Alan C. Lloyd, Ph.D.
Agency Secretary

California Regional Water Quality Control Board
Colorado River Basin Region

Arnold Schwarzenegger
Governor

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ORDER NO. R7-2005-0066
NPDES NO. CA0104965

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Heber Geothermal Company and Ormat Nevada Inc.
Name of Facility	Heber Geothermal Company, Heber
Facility Address	895 Pitzer Road
	Heber, CA 92249
	Imperial County

The Discharger is authorized to discharge from the following discharge points as set forth below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Cooling tower blowdown and steam condensate	32 º, 42', 32" N	115º, 30', 29" W	Strout Drain

This Order was adopted by the Regional Board on:	**June 29, 2005**
This Order shall become effective on:	**June 29, 2005**
This Order shall expire on:	**June 29, 2010**
The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements	

IT IS HEREBY ORDERED, that Order No. 00-072 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Robert E. Perdue, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on **June 29, 2005.**

Robert E. Perdue, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
REGION 7, COLORADO RIVER BASIN REGION

ORDER NO. R7-2005-0066
NPDES NO. CA0104965

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I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Heber Geothermal Company and Ormat Nevada Inc.
Name of Facility	Heber Geothermal Company
Facility Address	895 Pitzer Road
	Heber, CA 92249
	Imperial County
Facility Contact and Phone	Sergio Cabanas, (760) 353-9630
Mailing Address	947 Dogwood Road Heber, CA 92249
Type of Facility	Geothermal Power Plant
Facility Design Flow	4.3 million gallons per day (mgd)

II. FINDINGS

The California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Board), finds:

A. **Background.** Heber Geothermal Company (Owner) and Ormat Nevada Inc. (Operator) (hereinafter referred to as the Discharger) submitted a Report of Waste Discharge, dated December 23, 2004, and applied for a National Pollutant Discharge Elimination System (NPDES) permit renewal to discharge up to 4.3 million gallons per day (mgd) of untreated wastewater from Heber Geothermal Company facility (hereinafter referred to as the facility). The application was deemed complete on February 17, 2005.

B. **Facility Description.** Heber Geothermal Company facility, a 52-megawatt (MW) geothermal power plant, is owned by Heber Geothermal Company and operated by Ormat Nevada, Inc. The facility consists of 11 production wells, 10 injection wells, two high-pressure vessels, two low-pressure vessels, a single turbine/generator unit, and cooling towers. The facility discharges untreated contact cooling water blowdown and condensed steam from Discharge Point 001 (see table on cover page) to Strout Drain, a water of the United States within the Imperial Hydrologic Unit. Attachment B provides a topographic map of the area around the facility. Attachment C provides a schematic of the circulating water system at the facility.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

D. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through G, which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

E. **California Environmental Quality Act (CEQA).** This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

F. **Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR § 122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. **Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.

USEPA approved the State's 2002 303(d) list of impaired water bodies on July 25, 2003. According to the 2002 303(d) list, the Imperial Valley Drains are impaired for sediment/silt, pesticides, and selenium. A sedimentation/siltation total daily maximum load (TMDL) for the Alamo River to which Strout Drain flows was approved by the USEPA in June 2002. This Order implements the waste load allocations required by the sedimentation/siltation TMDL.

H. **No More Stringent than Federal Law.** This Order contains restrictions on individual pollutants that are no more stringent than required by the federal Clean Water Act. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations are discussed in detail in the Fact Sheet (Attachment F). Restrictions on technology-based effluent limits are specified in federal regulations as stated in Findings F. Technology-based Effluent Limitations. and detailed in the Fact Sheet, and the permit's technology-based pollutant restrictions are no more stringent than required by the Clean Water Act. Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 C.F.R. 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 1, 2001. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 C.F.R. 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

I. **Water Quality Control Plans.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. Beneficial uses applicable to Strout Drain, a part of the Imperial Valley Drains, are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Strout Drain (Imperial Valley Drains)	Existing: Freshwater replenishment (FRESH), Water Contact Recreation (REC I)[1,2], non-contact water recreation (REC-2)[1], warm freshwater habitat (WARM); wildlife habitat (WILD), Preservation of Rare, Threatened or Endangered Species (RARE)[3].

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

J. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

K. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*)*. The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

L. **Alaska Rule.** On March 30, 2000, U.S. EPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for Clean Water Act (CWA) purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under U.S. EPA's new regulation (also known as the Alaska rule), new and revised standards submitted to U.S. EPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to U.S. EPA by May 30, 2000, may be used for CWA purposes, whether or not approved by EPA.

M. **Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does include compliance schedules and interim effluent limitations. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) is included in the Fact Sheet, Attachment F.

[1] Unauthorized Use.
[2] The only REC1 usage that is known to occur is from infrequent fishing activity.
[3] 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.

N. **Anti-Degradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.

O. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

P. **Monitoring and Reporting.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

Q. **Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR §§122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

R. **Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.

S. **Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in Finding II.B above, is prohibited.

B. The discharge shall not cause degradation of any water supply.

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

D. The discharge of oil, trash, industrial waste sludge, or any other solids directly to the wastewater at this facility or in any manner that allows it to be washed to surface waters of the Region is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations - Discharge Point 001

a. The discharge of cooling tower blowdown and steam condensate shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the attached Monitoring and Reporting Program (Attachment E):

