

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

ORDER NO. 88-2  
NPDES NO. CA 0105058

WASTE DISCHARGE REQUIREMENTS  
FOR  
RED HILL GEOTHERMAL, INC.  
DEL RANCH POWER PLANT  
COOLING TOWER BLOWDOWN  
West of Calipatria - Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. Red Hill Geothermal, Inc. (hereinafter referred to as the discharger), 11770 Bernardo Plaza Court, Suite 366, San Diego, CA 92128, submitted a Report of Waste Discharge, dated June 8, 1987, and additional information for completion of the application, dated September 26, 1988. Red Hill Geothermal, Inc., is a subsidiary of Magma Power Company.
2. The discharger proposes to discharge a maximum daily flow of 400,000 gallons-per-operating day of cooling tower blowdown water from the Del Ranch Power Plant into Vail 4A Drain in the SW 1/4 of the SE 1/4, Section 33, T11S, R13E, SBB&M. The wastewater flows about 1 mile in Vail 4A Drain to Salton Sea. The outfall of the Vail 4A Drain at Salton Sea is within the Salton Sea National Wildlife Refuge.
3. The cooling tower at the Del Ranch Plant has operated previously by injecting the blowdown subsurface. The discharger proposes to discharge blowdown from the cooling tower through a single discharge line into the Vail 4A Drain. During periods when discharge to the drain is interrupted, the blowdown will instead be injected subsurface.
4. The discharger utilizes water condensed from geothermal steam from the power plant as cooling tower make-up water. Additional cooling tower water may be needed, and will be obtained from the Imperial Irrigation District. Water used in the cooling tower is periodically treated with the following chemicals:

<u>Chemical</u>	<u>Purpose of Treatment</u>
Sodium Hypochlorite	Biocide
Nalco Sure-Cool 1337	Microbiocide
Nalco Sure-Cool 1378	Biocide
Nalco Acti-Brom 1338	Biodispersant
Nalco Sure-Cool 1366	Biodispersant
Nalco Phosperse-Plus 8307	Corrosion Inhibitor
Nalco Dynacool III 8301D	Corrosion Inhibitor Dispersant

*Approved by 94-072*

5. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted by the Regional Board on November 14, 1984.
6. Beneficial uses to be protected by this Order are as follows:
  - a. Ground Water
    1. Shallow ground waters at the discharge location are saline and are not beneficially used.
    2. Deep ground waters are brine and are being investigated for geothermal development.
  - b. Imperial Valley Irrigation Drains
    1. Freshwater replenishment for Salton Sea.
    2. Freshwater habitat for fish and wildlife.
    3. Recreation - non water contact.
7. The Salton Sea Anomaly Master Environmental Impact Report SCH #80102409 was prepared in 1981 for Imperial County and addresses the geothermal developments in the Salton Sea area. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.
8. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge.
9. The Board in a public meeting heard and considered all comments pertaining to the existing discharge.

IT IS HEREBY ORDERED, Red Hill Geothermal, Inc., in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. Wastewater discharged to Vail 4A Drain shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Average Concentration</u>	<u>Maximum Daily Concentration</u>
a. Total Dissolved Solids	mg/l	4,000	4,500
b. Settleable Matter	ml/l	0.3	1.0

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Average Concentration</u>	<u>Maximum Daily Concentration</u>
c. Zinc (Zn)	mg/l	-	1.0
d. Hexavalent Chromium	mg/l	-	0.05
e. Chlorine (Free Available)	mg/l	0.1	0.2

2. There shall be no detectable amount of any of EPA's designated 126 priority pollutants (40 CFR Part 423.15 (j) (i)) contained in chemicals added to the cooling tower water.
3. Wastewater discharged to the Vail 4A Drain shall not exceed a daily maximum flow of 400,000 gallons.

B. Receiving Water Limitations

1. Wastewater discharged to Vail 4A Drain shall not:
  - a. Cause the temperature of the waters in said Drain to be increased by more than 5° F.
  - b. Contain any substances in concentrations toxic to human, animal, plant or aquatic life.
  - c. Depress the dissolved oxygen content of water in Vail 4A Drain below 5.0 mg/l.
  - d. Cause the value for pH of Vail 4A Drain water to be outside the limits of 6.0 to 9.0.
2. The discharge shall not cause a violation of the applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder.

