

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

ORDER NO. 91-030

WASTE DISCHARGE REQUIREMENTS  
FOR  
REPUBLIC GEOTHERMAL, INC.  
GEOTHERMAL EXPLORATORY DEEP-TEST WELLS  
Southwest of Niland - Imperial County

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

1. Republic Geothermal, Inc., 11823 East Slauson Avenue, Suite 1, Santa Fe Springs, California 90670, California Corporation I.D. No. 708330, (hereinafter also referred to as the discharger), owned and/or operated some geothermal facilities under regulation by Regional Board Order No. 80-031, which was adopted by the Regional Board on May 21, 1980.
2. The existing geothermal facilities in the Primary Project Area as described in the Final Environmental Impact Report (State Clearinghouse Number 82091950) are located at the following sites:

Fee No. 1 and No. 2 Site (formerly Jameson No. 2 site):

NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M

Fee No. 5 and No. 6 Site:

SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M

Britz No. 3 and No. 4 Site:

NW $\frac{1}{4}$ , NW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M

3. In addition to the existing facilities described in Finding No. 2, above, additional sites in the Primary Project Area that may be used for geothermal exploration and development are located at the following sites:

· NW $\frac{1}{4}$ , SW $\frac{1}{4}$  of Section 8, T11S, R14E, SBB&M

· E $\frac{1}{2}$ , SW $\frac{1}{4}$  of Section 8, T11S, R14E, SBB&M

· SW $\frac{1}{4}$  of Section 16, T11S, R14E, SBB&M

· E $\frac{1}{2}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M

· NW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M

· N $\frac{1}{2}$ , SW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M

· S $\frac{1}{2}$  of Section 17, T11S, R14E, SBB&M

· E $\frac{1}{2}$ , NW $\frac{1}{4}$  of Section 20, T11S, R14E, SBB&M

· NE $\frac{1}{4}$  of Section 20, T11S, R14E, SBB&M

· NW $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M

· E $\frac{1}{2}$  of NE $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M

· That portion of the W $\frac{1}{2}$  of Section 22 lying west of the Southern Pacific Railroad right of way

3-11-92  
Revised  
Board Order  
No.  
92-025

4. Due to violations by the discharger of Discharge Specifications No. 3, 7, and 11 of Board Order No. 80-031, Cleanup and Abatement Order No. 89-059 was issued on June 23, 1989. Subsequently, Cleanup and Abatement Order No. 90-051 was issued on July 12, 1990.
5. On May 11, 1990, the discharger submitted a clean up plan to the Regional Board. Upon approval by the Regional Board staff, cleanup operations at the sites described in Finding No. 2, above, commenced. The sites were cleaned up to the satisfaction of the Executive Officer; and on November 19, 1990, a letter was sent from the Executive Officer of the Regional Board to the discharger which rescinded Cleanup and Abatement Order No. 90-051.
6. A Report of Waste Discharge and the applicable fee was received in the Regional Board's office on February 13, 1991.
7. The purpose of this Board Order is to update Board Order No. 80-031 in order to regulate the discharger under current laws and regulations regarding geothermal operations.
8. The Imperial County Planning Department prepared Final Environmental Impact Report (SCH #82091950) for the discharger's Niland Geothermal Energy Project. The Imperial County Planning Department adopted on May 14, 1980, a mitigated Negative Declaration for the geothermal facilities described in Findings No. 2 and 3, above. This Negative Declaration indicates that this project would not have any significant adverse effects on water quality. This Negative Declaration is deemed appropriate for the purposes of updating Board Order No. 80-031. In accordance with Section 15301, Chapter 3, Title 14, of the California Code of Regulations, the issuance of these waste discharge requirements, which govern the operation of an existing facility involving negligible or no expansion of use beyond that previously existing, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.).
9. Geothermal projects on non-Federal lands are also regulated by the California Division of Oil and Gas and applicable federal agencies. The Regional Board and the local District of the Division of Oil and Gas (located in El Centro) have reviewed this project in accordance with the Memorandum of Agreement between the State Water Resources Control Board and the Division of Oil and Gas as originally approved in August 1982, with subsequent amendments approved on May 19, 1988.
10. The Water Quality Control Plan for the Colorado River Basin Region of California designates the beneficial uses of ground and surface waters in this Region.
11. The designated beneficial uses of ground waters in the Imperial Hydrologic Unit are:
  - a. Municipal supply (MUN)
  - b. Industrial supply (IND)