Constituent	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	4.3			
pH	standard units			6.0	9.0
Chlorine Residual	mg/L	0.01			0.02
Total Dissolved Solids	mg/L		4500		
	lbs/day[1]		161,379		
Total Suspended Solids	mg/L	10	14		
	lbs/day[1]	359	502		
Chromium VI[2,3]	µg/L	8.1	16.3		
	lbs/day[1]	0.29	0.58		
Copper[2,3]	µg/L	2.8	5.8		
	lbs/day[1]	0.10	0.21		
Mercury[2,3]	µg/L	0.05	0.10		
	lbs/day[1]	0.002	0.004		
Nickel[2,3]	µg/L	6.8	14		
	lbs/day[1]	0.24	0.50		
Thallium[3]	µg/L	6.3	13		
	lbs/day[1]	0.23	0.47		
Zinc[2,3]	µg/L	52	95		
	lbs/day[1]	1.9	3.4		

[1] Based on a flow of 4.3 mgd
[2] Total Recoverable
[3] Limitations are applicable after May 18, 2010. The interim limitations establish in Section IV.A.2 are applicable from June 29, 2005 through before May 18, 2010.

b. There shall be no acute or chronic toxicity in the plant effluent nor shall the plant effluent cause any acute or chronic toxicity in the receiving water. All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, or bioassays of appropriate duration or other appropriate methods specified by the Regional Board.

c. The annual average concentration of total dissolved solids (TDS) in the discharge of wastewater shall be limited to 4,000 mg/L

2. Interim Effluent Limitations

a. During the period beginning **June 29, 2005** and ending on **June 29, 2010**, the discharge of cooling tower blowdown and steam condensate shall maintain the following limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the attached Monitoring and Reporting Program (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

Constituent	Units	Interim Effluent Limitations	
		Monthly Average	Maximum Daily
Chromium (VI)[1]	µg/L	30	30
	lbs/day[1]	1.08	1.08
Copper[1]	µg/L	20	20
	lbs/day[1]	0.72	0.72
Mercury [1]	µg/L	0.2	0.2
	lbs/day[1]	0.007	0.007
Nickel[1]	µg/L	10	14
	lbs/day[1]	0.36	0.50
Thallium[1]	µg/L	70	70
	lbs/day[1]	2.5	2.5
Zinc[1]	µg/L	112	120
	lbs/day[1]	4.02	4.3

[1] Based on a flow of 4.3 mgd

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications - Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

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

   a. Depress the concentration of dissolved oxygen to fall below 5.0 mg/L. When dissolved oxygen in the receiving water is already below 5.0 mg/L, the discharge shall not cause any further depression.

   b. The presence of oil, grease, 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 pesticides or combination of pesticides detectable in concentrations that adversely affect beneficial uses.

   d. Discoloration in the receiving water that adversely affects beneficial uses.

   e. Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

   f. Increase turbidity that results in adversely affecting beneficial uses.

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

   h. The natural receiving water temperature of surface waters shall not be altered by discharges of wastewater unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

   i. Result in the deposition of material that causes nuisance or adversely affects beneficial uses.

   j. No individual chemical or combination of chemicals shall be present in concentrations that adversely affect beneficial uses.

   k. Toxic pollutants to be present in the water column, sediments or biota in concentrations that adversely affect beneficial uses or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

   l. Taste or odor-producing substances the adversely affect beneficial uses.

2. 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 Permit in accordance with such more stringent standards.

B. Groundwater Limitations

The discharge shall not cause the underlying groundwater to be degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Board Standard Provisions.** The Discharger shall comply with the following provisions:

   a. The facility 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.

   b. The discharger shall comply with all conditions of this Board Order. Noncompliance constitutes a violation of the Federal Clean Water Act and Porter-Cologne Water Quality Control Act, and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification of waste discharge requirements; or denial of a Permit renewal application.

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

   d. The discharger shall report any noncompliance that may endanger human health or the environment. The discharger shall immediately report orally information of the noncompliance as soon as (1) the discharger has knowledge of the discharge, (2) notification is possible, and (3) notification can be provided without substantially impeding cleanup or other emergency measures, to the Regional Board office and the Office of Emergency Services. During non-business hours, the discharger shall leave a message on the Regional Board office voice recorder. A written report shall also be provided within five (5) business days of the time the discharger becomes aware of the incident. The written report shall contain a description of the noncompliance and its cause, the period of noncompliance, the anticipated time to achieve full compliance, and the steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance. The discharger shall report all intentional or unintentional sewage spills in excess of one thousand (1,000) gallons occurring within the facility or collection system to the Regional Board office in accordance with the above time limits.

   e. 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.

   f. The discharger shall provide adequate notice to the Regional Board's Executive Officer of the following:

      1) Any substantial change in the volume or character of pollutants being introduced into the facility's operations and cooling water system described in the Findings of this Board Order by an existing or new source.

      2) Any planned physical alterations or additions to the facility's processes and wastestreams described in this Board Order.

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

B. Monitoring and Reporting Program Requirements

The discharger shall comply with Monitoring and Reporting Program, and future revisions thereto as specified by the Regional Board's Executive Officer, found in Attachment E of this Order.

C. Special Provisions

1. Re-opener Provisions

a. The discharger shall submit data sufficient to determine if a water quality–based effluent limitation is required in the discharge permit as required under the SIP. It is the discharger's responsibility to provide all information requested by the Regional Board for use in the analysis. The permit shall be reopened to establish water quality-based effluent limitations, if necessary.

b. The permit shall be reopened and modified or revoked and reissued as a result of the detection of a reportable priority pollutant identified by special conditions' monitoring data, included in this permit. These special conditions in the permit may be, but are not limited to, fish tissue sampling, whole effluent toxicity tests, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in the permit as a result of the special condition monitoring data.

c. This Board Order may be modified, rescinded and reissued, for cause. The filing of a request by the discharger for a Board Order modification, rescission and reissuance, or a notification of planned changes or anticipated noncompliance 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.

d. The permit may be reopened and modified or revoked and reissued to add findings, limitations and other requirements necessary pending the findings from the implementation of Cleanup and Abatement Order (Order No. R7-2004-0099) issued on November 10, 2004.

