

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 77-8

WASTE DISCHARGE REQUIREMENTS
FOR
MAGMA POWER COMPANY
East Mesa Area - Imperial County

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

1. Magma Power Company (hereinafter also referred to as the discharger), 631 South Witmer Street, Los Angeles, California 90017, submitted a Report of Waste Discharge for three geothermal wells dated September 10, 1976.
2. The discharger proposes to drill in the East Mesa Area of Imperial County two (2) deep test geothermal wells and one injection well located as follows:

Geothermal Wells

Location

Magma Smith #1

415'E and 1150'N from SW corner
Section 16, T16S, R17E, SBB&M

Magma Smith #2

350'W and 250'N from SE corner
Section 16, T16S, R17E, SBB&M

Injection Well

Magma U.S. 46-7

2500'E and 1850'N from SW corner,
Section 7, T16S, R17E, SBB&M

Each well site will disturb about 1 acre of surface.

3. The discharger proposes that the drilling muds (totaling about 75,000 gallons) will be discharged into each storage basin, constructed 35 feet from each well. Water will be allowed to evaporate from the basin and then the mud may be spread on the surface of existing and/or proposed access roads.

The discharger proposes to use the following drilling fluid components:

Low solid magcogel, some caustic soda and lignite.

*Superseded
78-19*

4. The discharger reports that the storage basin serving Magma 46-7 (the injection well) will receive only drilling muds and cleanout fluids. The storage basins for both Magma Smith #1 and #2, which may receive geothermal fluids at a later time (not specified in this Order), will be lined with a 6-inch compacted layer of bentonite and clay. The storage basins will be approximately 120' x 60' x 5' (deep).

5. The discharger proposes that surface discharge of the drilling muds will be restricted to the access roads lying within the boundaries described for the leases as follows:

Lease CA 964 (total of 1867.60 acres)	All of Sec. 7 and 18, T16S, R17E, SBB&M E½ of NW¼ and E½ of Sec. 12, T16S, R16E, SBB&M NE¼ and NW¼ or SE¼ of Sec. 13, T16S, R16E, SBB&M
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Lease on "C" Land
(total of 639.06 acres)

Barbara Smith (479.06 acres) Charles Likens (160 acres)	All of Section 16 (less 7.0 acres in SW corner) T16S, R17E, SBB&M
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6. The discharger proposes to clean-out the drilling debris from each production well by flowing approximately 1000 gallons-per-minute for about (3) hours. A maximum volume of 180,000 gallons (or to capacity of basin) of cleanout fluid may be discharged into each storage basin and allowed to evaporate. The residual solids would be trucked to a disposal site approved to receive these wastes.
7. The discharger has been informed by the Regional Board that there are no solid waste disposal sites in Region 7 at this time that have been approved by the Regional Board to receive geothermal salt wastes.
8. The discharger proposes to drill an injection well, identified in this Order as Magma U.S. 46-7. This well will serve to dispose geothermal fluids produced from future proposed Magma wells 44-7 and 48-7 during production testing. It will be drilled to a depth of about 3,000 feet.

The discharger proposes that reinjection will occur between 2,100 feet and 2,900 feet. The discharger reports that the permeable sands in this injection zone are high enough above the potential producing zones of the geothermal wells so as not to contaminate nor cool the production reservoir. The discharger also claims that the injection zone is low enough to prevent contamination of any usable domestic or farm water.

9. The discharger reports that water for drilling the wells will be obtained from the East Highline Canal.
10. The discharger proposes that clean-up will be accomplished upon abandonment of the well. All residue removed from the storage basins will be disposed of at an approved solid waste disposal site.
11. The discharger states that a maximum of approximately 6-12 persons will be working at the well sites at any one time. Portable sanitary facilities will be provided at the sites.
12. The Water Quality Control Plan for the West Colorado River Basin was adopted by the Regional Board on April 10, 1975. This Order implements the objectives stated in said Plan.
13. There are no surface waters in the vicinity of the discharge. Shallow and deep groundwaters at the location of the production wells and storage basins are saline and are not beneficially used. Department of Water Resources has informed the Board that the groundwater from a 59-foot-deep well (located within 3,000 feet of both proposed production wells) had a total dissolved solids concentration of 2,220 mg/l on May 19, 1947.
14. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge.
15. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, Magma Power Company, shall comply with the following:

