u>Constituent</u>	<u>Concentration</u>	<u>Units</u>
Biochemical Oxygen Demand	17	mg/l*
Chemical Oxygen Demand	<5.0	mg/l
Total Organic Carbon	<1.0	mg/l
Total Suspended Solids	<1.0	mg/l
Ammonia as Nitrogen	<0.20	mg/l
pH	8.7	pH units
Temperature (winter maximum)	160	°F
Temperature (summer maximum)	160	°F

*milligrams per liter (mg/l)

7. Basin Plan

The Regional Board adopted the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) which became effective on March 31, 1995. This Order implements the Basin Plan.

8. Beneficial Uses-Surface Waters

The Basin Plan establishes beneficial uses and water quality objectives for the receiving waters for the discharge. The beneficial uses of the Wendel Hot Springs, a subunit of the Susan River Hydrologic Area (Dept. of Water Resources Hydrologic Unit No. 637.20), as set forth and defined in the Basin Plan, as amended, are:

- a) agricultural supply
- b) ground water recharge
- c) freshwater replenishment
- d) hydropower generation
- e) water contact recreation
- f) non-contact water recreation
- g) wildlife habitat
- h) water quality enhancement

9. Beneficial Uses-Ground Waters

The beneficial uses of ground water in the Honey Lake Valley Basin (Dept. of Water Resources Basin 6-4) are:

- a) municipal and domestic supply
- b) agricultural supply
- c) industrial services supply
- d) freshwater replenishment
- e) wildlife habitat

10. Thermal Plan

The State Water Resources Control Board (SWRCB) adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended the Thermal Plan in January 1988. The Thermal Plan does not apply to discharges from this Facility, as no warm freshwater habitat or cold freshwater habitat beneficial uses are designated for the receiving waters (Wendel Hot Springs).

11. Geology/Hydrology

The Facility is located on the northern margin of Honey Lake. The Honey Lake basin is a portion of the Basin and Range Geomorphic Province, and is situated between the granitic Sierra Nevada mountain range to the southwest and the basaltic (volcanic) Modoc Plateau to the north. Local faults in the vicinity of the Facility reportedly trend in a north-northwest direction. Honey Lake is a relatively shallow terminal remnant of Lake Lahontan, which formerly covered vast portions of the region. In the vicinity of the Facility, the granitic basement rocks are overlain by volcanic rock and sedimentary deposits. The groundwaters of Honey Lake Valley are recharged by precipitation, snowmelt, and seepage from streams and irrigation. Geothermal waters are related to the fault system, and are reportedly associated with a deep aquifer underlying a non-thermal aquifer.

12. Clean Water Act Standards

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 208(b), 301, 302, 303(d), 304, 306, and 307 of the Clean Water Act (CWA), and amendments thereto, are applicable to the discharge.

13. NPDES Permit Authority

Pursuant to Section 402 of the CWA and Section 13370 of the California Water Code (CWC), the U.S. Environmental Protection Agency (USEPA) approved the California State program to issue and enforce NPDES permits for pollutant discharges to surface waters of the State.

14. NPDES Effluent Limits

The CWA requires that industrial (non-municipal) discharges that contain nonconventional and/or toxic pollutants regulated under the NPDES permit program comply with effluent limits after application of the best available technology economically achievable (BAT). Both technology-based and water quality-based effluent limits must be considered and more stringent, water quality-based effluent limits must be developed if the technology-based effluent limits are not sufficient to meet water quality objectives. Water quality-based effluent limits for the Facility were developed in this permit to ensure protection of the beneficial uses of the receiving water.

15. NPDES Permit

This permit shall serve as an NPDES permit pursuant to Section 402 of the CWA, or amendments thereto, and shall take effect upon adoption by the Regional Board, provided the USEPA Regional Administrator has no objections.

16. Water Quality Objectives

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Lahontan Region. Water quality objectives include a Nondegradation Objective pursuant to federal regulations (40 Code of Federal Regulations § 131.12) and SWRCB Resolution No. 68-16.

17. California Toxics Rule

The USEPA promulgated the California Toxics Rule (CTR) on August 5, 1997 (62 Federal Register 42160-42208) and the CTR was codified at 40 Code of Federal Regulations section 131.38. The CTR established statewide water quality criteria for priority toxic pollutants for California.