e. TMDLs for pesticides and selenium are to be developed by the Regional Board. The permit may be reopened and modified in future to include appropriate requirements necessary to fully implement the approved TMDL if needed.

f. This Order may be reopened and the Whole Effluent Toxicity (WET) Testing Requirements contained in the Attachment E, Monitoring and Reporting Program, Section V modified to address changes to USEPA or State Water Board policies or guidance regarding the testing or reporting requirements for WET testing.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Identification Evaluations or Toxicity Reduction Evaluations.** The discharger shall submit to the Regional Board a toxicity reduction evaluation (TRE) workplan (1-2 pages) **within 90 days** of the effective date of this permit. This plan shall describe the steps the permittee intends to follow in the event that toxicity is detected, and should include at a minimum:

1) A description of the investigation and evaluation techniques that will be used to identify potential causes/sources of toxicity, effluent variability, and treatment system efficiency;

2) A description of the facility's method of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility;

3) If a toxicity identification evaluation (TIE) is necessary, who will conduct it (i.e., in-house or outside consultant).

b. **Translator Study.** In addition, should the discharger request to use a translator for metals and selenium different than the USEPA conversion factor, it shall complete a translator study within two years from the date of the issuance of this permit as stated in the California Toxics Policy. In the event a translator study is not completed within the specified time, the USEPA conversion factor-based effluent limitation as specified in the CTR shall be effective as a default limitation.

c. **Pollutant Minimization Study.** In accordance with Section 2.4.5 of the SIP the Discharger shall conduct a Pollutant Minimization Program as specified in Special Provision VI.C.4.c of this Order when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

1) A sample result is reported as DNQ and the effluent limitation is less than reported ML; or
2) A sample is reported as ND and the effluent limitation is less than the MDL.

Evidence that a priority pollutant may be present includes, but is not limited to, sample results reported as DNQ, when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods included in this Order in accordance with the SIP, presence of whole effluent toxicity, health advisories for fish consumptions, and results of benthic or aquatic organism tissue sampling.

3. Best Management Practices and Pollution Prevention

Best Management Practices Plan. The Discharger shall develop and implement a Best Management Practice Plan (BMPPs) **within 90 days** of the effective date of this Order that entails site-specific plans, procedures, and practices to minimize the amount of pollutants entering wastewater and storm water discharges from materials being stored and activities being conducted throughout the entire facility. The discharger shall consider Best Management Practices (BMPs) contained in the USEPA *Guidance Manual for Developing BMPs* (EPA 833-B-93-004) or equivalent alternatives when developing the BMPP.

4. Compliance Schedules

a. **Compliance Plan.** The Discharger shall implement its compliance plan provided with its Infeasibility Report submitted on February 17, 2005 that identified the measures that will be taken to reduce the concentrations of chromium VI, copper, mercury, nickel, thallium and zinc in their discharge to achieve compliance with the permit limitations specified in Effluent Limitations, IV.A.1.a of this Order.

b. **Compliance Plan Annual Reports.** The Discharger shall submit annual progress reports to describe the progress of studies and or actions undertaken to reduce chromium (VI), copper, mercury, nickel, thallium, and zinc in the effluent, and to achieve compliance with the limitations in this Order by the deadline specified in Interim Effluent Limitations Section IV.A.2.a of this Order. The Regional Board shall receive the first annual progress report at the same time the annual summary report is due, as required in Attachment E, Reporting Requirements Section X.D of the MRP.

c. **Pollutant Minimization Plan (PMP).** When required to develop a Pollutant Minimization Program (PMP) in accordance with Special Provision VI.C.2.c of this Order, the Discharger shall develop a PMP in accordance with Section 2.4.5.1 of the SIP.

The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality based effluent limitations specified in Sections IV.A.1.a. and IV.A.2.a of this Order. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Board:

1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

2) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

3) Implementation of appropriate cost-effective control measures consistent with the control strategy;

4) An annual status report that shall be sent to the Regional Board at the same time the annual summary report is submitted in accordance with Attachment E, Reporting Requirements Section X.D of the MRP, and include:

   (a) All PMP monitoring results for the previous year

   (b) A list of potential sources of chromium (VI), copper, mercury, nickel, thallium, and zinc

   (c) A summary of all actions undertaken pursuant to the control strategy

   (d) A description of actions to be taken in the following year.

5. Construction, Operation and Maintenance Specifications

a. **Facility and Treatment Operation.** The discharger shall, at all times, properly operate and maintain all systems and components of collection, treatment and control which are installed or used by the discharger to achieve compliance with the conditions of this Board Order. Proper operation and maintenance includes effective performance, adequate process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Board Order. All systems both in service and reserved, shall be inspected and maintained on a regular basis. Records shall be kept of the inspection results and maintenance performed and made available to the Regional Board upon demand.

b. **Spill response Plan**. The discharger shall review its current Spill Response Plan (SRP) developed under previous Order 00-072 and revise if needed **within 60 days** after the effective date of this Order. Revised plans shall be submitted 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. Special Provisions for Municipal Facilities (POTWs Only) - Not Applicable

7. Other Special Provisions

a. No changes in the type or amount of treatment chemicals added to the process water shall be made without the written approval of the Regional Board's Executive Officer.

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

VII. COMPLIANCE DETERMINATION

A. Water Quality-Based Effluent Limits

1. In accordance with Section 2.4.5 of the SIP, compliance with water quality-based effluent limitations shall be determined as follows:

   a. Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

   b. When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

      1) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

      2) The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

      If a sample result, or the arithmetic mean or median of multiple sample results, is below the reported ML, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in Special Provisions Section VI.C.4.c of this Order), the discharger shall not be deemed out of compliance.