A. Discharge Specifications

1. Neither the treatment nor the discharge of wastes shall cause a pollution or a nuisance.
2. Only drilling muds with total dissolved solids concentration not exceeding 5,000 mg/l may be discharged to the roads as set forth in Finding 5 (above).
3. The discharge of geothermal fluids to any canals, drainage channels or drains which could provide flow to Salton Sea is prohibited.

4. The surface discharge of geothermal fluids other than into storage basins from which there is no seepage or overflow is prohibited. Only well cleanout water from said canal may be discharged into the reserve mud pits.
5. Adequate protective works and maintenance shall be provided to assure that storage basins will not become eroded or otherwise damaged during the project period, and/or until all geothermal materials are removed.
6. A minimum freeboard of at least two (2) feet shall be maintained in all storage basins.
7. Geothermal wastes discharged by subsurface injection shall be discharged into the zone of extraction, or zones that contain a total dissolved solids content which is equal to or greater than that contained in the zone of extraction, or to other zone(s) approved by the Executive Officer.
8. All geothermal wastes shall be removed from the storage basins with cleanup of all contents upon abandonment of the basins. Lack of construction or operational activity on the site for a period of one (1) year shall constitute abandonment for the purposes of this Order.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 77-8" and "General Provisions for Monitoring and Reporting", and future revisions, thereto, as specified by the Executive Officer.
2. Prior to the discharge of any geothermal materials into storage basins, the discharger shall submit to the Regional Board a technical report showing the construction of said basins, and a certificate signed by a California Registered Civil Engineer stating that the basins and attendant facilities are constructed to meet the requirements of this Order.
3. This Order is for the discharge of construction and testing of the three reported wells only, and for reinjection of testing fluids into Magma U.S. 46-7 from the reported three wells only.

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

January 26, 1977.

Arthur Swajian

Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 77-8
FOR

MAGMA POWER COMPANY
East Mesa Area - Imperial County

Location: Sections 7 and 16, T16S, R17E, SBB&M

MONITORING

Magma Power Company shall report monitoring data to the Regional Board in accordance with the following schedule:

<u>Constituents</u>	<u>Units</u>	<u>Reporting Frequency</u>
1. Volume discharged to each storage basin	Gallons	Monthly
2. Volume contained in each storage basin	Gallons	Monthly
3. Total dissolved solids content of waste fluid in each storage basin	mg/l	Monthly
4. Total Dissolved solids of fluid extracted from drilling muds*	mg/l	Prior to spreading of drilling muds on roads
5. Immediate reporting of any accidental spillage or release of waste material, and also, plan for immediate measures being taken to correct same and limit detrimental effects.		
6. Within 10 days after the initial discharge of geothermal fluid from a well, the discharger shall report said initial discharge to the Board.		
7. Report of completion of removal of all geothermal waste from storage basins and cleanup of premises - reported within one week following completion of work.		
8. At least ten (10) days prior to destruction of any storage basins the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.		

*Soil-water extract analysis as approved by the Executive Officer.

REPORTING

The above monitoring program shall be implemented immediately upon commencement of well discharge at each site.

Monthly reports shall be submitted to the Regional Board by the 15th day of the following month. Reports for Item 5 (above) shall be forwarded immediately, and if at all possible shall be preceded by phone communication to the Regional Board's office. Phone No. (714)346-7491. Copies of the reports submitted to the Board pursuant to this Monitoring and Reporting Program shall be maintained at the operations site, and shall also be made available to staff of the Regional Board upon request.