12. Within the Imperial Valley area of the Imperial Hydrologic Unit, much of the ground water is too saline for municipal use. The existing municipal use in this Unit is practically inconsequential.
13. The beneficial uses of waters in the Imperial Valley Drains are:
  - a. Fresh Water Replenishment of Salton Sea (FRSH)
  - b. Noncontact Water Recreation (REC II)
  - c. Warm Water Habitat (WARM)
  - d. Wildlife Habitat (WILD)
  - e. Preservation of Endangered or Threatened Species (END)
14. The primary purpose of drains in the Niland area is for conveyance of drainage in support of agriculture.
15. Geothermal fluids in this portion of the Salton Sea KGRA contain approximately 25% (by weight) dissolvable solids. These fluids may be classified as hazardous in accordance with the criteria listed in Section 66699, Title 22 of the California Code of Regulations.
16. There are no domestic wells within 500 feet of the geothermal exploratory deep-test wells and other geothermal facilities described in Findings No. 2, and 3, above.
17. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for this discharge.
18. The Board in a public meeting heard and considered all comments pertaining to this discharge.

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

Discharge Specifications

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Sections 13050(1) and 13050(m) of Division 7 of the California Water Code.
2. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the geothermal discharge facilities inoperable.
3. The geothermal facilities described in Findings No. 2 and 3, above, shall be protected from any washout or erosion of wastes or covering material, and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years.
4. The discharge of any wastes to any surface waters or surface drainage courses is prohibited.
5. The discharger shall comply with "Monitoring and Reporting Program No. 91-030", and future revisions thereto, as specified by the Regional Board's Executive Officer.

6. Geothermal cleanout fluid, test and production fluid shall be discharged for temporary storage into either:
  - a. Earthen basins with a minimum 6-inch compacted clay lining<sup>1</sup> having a lining permeability of  $1 \times 10^{-6}$  cm/sec. or less.
  - b. Earthen basins lined with a synthetic liner of not less than 40 mil thickness, approved by the Regional Board's Executive Officer, or
  - c. Metal or other type containers approved by the Regional Board's Executive Officer.

All basins and containers shall be constructed, protected, and maintained to ensure their effectiveness.

7. Final disposal of residual wastes and cleanup of all containment basins and sumps shall be accomplished to the satisfaction of the Regional Board's Executive Officer upon abandonment or closure of operations. Lack of construction or operational activity on the site for a period of one year shall constitute abandonment for the purposes of this Board Order.
8. All containment basins shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods having a predicted frequency of once in 100 years.
9. A minimum depth of freeboard of two (2) feet shall be maintained at all times in all containment basins.
10. Additional injection and production wells may be drilled and developed as replacement or makeup wells within the areas described in Findings No. 2, 3, and 8, above, with the prior written approval of the Regional Board's Executive Officer and the Division of Oil and Gas. The wastes associated with such drilling, including the construction of drilling mud sumps, must be in accordance with Discharge Specifications No. 6 and 8 of this Board Order.
11. Fluids discharged by subsurface injection shall be injected into the receiving aquifer under requirements as set forth by the California Division of Oil and Gas.
12. All fluids discharged by subsurface injection shall not be injected into any subsurface aquifer without the approval of the California Division of Oil and Gas.
13. Prior to the disposal of any material removed from the temporary storage basins, well pads or other project locations, the discharger shall inform the Regional Board's Executive Officer concerning the nature and volume of the materials, and the proposed location of disposal.
14. Permanent (longer than 1 year) disposal or storage of geothermal waste in on-site temporary containment basins is prohibited.

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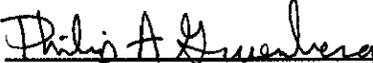
<sup>1</sup>Clay lining shall be defined as at least 40 percent of the material, by weight, passing a No. 200 U.S. Standard Sieve.