B. Average Monthly Effluent Limitation (AMEL).

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

C. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

D. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

E. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

ATTACHMENT A – DEFINITIONS

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

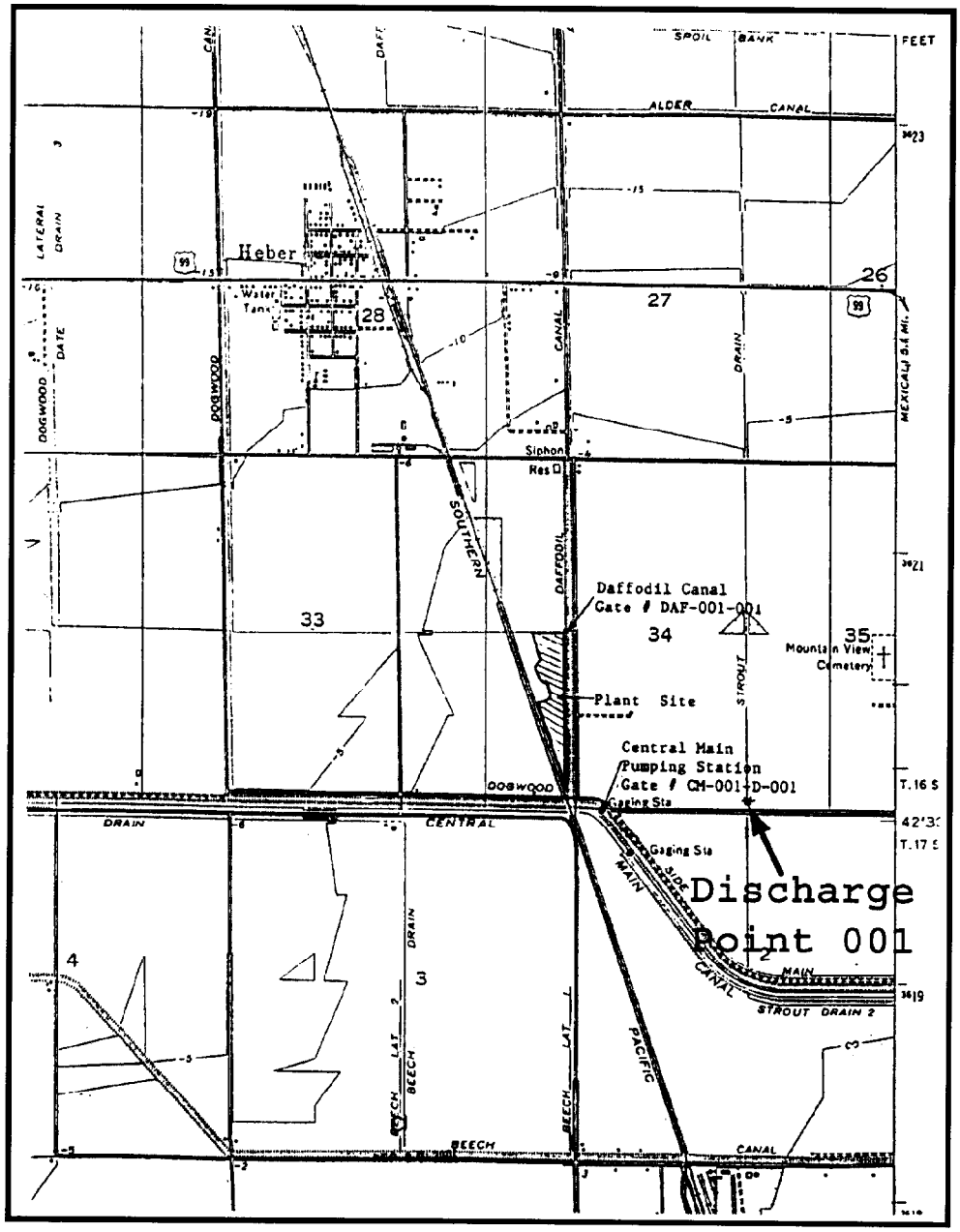
For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Instantaneous Maximum Effluent Limitation: : the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

