

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 88-128

WASTE DISCHARGE REQUIREMENTS
FOR
GEO OPERATOR CORPORATION
GEOTHERMAL BRINE HOLDING BASIN
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

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

1. GEO Operator Corporation (hereinafter referred to as the discharger), 1330 North Dutton Avenue, Suite A, Santa Rosa, 95401, submitted a Report of Waste Discharge dated May 6, 1988.
2. GEO Operator Corporation is a subsidiary of Geothermal Resources International, Inc., Corporation Number 957208 in the State of California.
3. The discharger proposes to construct and operate a containment basin with a capacity of about 1,950,000 gallons. Said containment basin would be used to temporarily retain geothermal brines, cooling tower blowdown, and minor amounts of equipment drainage and rainwater runoff.
4. The discharger reports that said containment basin would be constructed with a synthetic liner (minimum thickness of 30 mil), covered with one foot of soil cement (native soil mixed with 9% cement). Fluids from said basin would be injected subsurface into wells permitted under Board Order No. 88-88 as adopted by the Regional Board on September 22, 1988.
5. The containment basin would be constructed next to the power plant (37 megawatt) to be constructed by the discharger in the SW 1/4, NW 1/4, Section 7, T16S, R17E, SBB&M.
6. Ground waters, including geothermal fluids, in this portion of the East Mesa KGRA are known to have Total Dissolved Solids concentrations of 1,600 mg/l to 15,000 mg/l. The fluids do not contain any constituents at levels either in the fluid or in concentrated salt cake, which are classified as hazardous by the Department of Health Services, Toxic Substances Control Division, in accordance with California Code of Regulations, Title 22, Chapter 30, Article 11, Section 66699.

SUPERSEDED BY
BOARD ORDER NO. 00-01

7. There are no surface waters in the vicinity of the discharge. Shallow ground waters are of marginal quality and presently are not beneficially used. Deep ground waters are being tested for potential geothermal power production.
8. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted by the Regional Board on November 14, 1984.
9. An Environmental Assessment (CA #067-88-28) was prepared for this project by the U. S. Bureau of Land Management. This Environmental Assessment covered all portions of the project to be located on federal lands administered by the Bureau of Land Management. A Finding of No Significant Impact (FONSI) based on the Environmental Assessment noted above, was approved by the BLM on April 28, 1988.

Regional Board staff has reviewed said assessment and finds that this project should not have a significant environmental impact on water quality if conducted according to requirements and provisions of this Order.

10. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for this discharge.
11. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, the discharger shall comply with the following:

A. Discharge Specifications

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. Geothermal fluids and other wastes shall not enter any canals, natural or man-made drainage channels, or drains (including subsurface drainage systems) except as allowed under an appropriate National Pollutant Discharge Elimination System (NPDES) Permit.
3. Storage of fluids described in Finding No. 3 above, other than into a containment basin having a liner permeability of 1×10^{-8} cm/sec, or less, is prohibited, and the fluids contained therein shall not penetrate through the lining during the containment period.
4. Materials discharged to and/or stored in a containment basin shall not overflow said basin. A minimum freeboard of two (2) feet shall be maintained in the containment basin at all times.
5. Adequate protective works and maintenance shall be provided to assure that the containment basin shall not become eroded or otherwise damaged by floods occurring during the projected life of said basin.

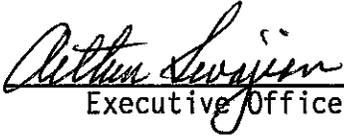
6. The containment basin shall be designed and constructed to prevent entry or entrapment of wildlife.
7. Final disposal of residual wastes and cleanup of the containment basin shall be accomplished to the satisfaction of the Regional Board's Executive Officer upon abandonment of operations.

B. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 88-128", and future revisions thereto, as specified by the Executive Officer.
2. The discharger shall submit to the Regional Board a proposal to monitor the uppermost aquifer beneath the containment basin during the projected life of the basin. Said proposal shall be submitted within 60 days of the adoption of this Order, and shall be implemented after receiving the approval of the Executive Officer.
3. The discharger shall submit to the Regional Board, at least 30 days prior to discharge to a newly constructed containment basin, written adequate assurance that money is committed in the amount of \$50,000.00 to insure that the containment basin is cleaned up and closed in accordance with the requirements of this Order.
4. Prior to discharge to a newly constructed containment basin the discharger shall submit to the Regional Board a technical report on the construction of said basin, and a certificate signed by a California Registered Civil Engineer or Certified Engineering Geologist stating that the basin and attendant facilities are constructed to meet the requirements of this Order.
5. Prior to injection of fluid from the containment basin, the discharger shall demonstrate to the satisfaction of the Executive Officer, that said injection will not degrade the water quality of the aquifer in which the injection occurs.
6. In the event of any change in operation, or in control or ownership of land or waste disposal facilities owned or controlled by the discharger, the discharger shall:
 - a. Notify this Board of such change; and
 - b. Transmit a copy of this Order to the succeeding owner or operator, and file a copy of the transmittal letter with this Board.
7. This Order does not authorize violation of any federal, state, or local laws or regulations.

