CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 00-001
NPDES NO. CA7000003

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
WASTE DISCHARGE REQUIREMENTS
FOR
SECOND IMPERIAL GEOTHERMAL COMPANY (SIGC), OWNER
OGDEN SIGC GEOTHERMAL OPERATIONS, INC., OPERATOR
DISCHARGE OF COOLING TOWER WASTEWATER
South of Heber – Imperial County

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

1. On June 29, 1999, Second Imperial Geothermal Company (SIGC), a California Limited Partnership (hereinafter referred to as the discharger), 855 Dogwood Road, Heber, CA 92249, submitted an application to update its National Pollutant Discharge Elimination System Permit to discharge wastes into the Beech Drain, a water of the United States.

2. The project is a 33-megawatt (MW) binary electrical generation facility and related geothermal well field located south of the town of Heber in Imperial County, as shown on Attachment A, incorporated herein and made a part of this Board Order. The project is located in the Heber Geothermal Unit.

3. Cooling for the binary geothermal electrical units is provided by two six-cell cooling towers that are located at the plant site. SIGC discharges a maximum of 1.5 million gallons-per-day of the cooling tower blowdown water to the Imperial Irrigation District's (IID) Beech Drain in the NE ¼ of Section 4, T17S, R14E, SBB&M. The Beech Drain flows into the New River, also a water of the United States.

4. Chemicals are added to the cooling tower water for pH control purposes and for corrosion, scale, and biological growth inhibition.

5. The discharger uses Colorado River water for cooling tower makeup water. Specifically, the water supply is from IID's Central Main Canal.

6. The NPDES application describes the discharge as follows:

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate[1]	7-Day Arithmetic Mean Discharge Rate[2]	Daily Maximum
Total Suspended Solids	mg/L[3]	50	--	100
Settleable Matter	ml/L[4]	0.3	1.0	--
		30-Day Arithmetic Mean	7-Day Arithmetic Mean	Daily

[1] 30-Day Mean – The arithmetic mean of pollutant parameter values of samples collected in a period for 30 consecutive days as specified in the Monitoring and Reporting Program.
[2] 7-Day Mean - The arithmetic mean of pollutant parameter values of samples collected in a period for 7 consecutive days as specified in the Monitoring and Reporting Program.
[3] mg/L - milligrams-per-Liter
[4] ml/L - milliliters-per-Liter

Constituent	Unit	Discharge Rate	Discharge Rate	Maximum
Chlorine	mg/L	0.01	--	0.02
Flow	MGD[5]	--	--	1.5

7. The discharger adds the following chemicals to the cooling tower water:

Chemicals	Purpose
Sulfuric Acid (H_2SO_4 – 93.19%)	pH Control
Chlorine	Anti-fouling microbiocide
Nalco 1333T liquid (an aqueous blend of acrylate polymer and organic phosphorous)	To prevent scaling and fouling
73202 Cooling Water Dispersant (a modified Polyacrylate)	To disperse calcium phosphate, silt, calcium carbonate, and suspended solids
Nalco 1326 Corrosion Inhibitor (an aqueous solution of sodium tolyltriazole)	To prevent corrosion of the copper components
Nalco 7396 Water stabilization (an aqueous solution of Pyrophosphate)	Corrosion inhibitor (mild steel)
Nalco 7320 Microbiocide (microorganism control chemical) Ingredients: 2,2-dibromo-3-nitrilo-pionamide Dibromoacetonitrile	Microbiocide control
Nalsperse 7348 Biodispersant microbiological agent (a surfactant blend)	To prevent fouling by removing any deposits
Nalcoclyte 8103 Coagulant (an aqueous solution of a Polyquaternary amine)	Used as a cationic coagulant to reduce solids
Chemco 5468 (Proprietary water treatment containing Phosphoric Acid)	To control ferrous metal corrosion, corrosion of copper alloys, and scale formation
Stabrex ST70 (an aqueous solution of alkaline liquid bromine antimicrobial)	To control microbiological organisms

Chemicals	Purpose
Visco 3656 Oxygen Scavenger (highly active ammonium bisulfite solution)	To prevent oxygen corrosion

[5] MGD – Million Gallons-per-Day

Nalco 7905 (an aqueous solution of ammonium bisulfite)	To scavenge halogens from the discharge water

8. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993, and designates the beneficial uses of ground and surface waters in this Region.