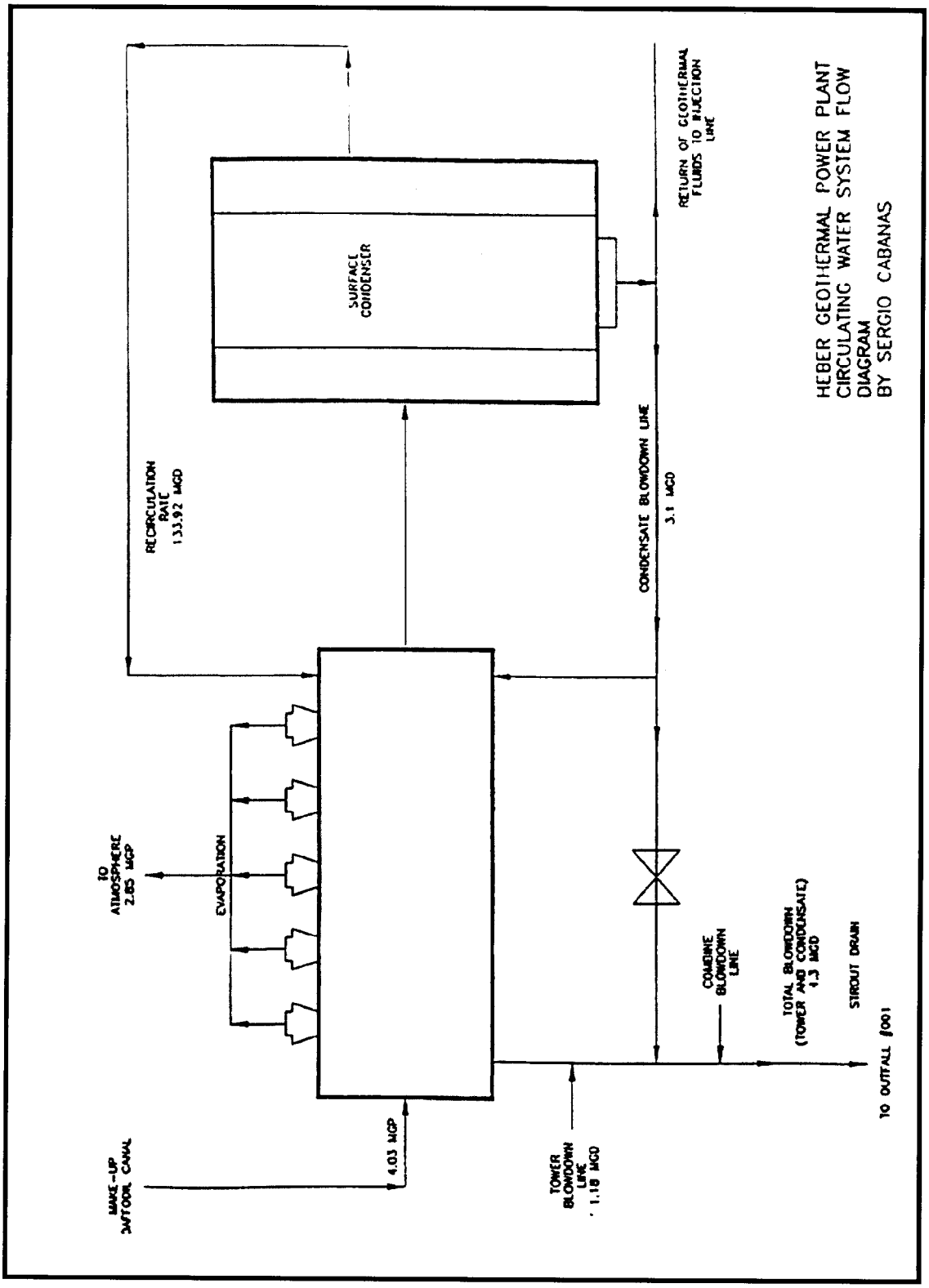
ATTACHMENT B – TOPOGRAPHIC MAP



HERBER GEOTHERMAL COMPANY AND
ORMAT NEVADA, INC.
HEBER GEOTHERMAL COMPANY
Heber - Imperial County
Facility Location - S½ of Section 34, T16S, SBB&M
Discharge Strout Drain - N32º 42' 32" W115º 30' 29"

Board Order No. R7-2005-0066

ATTACHMENT C – CIRCULATING WATER SYSTEM FLOW SCHEMATIC



ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. FEDERAL STANDARD PROVISIONS

A. Standard Provisions – Permit Compliance

1. Duty to Comply

a. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application. [*40 CFR §122.41(a)*]

b. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement. [*40 CFR §122.41(a)(1)*]

2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. [*40 CFR §122.41(c)*]

3. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. [*40 CFR §122.41(d)*]

4. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. [*40 CFR §122.41(e)*]

5. Property Rights

a. This Order does not convey any property rights of any sort or any exclusive privileges. [*40 CFR §122.41(g)*]

b. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. [*40 CFR §122.5(c)*]

6. Inspection and Entry

The Discharger shall allow the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [*40 CFR §122.41(i)*] [*CWC 13383(c)*]:

a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [*40 CFR §122.41(i)(1)*];

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [*40 CFR §122.41(i)(2)*];

c. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [*40 CFR §122.41(i)(3)*];

d. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. [*40 CFR §122.41(i)(4)*]

7. Bypass

a. Definitions

(1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. [*40 CFR §122.41(m)(1)(i)*]

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. [*40 CFR §122.41(m)(1)(ii)*]

b. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance A.7.c. and A.7.e below [*40 CFR §122.41(m)(2)*]

c. Prohibition of bypass – Bypass is prohibited, and the Regional Board may take enforcement action against a Discharger for bypass, unless [*40 CFR §122.41(m)(4)(i)*]:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; [*40 CFR §122.41(m)(4)(A)*];

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; [*40 CFR §122.41(m)(4)(B)*]; and

(3) The Discharger submitted notice to the Regional Board as required under Standard Provision A.7.e below. [*40 CFR §122.41(m)(4)(C)*]

d. The Regional Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance A.7.c. above. [*40 CFR §122.41(m)(4)(ii)*]

e. Notice

(1) Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. [*40 CFR §122.41(m)(3)(i)*]

(2) Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting E.5. below. [*40 CFR §122.41(m)(3)(ii)*]

8. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. [*40 CFR §122.41(n)(1)*]

a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 8.b of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. [*40 CFR §122.41(n)(2)*]

b. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [*40 CFR §122.41(n)(3)*]:

(1) An upset occurred and that the Discharger can identify the cause(s) of the upset [*40 CFR §122.41(n)(3)(i)*];

(2) The permitted facility was, at the time, being properly operated [*40 CFR §122.41(n)(3)(i)*];

(3) The Discharger submitted notice of the upset as required in Standard Provisions – Reporting E.5.b(2). [*40 CFR §122.41(n)(3)(iii)*]; and

(4) The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance A.3. above. [*40 CFR §122.41(n)(3)(iv)*].

c. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [*40 CFR §122.41(n)(4)*].