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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. 88-128
FOR
GEO OPERATOR CORPORATION
GEOTHERMAL BRINE HOLDING BASIN
EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KGRA)
Imperial County

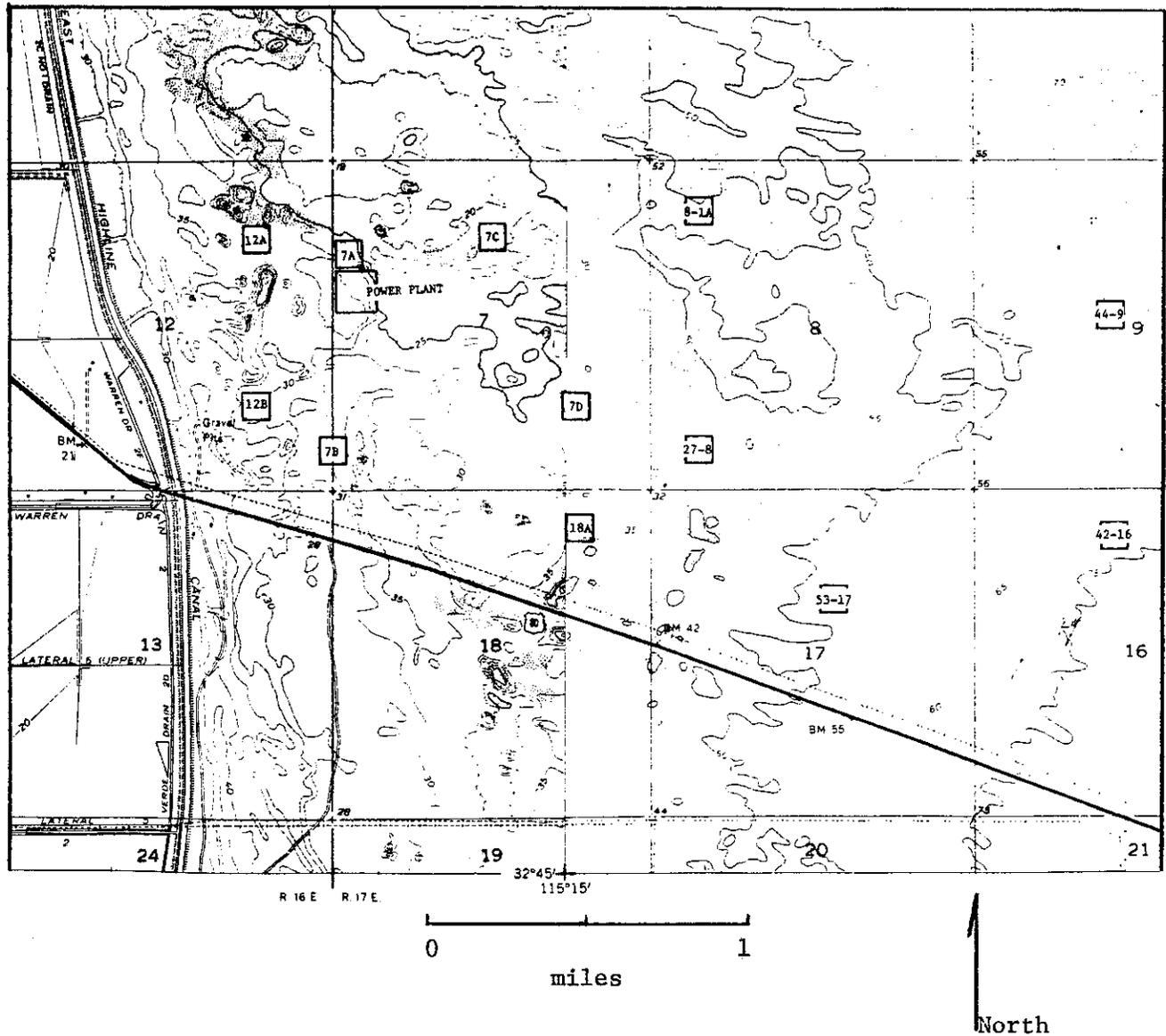
Location of Discharge: SW 1/4, NW 1/4, Section 7, T16S, R17E, SBB&M

MONITORING

GEO Corporation (discharger) shall report monitoring data to the Regional Board in accordance with the following schedule:

1. At least 30 days prior to discharge to a newly constructed containment basin, submit a technical report on the construction of said basin, and a certificate signed by a California Registered Civil Engineer, or Certified Engineering Geologist, stating that the basin and attendant facilities are constructed to meet the requirements contained in Board Order No. 88-128.
2. At least 30 days prior to discharge to the containment basin, submit a written report on the proposed method and estimated costs of cleanup and closure in accordance with the requirements of Board Order 88-128.
3. Information in compliance with the approved ground water monitoring proposal (see Provision No. 2 of Board Order No. 88-128).
4. Submit monthly the volume of fluid contained in the containment basin and the Total Dissolved Solids (TDS) concentration of said fluid.
5. Submit monthly reports on the volume and TDS concentration of fluid in that basin from which fluid is injected into an injection well, the name and location of the well(s), and the depth of fluid injection in said wells.
6. Immediately report on any accidental spillage or release of waste material, noting any steps taken both to clean up the spillage and to deter possible future spillage.

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EAST MESA KNOWN GEOTHERMAL RESOURCE AREA (KRGA)
Imperial County

Section 7, T16S, R17E, SBB&M
USGS Glamis SW and Holtville East 7.5 min. Topographic Maps

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