15. At least 10 days prior to the initial discharge of any material into a new temporary containment basin, the discharger shall submit a report signed by a California Registered Civil Engineer to the Regional Board advising the Regional Board's Executive Officer that the containment basin and attendant facilities are constructed to meet the requirements of this Board Order.
16. The discharger shall submit a report prepared by a California Registered Civil Engineer to the Regional Board, certifying that the basin is constructed to meet the requirements of this Board Order at least 10 days prior to the discharge of any material into a new basin as defined in Specification No. 6, above.
17. Within 30 days of adoption of this Board Order, the discharger shall submit written adequate assurance to the Regional Board, that financial responsibility for cleanup of the facilities is feasible. This shall be in the form of the latest annual report from the discharger, as well as a Securities and Exchange Commission Form 10-K. Should the Regional Board's Executive Officer determine that the Annual Report and Form 10-K are not adequate to prove financial assurance, then a closure bond of \$100,000 shall be submitted to the Regional Board's office within 60 days from the date of said determination.
18. None of the geothermal fluids may be used on access roads, well pads, or other developed project locations for dust control.
19. Geothermal fluids or 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.
20. Prior to any modifications in this facility which would result in material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the discharger shall report all pertinent information in writing to the Regional Board; and obtain revised requirements before any modifications are implemented.
21. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
22. The discharger shall ensure that all site operating personnel are familiar with the content of this Board Order.

23. This Board Order does not authorize violation of any federal, state, or local laws or regulations.

IT IS FURTHER ORDERED that Board Order No. 80-031 be superseded by this Board Order.

I, Philip A. Gruenberg, 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 May 15, 1991.

  
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Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
 COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 91-030

FOR

REPUBLIC GEOTHERMAL, INC.

GEOTHERMAL EXPLORATORY DEEP-TEST WELLS

Southwest of Niland - Imperial County

Location of Discharge: NW $\frac{1}{4}$ , NE $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
 SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
 NW $\frac{1}{4}$ , NW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M  
 NW $\frac{1}{4}$ , SW $\frac{1}{4}$  of Section 8, T11S, R14E, SBB&M  
 E $\frac{1}{2}$ , SW $\frac{1}{4}$  of Section 8, T11S, R14E, SBB&M  
 SW $\frac{1}{4}$  of Section 16, T11S, R14E, SBB&M  
 E $\frac{1}{2}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
 NW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
 N $\frac{1}{2}$ , SW $\frac{1}{4}$ , NW $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
 NE $\frac{1}{4}$  of Section 17, T11S, R14E, SBB&M  
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 NE $\frac{1}{4}$  of Section 20, T11S, R14E, SBB&M  
 NW $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M  
 E $\frac{1}{2}$  of NE $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M  
 SE $\frac{1}{4}$  of Section 21, T11S, R14E, SBB&M  
 That portion of Section 22 lying west of the Southern  
 Pacific Railroad right of way

1. The discharger shall submit the following information:

<u>Constituent</u>	<u>Unit</u>	<u>Reporting Frequency</u>
a. Volume of discharge contained in each temporary containment basin.	Gallons	Monthly
b. Volume of geothermal waste discharged at a waste management facility, and name of facility.	Gallons	Monthly
c. Total Dissolved Solids concentration and volume of fluid injected into each injection well.	mg/l, Gallons	Monthly
d. Total Dissolved Solids concentration of ground water contained in strata proposed to receive fluid waste injection.	mg/l	At least 10 days prior to commencement of injection
e. Volume of waste fluid injected into each injection well.	Gallons	Monthly

2. Immediate reporting of any accidental spillage or release of waste material, and immediate measures being taken to correct same and to limit detrimental effects.
3. Report of completion of removal of all geothermal waste from temporary storage basins within 10 days of completion of the work.
4. At least 10 days prior to destruction of each temporary storage basin, the discharger shall request a Regional Board staff inspection and approval of the cleanup procedures.

REPORTING

Monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month.