The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000. The SIP establishes: (1) implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxics Rule (NTR) and through the California Toxics Rule (CTR), and for any priority pollutant objectives established in the Basin Plan; (2) monitoring requirements for 2,3,7,8-TCCD equivalents; and (3) chronic toxicity control provisions. All provisions of the SIP became effective as of May 22, 2000 and apply to discharges of toxic pollutants into the inland surface waters of California subject to regulation under the Porter-Cologne Water Quality Control Act (Division 7 of the CWC) and the CWA.

With the exception of arsenic, available ambient surface water data and/or effluent quality data are insufficient to determine whether any of the 126 CTR priority pollutants are, or may be, discharged from the Facility at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. The Discharger is currently obtaining this information pursuant to a request of the Executive Officer made pursuant to Section 13267 of the California Water Code.

The ambient receiving waters for the discharge are remnants of the former Wendel Hot Springs, and associated wetlands and channels. The historic discharge from the Wendel Hot Springs ceased some time after pumping from the geothermal aquifer commenced, providing evidence of a hydrological connection. For purposes of CTR compliance, the water now pumped from the geothermal aquifer may be of a quality very similar to that which formerly discharged to the ground surface naturally. Insofar as the chemical qualities of the water may be unchanged by passing through the Facility, except for the extraction of heat, the discharge may be deemed equivalent to the ambient receiving water.

In accordance with SIP Section 1.4.4, Intake Water Credits, the Regional Board “may consider priority pollutants in intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations . . .” provided

the discharger has demonstrated to the satisfaction of the Regional Board that five specified conditions are met. Among these conditions are that the intake water is from the same water body as the receiving water body, and the facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses.

Where the required conditions in the SIP are met, based on information provided by the Discharger, the Regional Board may establish effluent limitations that allow CTR priority pollutant discharges with no net increase compared to the intake water. This Order includes requirements to provide such data as may be available to determine the former ambient surface water quality, and/or to determine whether intake credits are appropriate. The analysis may also include a Use Attainability Analysis for the receiving waters and an examination of whether site-specific water quality objectives are appropriate based on background conditions. After the data is submitted, a reasonable potential analysis will be performed to (1) determine if water quality-based effluent limitations for priority pollutants are required; and (2) to calculate such effluent limitations, if required.

If the Discharger demonstrates that it is infeasible to achieve immediate compliance with a CTR criterion, or CTR-based effluent limitation, and requests that the Regional Board adopt a compliance schedule in an NPDES permit, the Regional Board may do so in compliance with SIP Section 2.1. Before a compliance schedule may be authorized in an NPDES permit, the Discharger shall submit justification and documentation to the Regional Board that: (a) diligent efforts have been made to quantify pollutant levels in the discharge and the waste stream; (b) source controls and/or pollutant minimization measures are underway or completed; (c) a schedule for additional measures to control or minimize pollutant discharges is proposed; and (d) the proposed schedule is as short as practicable.

Pursuant to Section 13267 of the CWC, the Discharger has been required to submit data sufficient to determine if any water quality-based effluent limitation is required in the discharge permit pursuant to the CTR. It is the Discharger's responsibility to provide information requested by the Regional Board for use in the analysis. The Permit shall be reopened to establish water quality-based effluent limitations if necessary.

18. Constituents of Concern and Monitoring Parameters

Primary constituents of concern are elements and compounds of arsenic, boron and molybdenum. Arsenic is a CTR priority pollutant, and a toxicity concern for wildlife habitat protection. Boron may impair water for agricultural uses such as farming, and molybdenum can impair waters for agricultural uses such as livestock watering, but neither of these are CTR priority pollutants. This Permit requires monitoring for these constituents. Based on water quality monitoring data recently provided by the Discharger, the prior effluent limits and receiving water objectives for boron are not

appropriate given the quality of the intake water and the applicable beneficial uses of the receiving waters. This Permit therefore contains revised effluent limits for boron.

In addition, the pH of the Wendel Hot Springs and underlying geothermal waters may naturally exceed pH 9.0. This can affect speciation of certain constituents in the discharge.

