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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 82-29
NPDES NO. CA0104876

WASTE DISCHARGE REQUIREMENTS
FOR
MAGMA ELECTRIC COMPANY
MAGMAMAX POWER PLANT
COOLING POND BLOWDOWN
East Mesa Area - Imperial County

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

1. Magma Electric Company (hereinafter also referred to as the discharger), P.O. Box 2082, Escondido, California 92025, submitted an NPDES Application for Permit to Discharge, dated April 12, 1982. Said application is assigned Application No. CA0104876.
2. The discharger is discharging a peak month average daily flow of 390,000 gallons-per-operating day of cooling pond blowdown water from a 10 megawatt geothermal test plant into Warren Drain in the SW 1/4 of Section 12, T16S, R16E, SBB&M. The wastewater flows about 5 miles in Warren Drain to Alamo River, and then flows approximately 40 miles to Salton Sea. The discharger reports that up to 2 MGD could be discharged into Warren Drain during periodic pond cleaning operations.
3. The discharge has been subject to waste discharge requirements adopted in Order No. 77-73 (NPDES CA0104876) which allows discharge to Warren Drain.
4. EPA and the Regional Board have classified this discharge as a major discharge.
5. The discharger utilizes Imperial Irrigation District water for cooling. Incoming water is treated with the following chemicals:

<u>Chemical</u>	<u>Usage</u>
Sulfuric Acid	pH Control
Anticor 226L*	corrosion inhibitor
Chlorine	anti-fouling

*Anticor 226L consists of Amino (methylene phosphonic acid), and Hydroxeyethylidene Diphosphonic acid and zinc chloride.

6. The Water Quality Control Plan for the West Colorado River Basin Region was adopted on April 10, 1975. The Basin Plan contains water quality objectives for Imperial Valley Drains.

*replaced
87-049*

7. The beneficial uses of water in Alamo River, and Imperial Valley Drains discharging thereto are:
 - a. Transport of dissolved solids to Salton Sea for Agricultural soil salinity control.
 - b. Freshwater replenishment for Salton Sea.
 - c. Freshwater habitat for fish and wildlife.
 - d. Recreation - non-water contact.
8. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
9. The Board in a public meeting heard and considered all comments pertaining to the discharge.
10. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing, provided the Regional Administrator has no objections.
11. 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.

IT IS HEREBY ORDERED, Magma Electric Company, 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. Representative samples of wastewater discharged to Warren Drain shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Arithmetic Mean Discharge Rate</u>	<u>Daily Maximum Discharge Rate</u>
a. Total Dissolved Solids	mg/l	4,000	4,500
b. Suspended Solids	mg/l	30	45
c. Settleable Matter	ml/l	0.3	1.0
d. Total Chlorine Residual	mg/l	-	Less than 0.05

B. Receiving Water Limitations

1. Wastewater discharged to Warren Drain shall not:
 - a. Cause the temperature of the waters in said Drain to be increased by more than 5⁰F.
 - b. Contain any substances in concentrations toxic to human, animal, plant or aquatic life.
 - c. Cause concentration of zinc in Warren Drain to exceed 0.5 mg/l.
 - d. Depress the dissolved oxygen content of water in Warren Drain below 5.0 mg/l.
 - e. Cause the values for pH of Warren Drain water to be outside the limits of 6.0 to 9.0.
2. This discharge shall not cause a violation of any applicable water quality standard 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 waste shall create a pollution or a nuisance as defined in Division 7 of the California Water Code.
2. This Order includes the attached "Monitoring and Reporting Program No. 82-29", and future revisions thereto, as specified by the Executive Officer.
3. Any proposed change in corrosion control or biological control chemicals shall be reported to the Regional Board, and the discharger shall obtain approval from the Executive Officer prior to commencement of discharge of these chemicals.
4. This Order expires September 22, 1987, and the discharger shall file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of this date as an application for issuance of new waste discharge requirements.
5. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301 (b) (2) (C), and (D), 304 (b) (2), and 307 (a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. Controls any pollutant not limited in the permit.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.
6. This Order supersedes Board Order No. 77-73.

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 September 22, 1982.


Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 82-29

FOR

MAGMA ELECTRIC COMPANY
MAGMAMAX POWER PLANT
COOLING POND BLOWDOWN
East Mesa Area - Imperial County

Location of Discharge: SW 1/4, Section 12, T16S, R16E, SBB&M

EFFLUENT MONITORING

Wastewater discharged into Warren Drain shall be monitored for the following constituents. All samples shall be taken between 6 a.m. and 6 p.m. The existing sampling station shall be maintained at the point of discharge and shall continue to be 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>
Total Dissolved Solids	mg/l	Grab	Weekly
Flow	Gallons/day	Average Daily	Rptd. Monthly*
Copper	mg/l	Grab	Monthly
Zinc	mg/l	Grab	Monthly
Lead	mg/l	Grab	Monthly
Suspended Solids	mg/l	Grab	Monthly
Settleable Matter	ml/l	Grab	Weekly
Total Chromium	mg/l	Grab	Monthly
Total Chlorine Residual	mg/l	Grab	Daily

RECEIVING WATER MONITORING

Water in Warren Drain shall be monitored for the following constituents. All samples shall be taken between 6 a.m. and 6 p.m. The existing sampling station shall be maintained where representative samples of mixed water can be obtained. Said sampling station shall continue to be located midstream in Warren Drain at a point where the discharge and receiving waters have thoroughly mixed, but not to exceed 30 feet downstream from the point of discharge.

*Reported for each day with average daily monthly flow calculated.

Superseded
9/23/87
By 87-49

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Zinc	mg/l	Grab	Monthly
Temperature*	⁰ F	Grab	Weekly
pH	Unit	Grab	Weekly
Dissolved Oxygen	mg/l	Grab	Weekly

1. Daily, weekly and monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month.
2. Forward monitoring reports to:

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

and also to:

Regional Administrator
Environmental Protection Agency
Region IX, Attn: Water Div., CA Br.
215 Fremont Street
San Francisco, CA 94105

ORDERED BY:

Arthur Sengjian
Executive Officer

September 22, 1982
Date

*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. In the event the discharge is at the upper end of the drain, a nearby drain of similar characteristics may be sampled in lieu of the upstream sample.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

FACT SHEET
APPLICATION FOR WASTE DISCHARGE REQUIREMENTS
TO DISCHARGE TO STATE WATERS

PUBLIC NOTICE NO. 7-82-1
APPLICATION NPDES NO. CA0104876
ORDER NO. 82-29

Magma Electric Company, P.O. Box 2082, Escondido, CA 92025, has applied to the California Regional Water Quality Control Board, Colorado River Basin Region, for a discharge of wastewater into State Waters.

Applicant operates a 10 megawatt geothermal test plant and discharges a peak month average daily flow of 390,000 gallons-per-operating day of cooling pond blowdown water into Warren Drain, which flows for about 5 miles to Alamo River, and then flows about 40 miles to Salton Sea. A maximum of 2 MGD would be discharged during periods of pond cleaning operations. A more complete description of the discharge is presented below.

On the basis of preliminary staff review and application of lawful standards and regulations, the Regional Board proposes to adopt updated waste discharge requirements for the discharge. The proposed determinations are described more fully below.

The application, related documents, proposed effluent limitations, and special conditions, comments received, and other information is on file and may be inspected at any time between 8:00 a.m. and 5:00 p.m. Monday through Friday. Copying of documents may be arranged through the Regional Board by calling (714) 346-7491.

The proposed staff determinations are tentative. Persons wishing to comment upon or object to the proposed determinations are invited to submit same in writing to the above address no later than May 21, 1982. All comments or objections received prior to this date will be considered in the formulation of final determinations regarding the application. If no objections are received, the Regional Board shall make final determination within 90 days. As described more fully below, a public hearing may be held if response to public notices indicates a significant public interest.

DESCRIPTION OF EXISTING DISCHARGE

Discharge from Cooling Basin

<u>Constituents</u>	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Total Dissolved Solids	2246 mg/l	2404 mg/l	2574 mg/l
Suspended Solids	9 mg/l	14.7 mg/l	30 mg/l
Settleable Matter	< 0.10 ml/l	< 0.10 ml/l	< 0.10 ml/l
Total Chlorine Residual	< 0.01 mg/l	< 0.01 mg/l	< 0.01 mg/l
pH	7.5 pH Units	8.2 pH Units	8.7 pH Units
Copper	0.01 mg/l	0.03 mg/l	0.06 mg/l
Zinc	0.05 mg/l	0.15 mg/l	0.23 mg/l
Lead	< 0.01 mg/l	0.03 mg/l	0.09 mg/l
Chromium	0.01 mg/l	0.02 mg/l	0.05 mg/l

Receiving Water Analyses

Zinc	0.05 mg/l	0.14 mg/l	0.23 mg/l
Temperature Upstream	60.8 ⁰ F	74.4 ⁰ F	83 ⁰ F
Temperature Downstream	60.8 ⁰ F	74.1 ⁰ F	83 ⁰ F

The wastewater is discharged at the beginning of Warren Drain and flows for about 5 miles before entering Alamo River, which flows about 40 miles to Salton Sea. Alamo River is not a natural river, but is a large agricultural drainage wasteway. It empties into Salton Sea, and without the replenishment which is provided by the irrigation drainage waters from Imperial Valley to the south and Coachella Valley to the north, Salton Sea would dry up in less than ten years. The drainage water is saline in that it is derived principally by leaching from the soil profile of agricultural lands, and the water in Salton Sea is approximately thirteen times as saline as the drainage water which replenishes it.