C. Provisions

1. Neither the treatment nor the discharge of wastewater shall create pollution or nuisance as defined in Division 7 of the California Water Code.
2. The discharger shall comply with "Monitoring and Reporting Program No. 88-2", and future revisions thereto, as specified by the Executive Officer.
3. Any proposed change in water treatment chemicals (as noted in Finding No. 4, above) shall be reported to the Regional Board and

the discharger shall obtain approval from the Executive Officer prior to commencement of this change.

4. This Order expires November 30, 1993, and the discharger shall file a complete Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of this date as an application for issuance of new waste discharge requirements.
5. Adequate protective works shall be provided to assure that a flood which would be expected to occur on a frequency of once in a 100-year period, would not erode or otherwise render portions of the treatment and discharge facilities inoperable.
6. Bioassays shall be performed to evaluate the toxicity of the discharged wastewater according to the following procedures:
  - a. The discharger shall conduct bioassays of the fish Pimephales promelas (fathead minnow) according to the protocol given in Guidelines for Performing Static Acute Toxicity Fish Bioassays in Municipal and Industrial Wastewater - California Fish and Game, 1988 Update.
  - b. The bioassay tests specified above in 6.a shall be performed prior to the first discharge to the Vail 4A Drain and thereafter the tests shall be conducted quarterly.
7. Discharge to Vail 4A Drain shall be allowed only after the results of the bioassay, described in Provision No. 6 above, have been submitted to the Regional Board and the Executive Officer determines that the results meet the following minimum requirements:
  - a. Survivability of Pimephales promelas in 100% effluent shall equal or exceed 90% of the survivability of Pimephales promelas in a laboratory control sample containing 0% effluent.
8. Prior to any change of ownership of this operation, the discharger shall transmit a copy of this Order to the succeeding owner/operator, and forward a copy of the transmittal letter to this Board.

I, Arthur Swajian, 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, Colorado River Basin Region, on November 30, 1988.

  
Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. 88-2

FOR  
RED HILL GEOTHERMAL, INC.  
DEL RANCH POWER PLANT  
COOLING TOWER BLOWDOWN  
West of Calipatria - Imperial County

Location of Discharge: SW 1/4 of SE 1/4, Section 33, T11S, R13E, SBB&M

EFFLUENT MONITORING

Wastewater discharged into Vail 4A Drain shall be monitored for the following constituents. The sampling station shall be constructed, maintained, and located where representative samples of the effluent can be obtained.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
pH	ph Units	Grab	Daily
Flow discharge to Vail 4A Drain	GPD	-	Daily
Free Available Chlorine	mg/l	Grab	Daily
Total Dissolved Solids	mg/l	Grab	Weekly
Total Suspended Solids	mg/l	Grab	Weekly
Settleable Matter	ml/l	Grab	Weekly
Zinc	mg/l	Grab	Quarterly
Hexavalent Chromium	mg/l	Grab	Quarterly
Bioassay	-	-	Quarterly

RECEIVING WATER MONITORING

Water in Vail 4A Drain shall be monitored for the following constituents. All samples shall be taken between 6 a.m. and 6 p.m. The sampling station shall be maintained where representative samples of mixed water can be obtained. Said sampling station shall be located midstream in Vail 4A Drain at a point where the discharge and receiving waters have thoroughly mixed, but not to exceed 50 feet downstream from the point of discharge.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Temperature*	°F	Grab	Weekly
pH	ph Units	Grab	Weekly
Dissolved Oxygen	mg/l	Grab	Weekly

\*Temperature of the receiving water shall be taken within 30 feet of the point of discharge, both upstream and downstream of the point of discharge.

REPORTING

The discharger shall inform the Regional Board concerning the location of all sampling stations for the above monitoring.

Daily, weekly, monthly, and quarterly reports shall be submitted to the Regional Board by the 15th day of the following month.