Arsenic: Board Order No. 6-98-34 contains an annual average effluent limit of 190 ug/l for arsenic (III), and available monitoring data for arsenic (III) show that the discharge, though somewhat variable, generally meets that limit. The effluent limitation specification for arsenic is herein revised to total recoverable trivalent inorganic arsenic. USEPA regulations specify permit limits for total recoverable arsenic. However, no standard method is currently available for "total recoverable" arsenic; therefore, the specification includes the adjectives "total recoverable trivalent inorganic" for which a standard test method is currently available. Due to the naturally-elevated pH levels, arsenic III and V oxidation states are expected to be the predominant chemical species based on the literature. The receiving waters are currently effluent-dominated; the discharge from the Facility may generally constitute the only flow in the receiving waters. Arsenic criteria for aquatic life protection based on USEPA's *National Recommended Water Quality Criteria* indicate chronic toxicity to aquatic life may occur due to arsenic levels in excess of 150 ug/l, and these levels are specified in the CTR for protection of aquatic life beneficial uses. However, no specific aquatic life beneficial uses other than wildlife habitat are prescribed for the receiving waters for the discharge (see finding No. 9 above), and therefore these levels are not appropriate for inclusion as effluent limits in this Permit. In addition, a complicating factor is the pH of the discharge and any resulting effects on chemical species and toxicity. A total recoverable trivalent inorganic arsenic limitation of 190 ug/l is specified as an interim limit for two years after adoption of the permit, and 150 ug/l after that date. As discussed in Finding No. 17 above, the permit may be reopened to revise effluent limitations if appropriate based on subsequent analysis of CTR data and SIP requirements.

Molybdenum: The Discharger was not required to collect monitoring data for molybdenum during the period of the most recent Permit. Board Order No. 6-98-34 contains an effluent limit of 70 ug/l for molybdenum, which is carried forward in this Permit. Additional molybdenum monitoring is needed. Preliminary analyses of available data indicate that the Discharger may have difficulty meeting the limitation without control measures.

Boron: The Discharger was not required to collect monitoring data for boron during the most recent Permit period. Board Order No. 6-98-34 contains an effluent limit of 3.8 mg/l for boron. The limit for boron in this Permit has been raised to 5.5 mg/l as allowed under CWA Section 303(d)(4)(B). The effluent limitation for boron has been revised because recently obtained historical data indicates that the naturally-occurring boron levels in the receiving water were approximately 5.5 mg/l and because the Discharger does not add

boron to the discharge. The Statement of Basis for this Permit presents a further description of the rationale for revising the effluent limitation for boron. The original effluent limitation was based on the narrative statement guidance in USEPA's *Water Quality Criteria, 1986, 440/5-86-001* (Gold Book.)

19. CEQA Compliance

The action to revise an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Section 13389 of the CWC.

20. Notification of Interested Parties

The Regional Board has notified the Discharger and interested agencies and persons of its intent to issue an NPDES permit for the discharge, and has provided them an opportunity for a public hearing and to submit written comments and recommendations regarding this matter.

21. Consideration of Public Comments

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the Discharger, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder and the provisions of the Clean Water Act of 1972, and regulations and guidelines adopted thereunder or amendments, shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Flow Limitations

The maximum rate of wastewater discharge from the Facility shall not exceed the design flow rate of 1.152 million gallons per day (MGD), equivalent to 800 gpm.

B. Effluent Limitations

1. Until **June 11, 2005**, the effluent discharge of wastes generated within, or as a result of, the Facility to surface waters shall not contain levels or total mass loading of total recoverable trivalent inorganic arsenic in excess of the following interim limitations:

Annual

<u>Constituent</u>	<u>Average concentration</u>	<u>mass loading</u>
Arsenic	190 µg/l	303 kg/yr

2. After **June 11, 2005**, the effluent discharge of wastes generated within, or as a result of, the Facility to surface waters shall not contain levels or total mass loading of total recoverable trivalent inorganic arsenic in excess of the following limitations:

<u>Constituent</u>	<u>Average concentration</u>	<u>Annual mass loading</u>
Arsenic	150 µg/l	239 kg/yr

3. The effluent discharge of wastes generated within, or as a result of, the Facility to surface waters shall not contain constituent levels or total mass loadings of boron or molybdenum in excess of the following limitations:

<u>Constituent</u>	<u>Average concentration</u>	<u>Annual mass loading</u>
Boron	5.5 mg/l	8,755 kg/yr
Molybdenum	70 µg/l	112 kg/yr

4. The effluent discharge of wastes generated within, or as a result of, the Facility to surface waters shall not contain trace elements, pollutants, contaminants, or combinations thereof, in concentrations that are toxic or harmful to aquatic, terrestrial plant, or animal life.