B. Standard Provisions – Permit Action

1. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. [*40 CFR §122.41(f)*]

2. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. [*40 CFR §122.41(b)*]

3. Transfers

This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC. [*40 CFR §122.41(l)(3)*] [*40 CFR §122.61*]

C. Standard Provisions – Monitoring

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [*40 CFR §122.41(j)(1)*]

2. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the-case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. [*40 CFR §122.41(j)(4)*] [*40 CFR §122.44(i)(1)(iv)*]

D. Standard Provisions – Records

1. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Board Executive Officer at any time. [*40 CFR §122.41(j)(2)*]

2. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements [*40 CFR §122.41(j)(3)(i)*];

   b. The individual(s) who performed the sampling or measurements [*40 CFR §122.41(j)(3)(ii)*];

   c. The date(s) analyses were performed [*40 CFR §122.41(j)(3)(iii)*];

   d. The individual(s) who performed the analyses [*40 CFR §122.41(j)(3)(iv)*];

e. The analytical techniques or methods used [*40 CFR §122.41(j)(3)(v)*]; and

f. The results of such analyses [*40 CFR §122.41(j)(3)(vi)*]

3. Claims of confidentiality for the following information will be denied [*40 CFR §122.7(b)*]:

a. The name and address of any permit applicant or Discharger [*40 CFR §122.7(b)(1)*];

b. Permit applications and attachments, permits and effluent data [*40 CFR §122.7(b)(2)*].

E. Standard Provisions – Reporting

1. Duty to Provide Information

The Discharger shall furnish to the Regional Board, SWRCB, or U.S. EPA within a reasonable time, any information which the Regional Board, SWRCB, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Board, SWRCB, or U.S. EPA copies of records required to be kept by this Order. [*40 CFR §122.41(h)*] [*CWC 13267*]

2. Signatory and Certification Requirements

a. All applications, reports, or information submitted to the Regional Board, SWRCB, and/or U.S. EPA shall be signed and certified in accordance with paragraph (b) and (c) of this provision. [*40 CFR §122.41(k)*]

b. All permit applications shall be signed as follows:

(1) For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. [*40 CFR §122.22(a)(1)*]

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; [*40 CFR §122.22(a)(2)*] or

(3) For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). [*40 CFR §122.22(a)(3)*]

c. All reports required by this Order and other information requested by the Regional Board, SWRCB, or U.S. EPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph (b) of this provision [*40 CFR §122.22(b)(1)*];

(2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position); [*40 CFR §122.22(b)(2)*] and,

(3) The written authorization is submitted to the Regional Board, SWRCB, or U.S. EPA. [*40 CFR §122.22(b)(3)*]

d. If an authorization under paragraph (c) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (c) of this provision must be submitted to the Regional Board, SWRCB or U.S. EPA prior to or together with any reports, information, or applications, to be signed by an authorized representative. [40 CFR §122.22(c)]

e. Any person signing a document under paragraph (b) or (c) of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [*40 CFR §122.22(d)*]

3. Monitoring Reports

a. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. [*40 CFR §122.41(l)(4)*]

b. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Board or SWRCB for reporting results of monitoring of sludge use or disposal practices. [*40 CFR §122.41(l)(4)(i)*]

c. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136 or, in the case of sludge use or disposal, approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Board. [*40 CFR §122.41(l)(4)(ii)*]

d. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. [*40 CFR §122.41(l)(4)(iii)*]

4. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order shall be submitted no later than 14 days following each schedule date. [*40 CFR §122.41(l)(5)*]

5. Twenty-four Hour Reporting

a. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [*40 CFR §122.41(l)(6)(i)*]

b. The following shall be included as information that must be reported within 24 hours under this paragraph [*40 CFR §122.41(l)(6)(ii)*]:

(1) Any unanticipated bypass that exceeds any effluent limitation in this Order. [*40 CFR §122.41(l)(6)(ii)(A)*]

(2) Any upset that exceeds any effluent limitation in this Order. [*40 CFR §122.41(l)(6)(ii)(B)*]

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours. [*40 CFR §122.41(l)(6)(ii)(C)*]

c. The Regional Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. [*40 CFR §122.41(l)(6)(iii)*]

6. Planned Changes

The Discharger shall give notice to the Regional Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [*40 CFR §122.41(l)(1)*]:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); [*40 CFR §122.41(l)(1)(i)*] or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions - Notification Levels G.1.a) [*40 CFR §122.41(l)(1)(ii)*]

c. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. [*40 CFR §122.41(l)(1)(iii)*]

7. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Board or SWRCB of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. [*40 CFR §122.41(l)(2)*]

8. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.3, E.4, and E.5 at the time monitoring reports are submitted. The reports shall contain the information listed in Provision E.5. [*40 CFR §122.41(l)(7)*]

9. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Board, SWRCB, or U.S. EPA, the Discharger shall promptly submit such facts or information. [*40 CFR §122.41(l)(8)*]

F. Standard Provisions – Enforcement

1. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to

$2,000,000 for second or subsequent convictions. [*40 CFR §122.41(a)(2)*] [*CWC Sections 13385 and 13387*]

2. Any person may be assessed an administrative penalty by the Regional Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000. [*40 CFR §122.41(a)(3)*]

3. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. [*40 CFR §122.41(j)(5)*].

4. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [*40 CFR §122.41(k)(2)*]

G. Additional Provisions – Notification Levels

1. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Board as soon as they know or have reason to believe [*40 CFR §122.42(a)*]:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [*40 CFR §122.42(a)(1)*]:

(1) 100 micrograms per liter (µg/L) [*40 CFR §122.42(a)(1)(i)*];

(2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(1)(ii)*];

(3) Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(1)(iii)*]; or

(4) The level established by the Regional Board in accordance with 40 CFR §122.44(f). [*40 CFR §122.42(a)(1)(iv)*]

b. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [*40 CFR §122.42(a)(2)*]:

(1) 500 micrograms per liter (µg/L) [*40 CFR §122.42(a)(2)(i)*];

(2) 1 milligram per liter (mg/L) for antimony [*40 CFR §122.42(a)(2)(ii)*];

(3) Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [*40 CFR §122.42(a)(2)(iii)*]; or

(4) The level established by the Regional Board in accordance with 40 CFR §122.44(f). [*40 CFR §122.42(a)(2)(iv)*]

2. Publicly-owned Treatment Works

All POTWs shall provide adequate notice to the Regional Board of the following [*40 CFR §122.42(b)*]:

a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR §122.42(b)(1)*]; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. [*40 CFR §122.42(b)(2)*]

c. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. [*40 CFR §122.42(b)(3)*]

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR § 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements to implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Board.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

1. "A Guide to Methods and Standards for the Measurement of Water Flow," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)

2. "Water Measurement Manual," U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)

3. "Flow Measurement in Open Channels and Closed Conduits," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)

4. "NPDES Compliance Sampling Manual," U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)

C. 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 United States Environmental Protection Agency.

D. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted by a laboratory certified by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40CFR Part 136), promulgated by the USEPA.