Forward monitoring reports to:

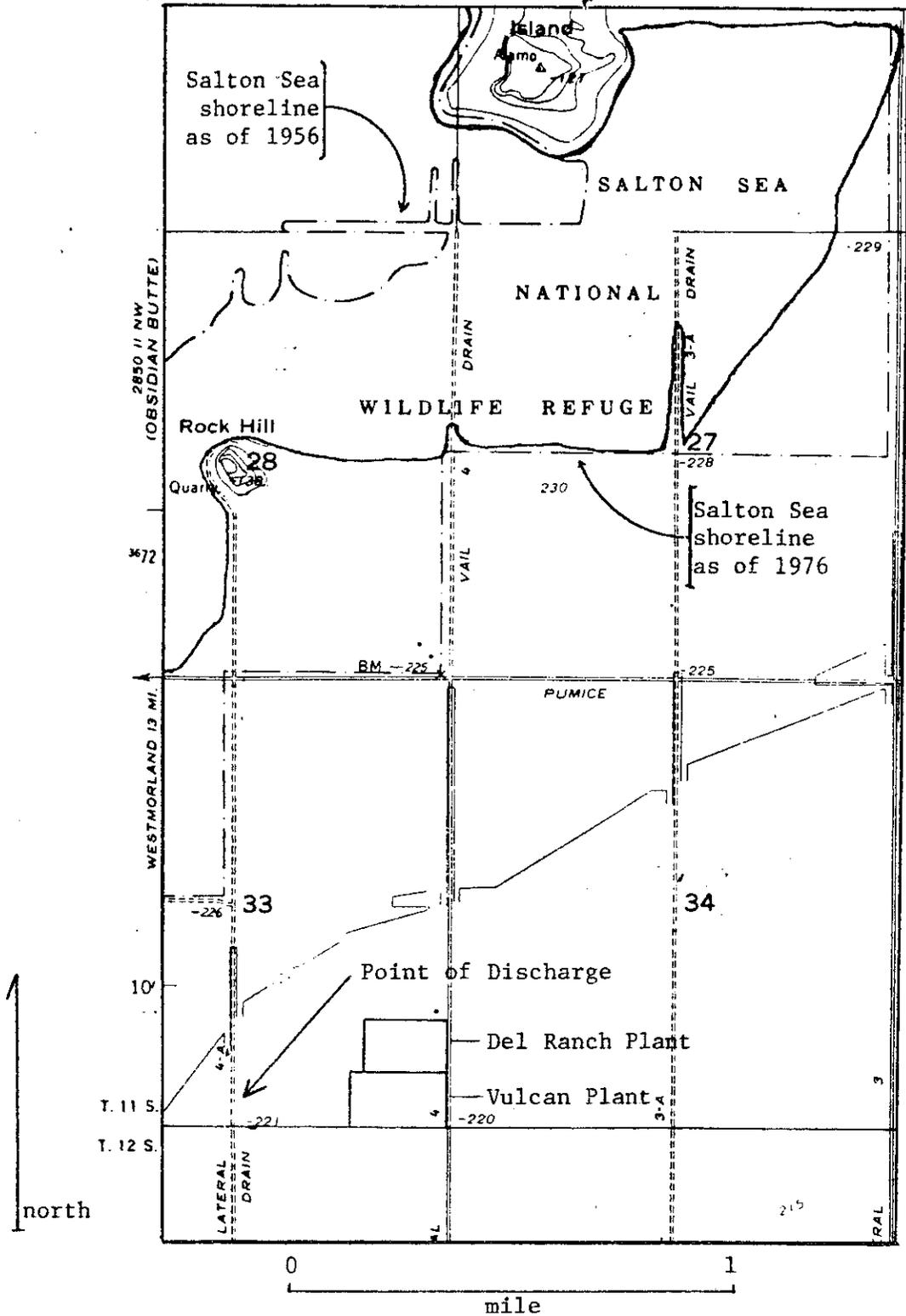
California Regional Water Quality Control Board  
Colorado River Basin Region  
73-271 Highway 111, Suite 21  
Palm Desert, CA 92260

ORDERED BY:

Arthur Levajian  
Executive Officer

November 30, 1988

Date



SITE MAP

RED HILL GEOTHERMAL, INC.  
 DEL RANCH POWER PLANT  
 COOLING TOWER BLOWDOWN  
 West of Calipatria - Imperial County

SE 1/4 Section 33, T11S, R13E, SBB&M  
 USGS Niland 7.5 min. Topographic Map

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