Mail reports to:

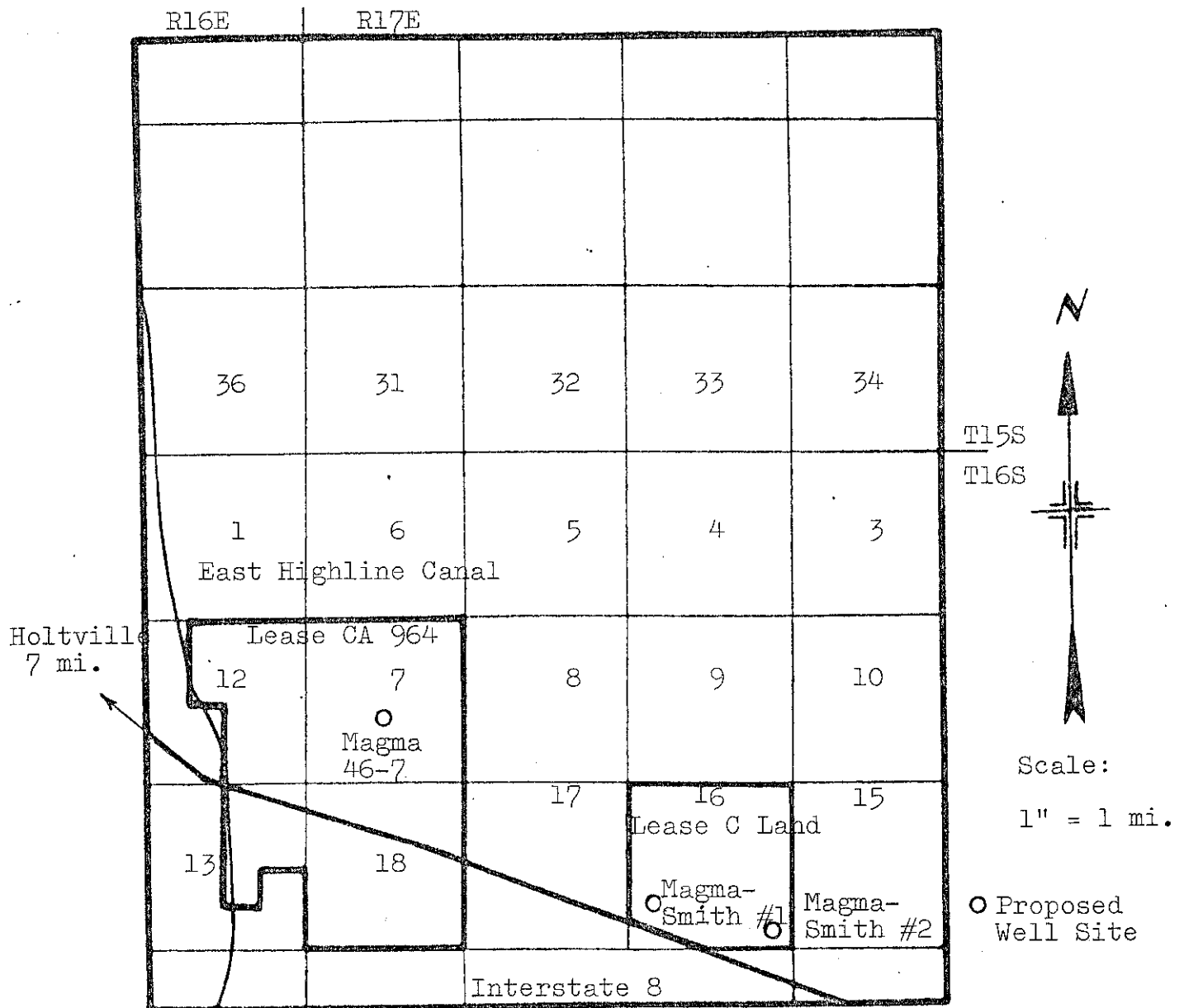
California Regional Water Quality Control Board
Colorado River Basin Region
73-271 Highway 111, Suite 21
Palm Desert, CA 92260

ORDERED BY

Arthur Sevajian
Executive Officer

January 26, 1977
Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - 7



SITE MAP
 MAGMA POWER COMPANY
 East Mesa Area - Imperial County
 Location: Sections 7 & 16, T16S, R17E, SBB&M
 Glamis & Holtville 15 min. Topographic Maps

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