G. If the facility is not in operation, or there is no discharge during a required reporting period, the discharger shall forward a letter to the Regional Board indicating that there has been no activity during the required reporting period.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstration compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	M-001	Shall be located at Discharge Point 001 (through which the discharge to Strout Drain occurs). The monitoring location latitude 32 º, 42', 32" N and longitude 115º, 30', 29" W.
	R-001	Shall be located midstream in Strout Drain at a point where the discharge and receiving waters have thoroughly mixed, but not to exceed 50 feet downstream from the point of discharge

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. The Discharger shall monitor discharge of effluent to Strout Drain at M-001 as follows:

Constituent	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Daily Effluent Discharge	mgd	Flow Meter Reading	1x/day	
pH	Std. Units	Grab	1x/Week	[1]
Temperature	°F	Grab	1x/Week	
Ammonia Nitrogen as N	mg/L[3]	Grab	1x/Week	[1]
Total Suspended Solids	mg/L[3]	Grab	1x/Week	[1]
Chlorine Residual[2]	mg/L[3]	Grab	1x/Week	[1]
Total Dissolved Solids[6]	mg/L[3]	Grab	1x/Week	[1]
Lead[5]	µg/L[3]	Grab	1x/Month	[1]
Selenium	µg/L[3]	Grab	1x/Month	[1]
Silver[5]	µg/L[3]	Grab	1x/Month	[1]
Chromium (VI)[5]	µg/L[3]	Grab	1x/Month	[1]
Copper[5]	µg/L[3]	Grab	1x/Month	[1]
Mercury[5]	µg/L[3]	Grab	1x/Month	[1]
Nickel[5]	µg/L[3]	Grab	1x/Month	[1]
Thallium	µg/L[3]	Grab	1x/Month	[1]
Zinc[5]	µg/L[3]	Grab	1x/Month	[1]
Priority Pollutants[3]	µg/L[3]	Grab	1x/year	[1]

1 Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.

2 The discharger may monitor for dechlorinating agent residual and report residual chlorine as nondetectable if the dechlorinating agent is present.
3 mg/L = milligrams-per-Liter, µg/L = micrograms-per-Liter
4 Priority pollutants as defined by the CTR defined in Finding II.I of this Order.
5 Total Recoverable
6 Reported as daily maximum, monthly average and annual average

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Monitoring Requirements

1. Bioassays shall be performed to evaluate the toxicity of the discharged wastewater in accordance with the following procedures unless otherwise specified by the Regional Board's Executive Officer or his designee:

   a. Bioassays shall be conducted on a sensitive fish species and an invertebrate species as approved by the Regional Board's Executive Officer. Pimephales promelas (fathead minnow) and Ceriodaphnia dubia (water flea) are suggested test species that may be utilized. The bioassays shall be conducted in accordance with the protocol given in EPA/821-R-02-013 – Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms, 4th Edition, and EPA/821-R-02-012 – Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms, 5th Edition, or subsequent editions.

2. The discharger shall conduct chronic and acute toxicity testing on the final effluent discharged to Strout Drain at Monitoring Location M-001 as follows:

Test	Units	Sample Type	Minimum Sampling Frequency
Chronic Toxicity	TU_c	24-hr Composite	1x/month
Acute Toxicity[1]	TU_a[2]	24-hr. composite	1x/month

[1] Acute Bioassay results can be calculated from chronic bioassay test for Pimephales promelas
[2] Discharger can provide Pass/Fail when using a t-test

3. Both test species given below shall be used to measure chronic and acute toxicity:

Species	Effect	Test Duration (days)	Reference[1,2]
Fathead Minnow (Pimephales promelas)	Larval Survival and Growth	7	EPA/821-R-02-013 (Chronic) EPA/821-R-02-012 (Acute)
Water Flea (Ceriodaphnia dubia)	Survival and Reproduction	7	EPA/821-R-02-013 (Chronic) EPA/821-R-02-012 (Acute)

[1] Additional references listed in Attachment E, MRP Section V.A.4
[2] Acute Bioassay results can be calculated from chronic bioassay tests.

4. References for Conducting Toxicity Tests

   a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA/821-R-02-012, October, 2002 or subsequent editions.

   b. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water for Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October, 2002 or subsequent editions.

B. Quality Assurance

1. Dilution and control waters may be obtained from an unaffected area of receiving waters. Synthetic (standard) dilution is an option and may be used if the above source is suspected to have toxicity greater than 1.0 TU_c

2. A series of at least five dilutions and a control shall be tested for chronic toxicity testing and may be used for acute toxicity testing. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.

3. For the acute toxicity testing using a t-test, two dilutions shall be used, i.e., 100 percent effluent and a control (when a t-test is used instead of an LC50).

4. If organisms are not cultured in-house, concurrent testing with a referenced toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.)

5. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the toxicity test references, then the permittee must re-sample and retest within 15 working days or as soon as possible. The retesting period begins when the Discharger receives the test results that indicate retesting is needed and ends when the Discharger collects the first sample required to complete the retest.