C. Receiving Water Limitations

1. The discharge of wastes generated within, or as a result of, the Facility to surface waters shall not cause a violation of the following water quality objectives:

a) Ammonia

The neutral, unionized ammonia species (NH₃) is highly toxic to freshwater fish. The fraction of toxic NH₃ to total ammonia

species ($\text{NH}_4^+ + \text{NH}_3$) is a function of temperature and pH. Basin Plan Tables 3-1 to 3-4 were derived from USEPA ammonia criteria for freshwater. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in these tables. For temperature and pH values not explicitly in the tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas developed by the USEPA.

b) Bacteria, Coliform

Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.

The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20/100 ml, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40/100 ml. The log mean shall ideally be based on a minimum of not less than five samples collected as evenly spaced as practical during the 30-day period. However, a log mean concentration exceeding 20/100 ml for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.

c) Biostimulatory Substances

Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.

d) California Toxics Rule (CTR) Constituents

After **June 11, 2005**, waters shall not contain priority pollutants in concentrations greater than the receiving water objectives for aquatic life protection in Attachment "B". This objective shall be deemed to have been met if no priority pollutants are detected above the method detection limit (MDL) in analyses conducted with criterion quantitation limits (CQL's or minimum reporting levels) equal to or lower than the minimum levels (ML's) in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*.

e) Chemical Constituents

Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

f) Color

Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.

g) Floating Materials

Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses.

For natural high quality waters, the concentrations of floating materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.

h) Oil and Grease

Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses.

For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.

i) Nondegradation of Aquatic Communities and Populations

All wetlands shall be free from substance attributable to waste water or other discharges that produce adverse physiological responses in humans, animals, or plants; or which lead to the presence of undesirable or nuisance aquatic life. All wetlands shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical and hydrologic processes.

j) Pesticides

For the purposes of this permit, pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, piscicides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insect, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agricultural Code Sec. 12753).

Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life.

k) Radioactivity

Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

l) Sediment

The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the waters for beneficial uses.

m) Settleable Materials

Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.

n) Suspended Materials

Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affects the water for beneficial uses.

For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.

o) Taste and Odor

Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, that taste and odor shall not be altered.

p) Temperature

The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect the water for beneficial uses.

q) Toxicity

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental

physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Regional Board. The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as described in *Standard Methods for the Examination of Water and Wastewater, 20th Edition (American Public Health Association, et al. 1998)*.

r) Turbidity

Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.

2. The discharge of surface flows generated within or as a result of, the Facility to ground waters shall not cause a violation of the following water quality objectives for ground waters of the Honey Lake Valley Basin.

a) Bacteria, Coliform

In ground waters designated as MUN, the median concentration of coliform organisms over any seven-day period shall be less than 1.1/100 milliliters.

b) Chemical Constituents

Ground waters designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of Title 22 of the California Code of Regulations: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges).

Ground waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

c) Radioactivity

Ground waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations.

d) Taste and Odor

Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For ground waters designated as MUN, at a minimum, concentrations shall not exceed adopted secondary maximum contaminant levels specified in Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels - Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels - Ranges) of Title 22 of the California Code of Regulations.

D. General Requirements and Prohibitions

1. The discharge of waste that causes violation of any narrative water quality objective contained in the Basin Plan, including the Nondegradation objective, is prohibited.
2. The discharge of waste that causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.
3. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.
4. The discharge of treated or untreated water except to the designated discharge point is prohibited.
5. The discharge of waste earthen materials or of any other waste as defined in Section 13050(d) of the CWC which would violate the water quality objectives of this Basin Plan or otherwise adversely affect the water for beneficial uses of this Basin Plan is prohibited.

II. PROVISIONS

A. Explanatory Provisions

1. Surface waters as used in this Order, include, but are not limited to, wetlands and live streams, either perennial or ephemeral, which flow in natural or artificial watercourses and natural lakes and artificial impoundments of waters within the State of California.
2. Ground waters as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure, and the capillary fringe of these waters.
3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the Discharger from liabilities under federal, state, or local laws, nor guarantee the Discharger a capacity right in the receiving waters.
4. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order. The discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this Order shall constitute a violation of the terms and conditions of this Order.
5. Failure to comply with this permit may constitute a violation of the CWC and/or CWA, and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.
6. The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
7. The CWC and the CWA provide for civil liability and criminal penalties for violations of the permit limits including imposition of civil liability or referral to the Attorney General.
8. A copy of the NPDES permit shall be kept and maintained by the Discharger and be available at all times to operating personnel.
9. Provisions of the permit are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.
10. Pursuant to CWC Section 13263(g), no discharge of waste into the waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights.