Submit monitoring reports to:

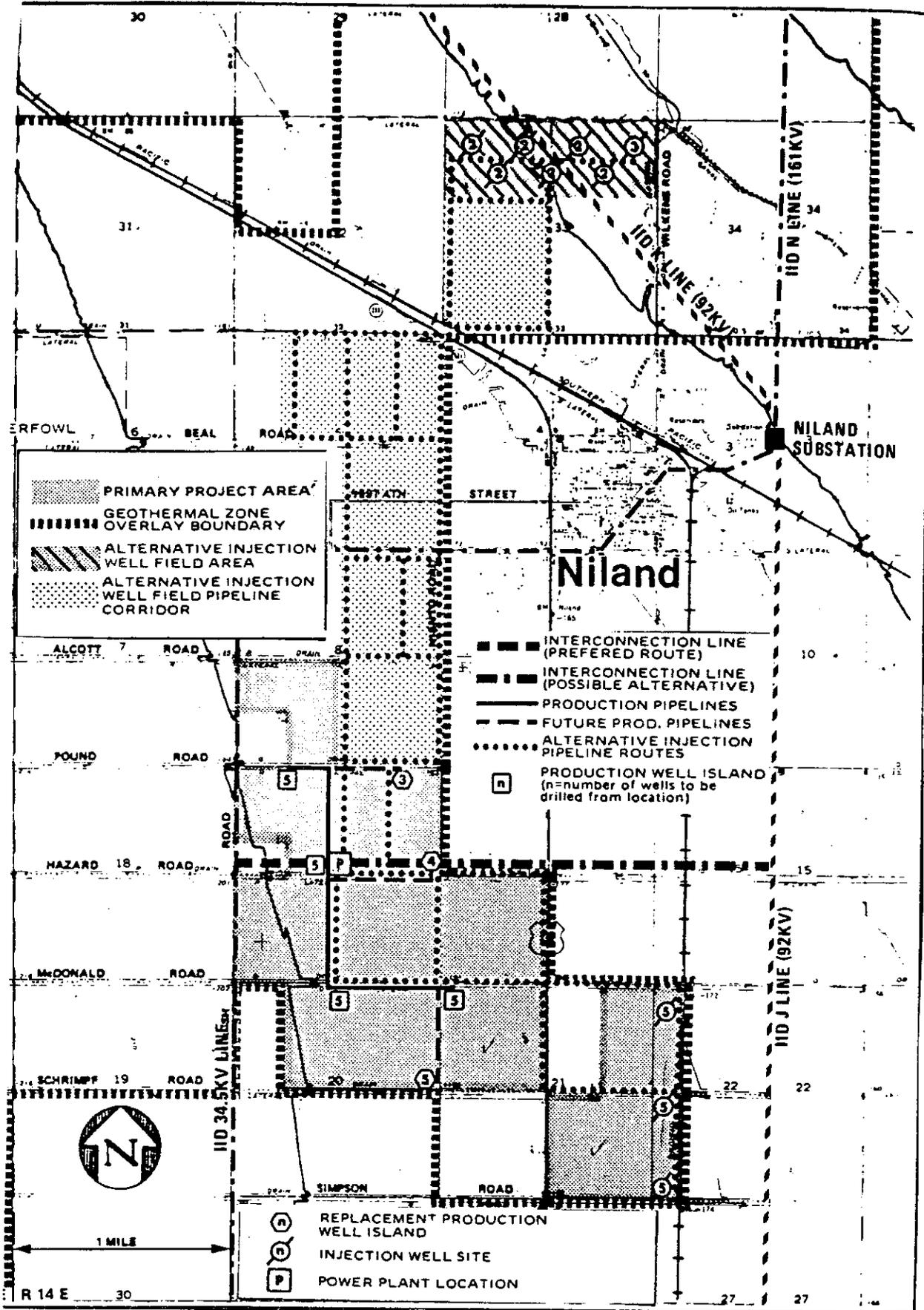
California Regional Water Quality Control Board  
Colorado River Basin Region  
73-271 Highway 111, Suite 21  
Palm Desert, CA 92260

ORDERED BY:

Philip A. Guanter  
Executive Officer

May 15, 1991

Date



SITE MAP

REPUBLIC GEOTHERMAL, INC.  
 GEOTHERMAL EXPLORATORY DEEP-TEST WELLS  
 Southwest of Niland - Imperial County

(See Monitoring and Reporting Program No. 91-030 for Location of Discharge)