Community and industrial wastewaters comprise only a small fraction of Alamo River flow, about 1.1 percent of the total. Farm drainage from Mexico comprises 0.4 percent and the remaining 98.5 percent is farm drainage from Imperial Valley.

The beneficial uses of water in Alamo River, and Imperial Valley Drains discharging thereto are:

- a. Transport of dissolved solids to Salton Sea for agricultural soil salinity control.
- b. Freshwater replenishment for Salton Sea.
- c. Freshwater habitat for fish and wildlife.
- d. Recreation - non-water contact.

PROPOSED DETERMINATIONS

The Regional Board has examined the above application. On the basis of applicable effluent limitations and water quality standards, Division 7 of the California Water Code, and regulations issued thereunder as contained in Title 23, California Administrative Code, the Regional Board proposes to update the existing waste discharge requirements containing effluent limitations and certain other conditions. The following is a brief description of the proposed effluent limitations and special conditions.

A. Proposed Effluent Limitations

<u>Constituent</u>	<u>Unit</u>	<u>30-Day Arithmetic Mean Discharge Rate</u>	<u>Daily Maximum Discharge Rate</u>
Total Dissolved Solids	mg/l	4,000	4,500
Suspended Solids	mg/l	30	45
Settleable Matter	ml/l	0.3	1.0
Total Chlorine Residual	mg/l	-	0.05

B. Proposed Receiving Water Limitations

Wastewater discharged to Warren Drain shall not:

1. Cause the temperature of the waters in said Drain to be increased by more than 5⁰F.
2. Contain any substances in concentrations toxic to human, animal, plant or aquatic life.
3. Cause concentration of zinc to exceed 0.5 mg/l.
4. Depress the dissolved oxygen content of water in Warren Drain below 5.0 mg/l.
5. Cause the values for pH of Warren Drain water to be outside the limits of 6.0 to 9.0.

PROPOSED SCHEDULE OF COMPLIANCE

The applicant presently meets the waste discharge requirements and is required to continue doing so.

PROPOSED SPECIAL CONDITIONS

The applicant is required to monitor his discharge on a regular basis and report the results to the Regional Board. The monitoring results will be available to the public.

APPLICABLE EFFLUENT LIMITATIONS AND WATER QUALITY STANDARDS

The following are the effluent limitations and water quality standards which were applied to the applicant's discharge in the formulation of the above proposed determinations:

1. pH determination is based upon aquatic life requirements.
2. Limitations for Total Dissolved Solids based upon objective of encouraging wastewater reclamation by protecting wastewater from unnecessary mineralization.
3. Limitation on Settleable Matter to prevent formation of sludge deposits at point of discharge.
4. Limitation of Suspended Solids consistent with Environmental Protection Agency secondary treatment regulations.
5. Total Chlorine Residual set to protect aquatic life in receiving waters.

WRITTEN COMMENTS

Interested persons are invited to submit written comments concerning the discharge and the Executive Officer's proposed determinations. Comments should be submitted by May 21, 1982, either in person or by mail to:

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

The application number should appear next to the above address on the envelope and on the first page of any submitted comments. All comments received by the above date, will be considered in the formulation of final determinations.

INFORMATION AND COPYING

Persons wishing further information may write to the above address or call the Regional Board at (714) 346-7491. Copies of the application, proposed waste discharge requirements and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying.

REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group of applications may leave his name and address and phone number as part of the file for the application. This list of names will be maintained as a means for persons with an interest in an application to contact others with similar interests.

PUBLIC HEARING

If submitted comments indicate a significant public interest in the application or if he believes useful information may be produced thereby, the Executive Officer, at his discretion, may hold a public hearing on the application. Any person may request the Executive Officer to hold a public hearing on the application.

Public notice of a hearing will be circulated at least 30 days in advance of the hearing which will be held in the vicinity of the discharge. Thereafter, the Executive Officer will formulate his final determinations within 60 days. Further information regarding the conduct and nature of public hearings concerning discharge permits may be obtained by writing or visiting the Colorado River Basin Regional Office, 73-271 Highway 111, Suite 21, Palm Desert, CA 92260.