B. Monitoring and Reporting

1. Pursuant to Section 13267(b) of the CWC, the Discharger shall comply with Monitoring and Reporting Program No. 2003-(**PROPOSED**), hereby made a part of this Order.
2. In the event the Discharger is unable to comply with any of the conditions of this Order due to:
 - a) breakdown or serious malfunction of water treatment equipment;
 - b) accidents caused by human error or negligence;
 - c) overflows from the system; and
 - d) other causes such as acts of nature.

The Discharger shall notify the Regional Board Executive Officer as soon as the Discharger or the Discharger's agents have knowledge of any discharge in violation of this permit, or any emergency discharge or other discharge of water to Honey Lake or the surrounding wetland, in accordance with the notification requirements in the *Standard Provisions for NPDES Permits*, included in this Order as Attachment "C".

3. Pursuant to Part 40 Section 122.42(b) of the Code of Federal Regulations and Section 13267 (b) of the CWC, the Discharger shall notify the Regional Board of any substantial change in the volume or character of pollutants introduced into the Facility from the conditions existing at the time of adoption of this NPDES permit.

Adequate notice shall include information on the quality and quantity of effluent discharged into the receiving waters for the Facility, as well as any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the Facility. A substantial change in volume is considered an increase in excess of ten percent of the mean daily flow rate. The Discharger shall forward a copy of such notice directly to the USEPA Regional Administrator.

4. The Discharger shall file a report of waste discharge with the Regional Board at least **180 days** before making any material change or proposed change in the character, location, or volume of the discharge.

5. Pursuant to CWC Section 13260(c), any change in the ownership and/or operation of property subject to the NPDES permit shall be reported to the Regional Board. Notification of applicable requirements shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
6. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.
7. If the Discharger becomes aware that their NPDES permit is no longer needed (because the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their permit be rescinded.

C. Administrative Provisions

1. Board Order No. 6-98-34 is hereby rescinded.
2. The Discharger shall comply with *Standard Provisions for NPDES Permits*, as shown on Attachment "C," which is made a part of this Order.
3. The Regional Board hereby reserves the privilege of changing any portion of this Order. After notice and opportunity for a public hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - a) violation of any term or condition contained in this Order;
 - b) any change in any condition that required either a temporary or permanent reduction or elimination of the authorized discharge; or
 - c) consideration of reasonable potential analyses of CTR data obtained for the Facility, after the Discharger has had opportunity to apply for intake water credits pursuant to the SIP and consideration has been made of such application if appropriate.
4. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Regional Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition and so notify the Discharger.

5. This Order expires five years from the date of its adoption, on June 11, 2008, and the Discharger must file a report of waste discharge and application for an NPDES permit in accordance with Title 23 of the California Code of Regulations, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 11, 2003.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Location Map
B. Water Quality Objectives for CTR Constituents
C. Standard Provisions for NPDES Permits

TJP/cgT: Wineagle NPDES Permit Proposed

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

WDID NO. 6A1800045901
NPDES NO. CA0103063

MONITORING AND REPORTING PROGRAM NO. 2003-0027

FOR

WINEAGLE GEOTHERMAL POWER PLANT

Lassen County

I. MONITORING

The following monitoring program shall be implemented.

A. General Information

This Monitoring and Reporting Program (MRP) includes requirements for monitoring and reporting discharge flow data, and effluent quality data as required under NPDES No. CA0103063. The Discharger shall comply with *General Provisions for Monitoring and Reporting*, dated September 1, 1994, which is included as Attachment "1" and made part of this Monitoring and Reporting Program. The Discharger is currently obtaining CTR monitoring data for the discharge and the receiving water. If Regional Board staff determine that effluent limitations are appropriate for certain constituents, the Permit will be reopened in accordance with Provision II.C.3.c of Board Order No. R6T-2003-0027 to consider revised effluent limitations.

B. Discharge Flow Monitoring

The following shall be recorded:

1. The average daily flow rate, in gallons per day (gpd), of the geothermal fluids discharged from Outfall Number 001 for each day.
2. The total volume, in gpd, of the geothermal fluid discharged from Outfall 001 for each month.