9. The beneficial uses of waters in the Imperial Valley Drains are:

   a. Fresh Water Replenishment of Salton Sea (FRSH)
   b. Water Contact Recreation (REC I)[6], [7]
   c. Noncontact Water Recreation (REC II)[6]
   d. Warm Water Habitat (WARM)
   e. Wildlife Habitat (WILD)
   f. Preservation of Rare, Endangered or Threatened Species (RARE)[8]

10. The beneficial uses of water of the New River are:

   a. Fresh Water Replenishment of Salton Sea (FRSH)
   b. Water Contact Recreation (REC I)[9]
   c. Noncontact Water Recreation (REC II)
   d. Warm Water Habitat (WARM)
   e. Wildlife Habitat (WILD)
   f. Preservation of Rare, Endangered or Threatened Species (RARE)

11. The primary purpose of drains in the Imperial Valley is for conveyance of drainage in support of agriculture.

12. The discharge from SIGC has been subject to waste discharge requirements adopted in Board Order No. 93-007, NPDES No. CA7000003.

13. The U.S. Environmental Protection Agency adopted the National Toxics Rule (NTR) on February 5, 1993. This rule mandates effluent limitations for all pollutants that are, or could be discharged at levels that may cause, or have reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Considering the information submitted as part of the application, in studies, and as directed by the Monitoring and Reporting Program, the Regional Board staff finds that the discharge does not have the potential to cause or contribute to an in-stream excursion above water quality objectives.

14. The proposed discharge is consistent with the anti-degradation provisions of 40 CFR 131.112 and State Water Resources Control Board Resolution 68-18. If terms of the Board Order are met, the impact on water quality would be insignificant, including potential impacts on aquatic life, which is the beneficial use most likely affected by pollutants discharged.

15. The action to adopt an NPDES Board Order is exempt from the provisions of the California Environmental Quality Act (CEQA: Public Resources Code Section 21100, et. seq.), pursuant to Section 13389 of the California Water Code.

[6] Unauthorized use.
[7] The only REC 1 usage that is known to occur is from infrequent fishing activity.
[8] Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Board.
[9] Although some fishing occurs in the downstream reaches, the presently contaminated water in the river makes it unfit for any recreation use. An advisory has been issued by the Imperial County Health Department warning against the consumption of any fish caught from the river and the river has been posted with advisories against any body contact with the water.

16. Effluent and receiving water limitations in this Board Order are based on the Federal Clean Water Act, Basin Plan and State Water Resources Control Board's plans and policies, U.S Environmental Protection Agency guidance, best professional judgment, and best available technology economically achievable.

17. The U.S. Environmental Protection Agency and the Regional Board have classified this discharge as a major discharge.

18. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for said discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.

19. The Board in a public meeting heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that Board Order No. 93-007 is terminated, and 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, the discharger shall comply with the following:

A. Effluent Limitations

1. Effluent discharged to Beech Drain shall not contain constituents in excess of the following limits:

Constituent	Unit	30-Day Arithmetic Mean Discharge Rate	Daily Maximum
Total Suspended Solids (TSS)	mg/L	50	100
	lbs/day[10]	626	1252
Settleable Matter	ml/L	0.3	1.0
Chlorine	mg/L	0.01	0.02
Flow	MGD	--	1.5

2. The inverse log of the hydrogen ion (pH) of the effluent shall be maintained within the limits of 6.0 to 9.0.
3. The discharged effluent's temperature shall not adversely impact the beneficial uses of the Beech Drain.

4. The effluent shall not contain heavy metals, chemicals, pesticides, or other constituents in concentrations toxic to aquatic life.

5. There shall be no acute toxicity in the cooling tower effluent discharged to Beech Drain. Acute toxicity is defined as less than ninety percent survival, fifty percent of the time, and less than seventy percent survival, ten percent of the time, of standard test organisms in undiluted effluent in a 96-hour static or continuous-flow test.

B. Receiving Water Limitations

[10] Based upon a maximum effluent flow of 1.5 mgd. At lower flows, the discharge rates shall not exceed allowable discharge rates based on actual flows.

1. Receiving water limitations are based upon water quality objectives contained in the Basin Plan. As such they are a required part of this Board Order. The discharge shall not cause the following conditions to exist in the Beech Drain:

   a. The dissolved oxygen content of Beech Drain to be depressed below 5.0 mg/L. During any period when the receiving water's dissolved oxygen content is already below 5.0 mg/L, the discharge shall not cause any further depression.

   b. Oil, grease, wax, floating material (liquids, solids, foam, and scum) or suspended material in amounts that create a nuisance or adversely affect beneficial uses.

   c. Result in the deposition of objectionable solids.

   d. Turbidity to increase by more than 10 percent over background levels.

   e. The normal ambient pH to fall below 6.0 or exceed 9.0 units.

   f. Cause an increase in aquatic growth to the extent that such growths cause a nuisance or adversely affect beneficial uses.

   g. Objectionable color and/or odor.

   h. The maximum electrical conductivity to exceed background levels.

   i. Violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Board will revise and modify the Board Order in accordance with such more stringent standards.

