

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 77-7

WASTE DISCHARGE REQUIREMENTS
REPUBLIC GEOTHERMAL, INC. - NILAND
West of Niland - Imperial County

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

1. Republic Geothermal, Inc. (hereinafter also referred to as the discharger), 2544 Cleveland Avenue, Suite 5, Santa Rosa, California 95401, submitted a Report of Waste Discharge dated September 23, 1976.

2. The discharger proposes to drill three deep-test wells in the Niland area of Imperial County. The wells will be located as follows:

<u>Well</u>	<u>Location</u>
Goin #2	1218' S, 190' E from NW corner, Section 4, T11S, R14E, SBB&M
Jameson #3	180' N, 230' E, from SW corner, Section 32, T10S, R14E, SBB&M
Jameson #4	160' N, 545' E, from SW corner, Section 8, T11S, R14E, SBB&M

3. The discharger is subject to waste discharge requirements adopted in Order No. 76-31, for three geothermal wells in the Westmorland area. The three proposed wells will be situated approximately 50 feet from each of the above three wells.
4. The proposed new wells will use the same reserve mud pit and attendant facilities at each site as were approved by Order No. 76-31. Each new well will disturb less than 0.34 acres of additional surface.
5. The discharger proposes that drilling muds will be stored in the leak-proof mud pits and later either reused, neutralized and made arable, or trucked and discharged at a disposal site approved to receive these wastes.

*Rescinded by
86-51
7/9/80*

The possible drilling fluid components which may be used are:

- Bentonite, or colloidal clay (drilled solids)
- Wyoming Bentonite plus .1% acrylic acid
- Mica
- Lignite, or leonardite brown coal
- Tannic acid
- Caustic soda
- Cane fiber
- Ground nut shells
- Lime
- Barrium sulphate
- Cypan
- Bit Lube
- Thread dope
- Diesel oil

6. The discharger proposes that geothermal fluid from well clean-out and from a brief testing period will be stored in steel tanks and storage basins, and later reinjected or discharged to an approved disposal site. Subsequent discharge of fluids will be by reinjection directly into the subsurface.
7. The discharger proposes that reinjection will occur at a depth below 2500 feet. The discharger also reports that the salinity below this depth varies from 15,000 to 23,000 mg/l total dissolved solids.
8. The discharger estimates that approximately 35,000 barrels (1.5 million gallons) of well cleanout water with salt concentration of 100,000 - 350,000 ppm will be discharged at each well.
9. 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.
10. The discharger has stated that a maximum of approximately 12 - 15 persons will be working at the well sites at any one time. Portable sanitary facilities will be provided at the sites.
11. The Water Quality Control Plan for the West Colorado River Basin was adopted on April 10, 1975. This Order implements the objectives stated in said Plan.
12. Beneficial uses to be protected by this Order are as follows:
 - a. Groundwater
 1. Shallow groundwaters at the discharge location are saline and are not beneficially used.

b. Imperial Valley irrigation drains

1. Limited public fishing activity.
2. Transport of dissolved solids to the Salton Sea for agricultural soil salinity control.
3. Freshwater habitat for fish and wildlife.
4. Freshwater replenishment for the Salton Sea.

c. Salton Sea

1. Water contact recreation.
2. Non-contact recreation.
3. Water and vegetative habitat for the maintenance of wildlife.

13. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge.

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

IT IS HEREBY ORDERED, Republic Geothermal, Inc., 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. Geothermal fluids and other wastes shall not enter the Salton Sea or any canals, drainage channels, or drains (including subsurface drainage systems or aquifers) which could provide flow or seepage to the Salton Sea.
3. Temporary discharge and/or storage of geothermal materials other than in basins from which there is no seepage or overflow is prohibited.
4. Adequate protective works and maintenance shall be provided to assure that storage basins will not become eroded or otherwise damaged.

5. A minimum freeboard of at least two (2) feet shall be maintained in all storage basins.
6. Storage basins shall not be located within 50 linear feet of any irrigation drainage ditch.
7. All geothermal wastes shall be removed from the storage basins and reinjected or discharged to a disposal site approved for such wastes. Cleanup of all contents shall be accomplished upon abandonment of the basins. Lack of construction or operational activity on the site for a period of six (6) months shall constitute abandonment for the purposes of this Order.
8. Fluids discharged by subsurface injection at this location shall be discharged below a depth of 2500 feet, and shall not be discharged into any subsurface zone which has a total dissolved solids content of less than 10,000 mg/l, unless the quality of the injection water is comparable to that of the receiving water.
9. Of the above-reported wastes, only drilling muds may be discharged at other than Class I solid waste disposal sites, which in addition must be approved by the Regional Board to receive these wastes.

B. Provisions

1. The discharger shall comply with the "Monitoring and Reporting Program No. 77-7", 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 certificate signed by a California Registered Civil Engineer stating that the basin and attendant facilities are constructed to meet the requirements of this Order.

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.


Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 77-7
FOR

REPUBLIC GEOTHERMAL, INC. - NILAND
West of Niland - Imperial County

Location: Section 32, T10S, R14E, SBB&M
Section 4 and 8, T11S, R14E, SBB&M

MONITORING

Republic Geothermal, Inc. 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 of geothermal fluid discharge to each storage basin	Gallons	Monthly
2. Volume contained in each storage basin	Gallons	Monthly
3. Total dissolved solids content of waste fluid contained in each storage basin	mg/l	Monthly
4. Volume injected to subsurface strata from each storage basin	Gallons	Monthly
5. Volume directly reinjected to subsurface strata from each geothermal well	Gallons	Monthly
6. Total dissolved solids concentration by chemical analysis of waste fluid injected into each injection well	mg/l	Monthly
7. Total dissolved solids concentration by chemical analysis of groundwater contained in strata receiving waste fluid injection	mg/l	At least 10 days prior to commencement of injection

<u>Constituents</u>	<u>Units</u>	<u>Reporting Frequency</u>
8. Location and depth of injection well		At least 10 days prior to commencement of injection
9. Calibrated electrical conductivity of flow from tile drain system underlying the area of each well and holding basin.	Micromhos/cm	Daily*, Monday through Friday
10. Within 10 days after the initial discharge of geothermal fluids from a well, the discharger shall report said initial discharge to the Board.		
11. Immediate reporting of any accidental spillage or release of waste material, and also, plan for immediate measures being taken to correct same and to limit detrimental effects.		
12. At least 10 days prior to destruction of any storage basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedure.		
13. Report of completion of removal of all geothermal wastes from storage basins and cleanup of premises - reported within one week following completion of work.		

REPORTING

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

Monthly reports shall be submitted to the Regional Board by the 15th day of the following month. Reports for Item 11 (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

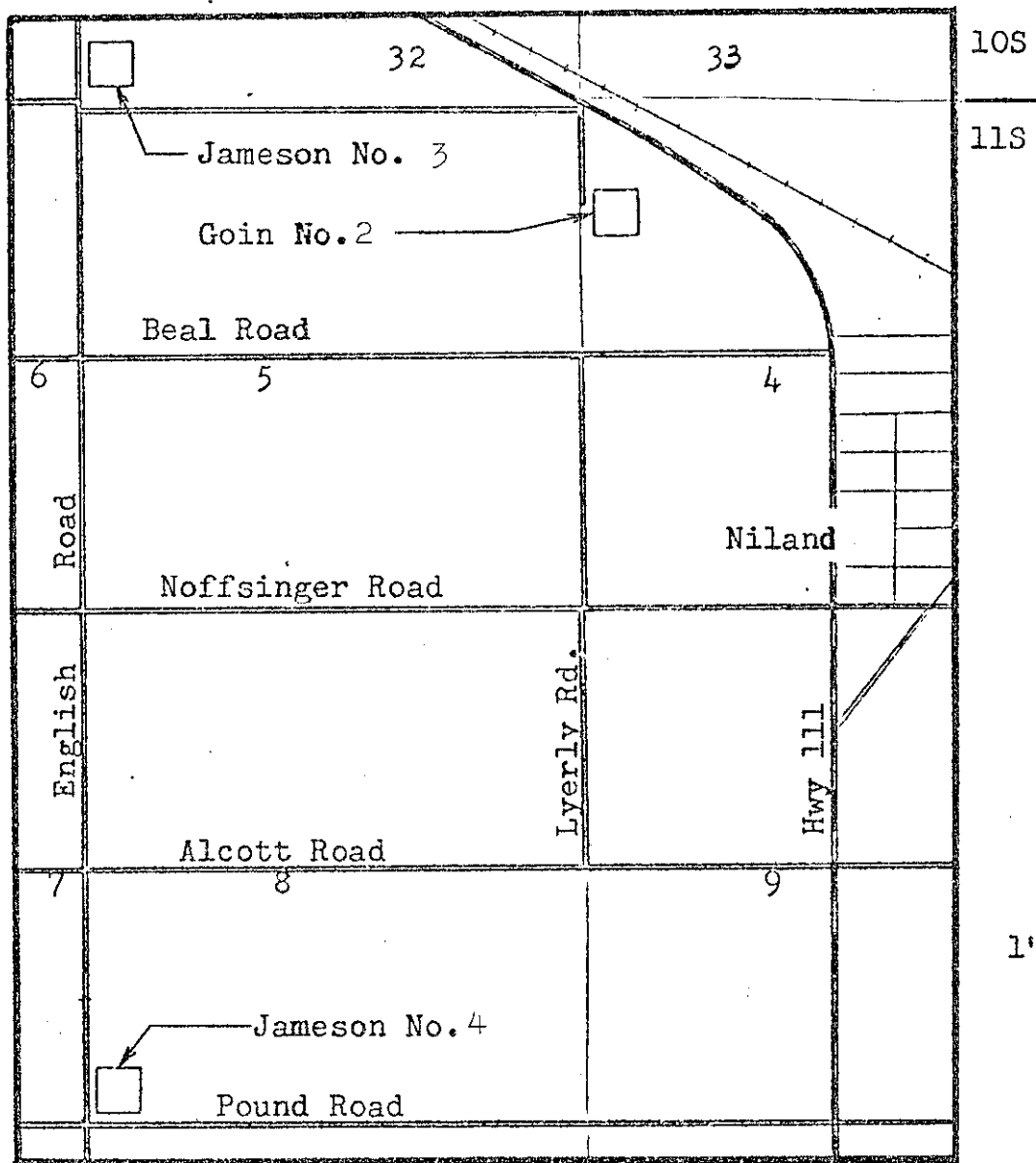
ORDERED BY

Arthur Levajian
Executive Officer

January 26, 1977
Date

*Tile drain monitoring shall commence one (1) week prior to the initial discharge of geothermal fluids into the holding basin, and shall continue until wastes are removed from the basin.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - 7



SCALE:
1" = 2000'

SITE MAP
FOR
REPUBLIC GEOTHERMAL, INC. - NILAND
West of Niland - Imperial County
Section 32, T10S, R14E, SBB&M
Sections 4 and 8, T11S, R14E, SBB&M
U.S.G.S. Niland 7.5 min. Topographic Map

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