C. Facility Effluent Monitoring

1. Representative grab samples of the effluent discharged from the Facility shall be collected at Outfall Number 001. The effluent shall be analyzed for the following constituents:

<u>Parameter</u>	<u>Unit</u>	<u>Criterion Quantitation Limit (CQL)</u>	<u>Frequency</u>
pH	pH unit	0.1	May and November
Hardness	mg/l as CaCO ₃	0.1	May and November
Arsenic ¹⁾	µg/l	10	May and November
Beryllium	µg/l	1	May and November
Boron	µg/l	0.1	May and November
Cadmium	µg/l	0.25	May and November
Chromium III	µg/l	0	May and November
Chromium VI	µg/l	5	May and November
Copper	µg/l	0.5	May and November
Lead	µg/l	0.5	May and November
Mercury	µg/l	0.0005	May and November
Molybdenum	µg/l	5	May and November
Nickel	µg/l	5	May and November
Selenium	µg/l	5	May and November
Silver	µg/l	1	May and November
Zinc	µg/l	10	May and November

¹⁾ total recoverable trivalent inorganic arsenic

2. The temperature of the discharge, in degrees Fahrenheit or Celsius, shall be measured and recorded during the time of sample collection.
3. Data should be analyzed and reported according to protocols established for CTR monitoring, as specified in *Reporting Requirements for CTR Monitoring*, which is included as Attachment “2” and made a part of this Monitoring and Reporting Program. For each constituent analyzed, a method detection limit (MDL) and a reporting limit (RL) for the laboratory shall be determined. To the extent possible, the reporting limit for the laboratory should be equal to or lower than the criterion quantitation limit (CQL) listed above.

D. Data to Support Request for Intake Water Credit

The Discharger is currently collecting data to satisfy CTR monitoring requirements. For purposes of compliance with the CTR, the intake water pumped from the aquifer may, or may not be, considered representative of the receiving water (or the ambient surface water conditions in the Wendel Hot Springs and related wetlands prior to the Facility operations). The

Discharger may therefore request that the Regional Board consider granting intake credits in accordance with the SIP, Section 1.4.4. In determining whether to grant intake credits, the Regional Board will consider all relevant water quality information available. If the Discharger has or knows of such information that it wishes to be considered, including historical information on water quality characteristics of the Wendel Hot Springs, that information shall be provided by the Discharger to the Regional Board. While this information is not specifically required, the burden of proof shall be on the Discharger to demonstrate that any intake credits requested are based on historic water quality.

E. Analysis of Samples

All analyses shall be performed in accordance with the current edition of *Standard Methods for the Examination of Water and Wastewater*. Laboratories shall be certified by the California State Department of Health Services to perform such analyses, or by a laboratory approved by the Executive Officer.

F. Operation and Maintenance

A summary of any operational problems and maintenance activities shall be submitted to the Regional Board with each monitoring report.

This summary shall discuss:

1. Any modifications to plant operations.
2. Any maintenance conducted on the plant operations.
3. Any problems occurring with plant operations.
4. The calibration of any flow measuring devices.

II. REPORTING

A. Report Format

1. The Discharger shall arrange the monitoring data in a concise form to clearly show compliance or non-compliance with each discharge specification to facilitate review by Regional Board staff. All violations of requirements shall be clearly described. The Discharger shall note and explain any occurrence of noncompliance with any waste discharge requirement, effluent limitation, or receiving water limitation. If there are no violations to report, the Discharger shall certify that fact in writing. This report shall include a summary of operational problems and

maintenance activities as described in Section I.F., above.

2. For every item where the requirements are not met, the discharger shall submit a statement of the actions taken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for completion. **Any omission of data should be accompanied by an explanation and plan to obtain the omitted data.**
3. All reports shall be signed by a responsible officer or duly authorized representative of the Discharger, shall include the name and contact information for a person knowledgeable about the contents of the report, and shall be submitted under penalty of perjury.

B. Submittal Periods

1. Monitoring reports shall be submitted not later than June 30 and December 30 for the May and November sample analyses, respectively, and shall include total and average daily discharge rates for the specified monitoring periods.
2. If the Discharger requests the Regional Board consider granting intake water credits in accordance with Section 1.4.4. of the SIP, the data specified in Section I.D, above, shall be submitted by **July 30, 2003.**

Ordered by: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: _____

Attachments: 1. General Provisions for Monitoring and Reporting
2. Reporting Requirements for CTR Monitoring