C. Prohibitions

1. Discharge of blowdown water at a location or in a manner different from that described in Finding No. 3, above, is prohibited.

D. Specifications

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Sections 13050(l) and 13050(m) of Division 7 of the California Water Code.

2. The facility shall be protected from any washout or erosion of waste or covering material and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years.

3. The discharger shall not cause degradation of any beneficial use of surface or ground water.

4. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal area.

E. Provisions

1. If the discharge consistently exceeds the applicable chronic or acute toxicity limitations, a toxicity reduction evaluation (TRE) is required. The TRE shall include all reasonable steps to identify the source(s) of toxicity. Once the source(s) of toxicity is identified, the discharger shall take all reasonable steps necessary to reduce toxicity to the required level.

2. Any proposed change in corrosion control or biological control treatment(s) utilized in the cooling towers and a listing of any of U.S. Environmental Protection Agency's 126 priority pollutants contained in the treatments shall be reported to the Regional Board.

3. Prior to any modifications at 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 in writing to the Regional Board's Executive Officer.

4. The discharger shall report all intentional or accidental spills exceeding 1,000 gallons and also any non-compliance that could endanger human health or the environment within 24 hours of becoming aware of its occurrence. The incident shall be reported to the Regional Board Office **and** to the Office of Emergency Services. During non-business hours, the discharger shall leave a message on the Regional Board's voice mail. A written report shall be submitted to this office within five business days of the discharger becoming aware of the incident. This report shall contain a description of the non-compliance, its causes, the duration, and the actual or anticipated time for achieving compliance. The report shall include complete details of the steps that the discharger has taken, or intends to take, in order to prevent recurrence.

5. Within 90 days of the issuance of this Board Order, the discharger shall submit a Spill Response Plan (SRP) for Regional Board staff review. Thereafter, the plan shall be updated annually, and shall be available for staff review during Regional Board inspections. The discharger shall ensure that all operating personnel are familiar with the contents of the SRP. A copy of the SRP shall be maintained at the site and shall be accessible to all operating personnel.

6. 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.

7. The discharger shall ensure that all site-operating personnel are familiar with the contents of this Board Order, and shall maintain a copy of this Board Order at the site.

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

9. The discharger may be required to submit technical reports as directed by the Regional Board's Executive Officer.

10. All storm water discharges from this facility must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies, regarding discharges of storm water to storm drain systems or other courses under their jurisdiction.

11. Compliance with the effluent limitations contained in this Board Order shall be determined at an appropriate point located at the end of the discharge pipe.

12. The discharger shall comply with "Standard Provisions for National Pollutant Discharge Elimination System Permit" dated October 1990.

13. This Board Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Federal Clean Water Act, as amended, and shall become effective at the end of ten days from the date of the hearing at which this Board Order was adopted by the Regional Board, provided the Regional Administrator, U.S. Environmental Protection Agency, has no objections.

14. 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 Federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Regional Board will revise and modify this Board Order in accordance with such more stringent standards.

15. The discharger shall comply with the attached "Monitoring and Reporting Program No. 00-001", and future revisions thereto, as specified by the Regional Board's Executive Officer, and be in accordance with the following:

    a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. All monitoring must be conducted according to test procedures approved under 40 CFR Part 136 or as specified in this Board Order.

c. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements.
2. The individual(s) who performed the sampling or measurements.
3. The date(s) analyses were performed.
4. The individual(s) who performed the analyses.
5. The results of such analyses.

16. This Board Order shall be modified or, alternatively, revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Section 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act.

17. This Board Order may be reopened to address any new amendments to applicable Water Quality Control Plans that would affect the requirements for the discharge.

18. The discharger shall comply with all conditions of this Board Order. Non-compliance constitutes a violation of the Federal Clean Water Act, and is grounds for enforcement action, for Permit termination, revocation and reissuance, or modification, or denial of a Permit renewal application.

19. This Board Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for a Board Order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance does not stay any Board Order condition. Causes for modification include the promulgation of new regulations, modification of land application plans, or modification in sludge use or disposal practices, or adoption of new regulations by the State Board or the Regional Board, including revisions to the Basin Plan.

20. The Federal Clean Water Act provides that any person who violates a Board Order condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Federal Clean Water Act is subject to a civil or criminal penalty.

21. The discharger is the responsible party for the waste discharge requirements and the monitoring and reporting program for the facility. The discharger shall comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board Orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board.

22. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the U.S. Environmental Protection Agency.

23. This Board Order expires five years from date of adoption, and the discharger shall file a complete Report of Waste Discharge in accordance with Title 23, California Code of Regulations, at least 180 days in advance of such date as an application for issuance of a new 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 April 12, 2000 .

Original signed by/
Executive Officer