6. The reference toxicant and effluent tests must meet the upper and lower bounds on test sensitivity as determined by calculating the percent minimum significant difference (PSMD) for each test result. The test sensitivity bound is specified for each test method in the respective methods manuals.

C. Accelerated Monitoring Requirements

The Discharger shall implement an accelerated monitoring frequency consisting of performing three toxicity tests in a nine-week period beginning from the date the Discharger receives the results indicating an initial exceedance of the chronic or acute toxicity triggers described below:

Any chronic toxicity test that exceeds 2 chronic toxicity units (TU_c) or a three (3)-sample median[1] (consecutive samples) that exceeds 1 TU_c shall trigger an accelerated monitoring frequency. In addition, any acute toxicity test results showing high toxicity shall trigger an accelerated monitoring frequency. High acute toxicity is defined as follows:

a. Less than 80% survival when acute toxicity is calculated from results of the chronic toxicity test (only for *Pimephales promelas*), or

b. Less than 90% survival when acute toxicity is calculated from the results of the acute toxicity test, or

c. Results of acute toxicity t-test for 100 percent effluent concentration that is reported as failed.

Accelerated monitoring frequency shall consist of performing three (3) toxicity tests in a nine (9)-week period beginning from the date the Discharger receives the results indicating an initial exceedance of the chronic or acute toxicity triggers. The scope of accelerated monitoring shall be limited to the species and analytical method that failed the test.[1]

[1] 3-Sample median is defined as follows: The middle value of 3 consecutive samples arranged from the low value to the high value.

If implementation of the generic TRE workplan indicates the source of the exceedance of the toxicity trigger (for instance, a temporary plant upset), then only one additional test is necessary. If exceedance of the toxicity trigger is detected in this test, the discharger will continue with accelerated monitoring requirements or implement the Toxicity Identification and Toxicity Reduction Evaluations.

If none of the three tests indicated exceedance of the toxicity trigger, then the permittee may return to the normal bioassay testing frequency.

D. Conducting Toxicity Identification Evaluations and Toxicity Reduction Evaluations

1. A Toxicity Identification Evaluation (TIE) shall be triggered if testing from the accelerated monitoring frequency indicates any of the following:

   a. Two of the three accelerated chronic toxicity tests are reported as failed tests meeting any of the conditions specified in Attachment E, Section V.C; or

   b. Two of the three acute toxicity tests are reported as failed tests meeting any of the conditions specified in Attachment E, Section V.C.

   c. The TIE shall be initiated within 15 days following failure of the second accelerated monitoring test.

   d. If a TIE is triggered prior to the completion of the accelerated testing, the accelerated testing schedule may be terminated, or used as necessary in performing the TIE.

2. The TIE shall be conducted to identify and evaluate toxicity in accordance with procedures recommended by the United States Environmental Protection Agency (USEPA) which include the following:

   a. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, (USEPA, 1992a);

   b. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition (USEPA, 1991a);

   c. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Sampling Exhibiting Acute and Chronic Toxicity (USEPA, 1993a);

   d. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (USEPA, 1993b);

3. As part of the TIE investigation, the Discharger shall be required to implement its Toxicity Reduction Evaluation (TRE) workplan. The Discharger shall take all reasonable steps to control toxicity once the source of the toxicity is identified. A failure to conduct required toxicity tests or a TRE within a designated period shall result in the establishment of numerical effluent limitations for chronic toxicity in a permit or appropriate enforcement action. Recommended guidance in conducting a TRE include the following:

   a. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, August 1999, EPA/833B-99/002;

   b. Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program dated March 27, 2001, USEPA Office of Wastewater Management, Office of Regulatory Enforcement.

E. Definition of Toxicity

1. Chronic toxicity measures sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms.

2. Chronic toxicity shall be measured in TU_c, where TU_c = 100/NOEC. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of toxicant to which the values for the observed responses are not statistically significantly different from the controls).

3. Acute toxicity is a measure of primarily lethal effects that occur over a ninety-six (96) hour period. Acute toxicity for Pimephales promelas can be calculated from the results of the chronic toxicity test for Pimephales promelas and reported along with the results of each chronic test. Acute toxicity for Ceriodaphnia dubia cannot be calculated from the results of the chronic toxicity test for Ceriodaphnia dubia because the test design is not amenable to calculation of a lethal concentration (LC50) value as needed for the acute requirement.

4. Acute toxicity shall be measured in Tu_a, where Tu_a = 100/LC50 or as pass/fail using a t-test. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.

F. Reporting

1. The Discharger shall submit the analysis and results of the toxicity test, including any accelerated testing in toxicity units with the discharge monitoring reports for the month in which the last test is conducted.

2. If a Toxicity Identification Evaluation (TIE) is conducted the Discharger shall submit the results of the TIE with the discharge monitoring reports for the month in which the final report is completed.

3. If the Toxicity Reduction Evaluation (TRE) Work Plan has been initiated, the Discharger shall report on the progress of the actions being taken and include this information with each monthly monitoring report.

VI. LAND DISCHARGE MONITORING REQUIREMENTS - NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS - NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location R-001

1. The Discharger shall monitor Strout Drain at R-001 as follows:

Constituent	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Temperature	°F	Grab	1x/Week	
Dissolved Oxygen	mg/L	Grab	1x/Week	[1]
pH	standard units	Grab	1x/Week	[1]
Hardness as $CaCO_3$	mg/L	Grab	1x/year[4]	[1]
Priority Pollutants[2,3]	µg/L	Grab	1x/year[4]	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR sections 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Board or the State Board.
[2] Priority Pollutants as defined by the CTR defined in Finding II.I of this Order.
[3] Must analyze pH and hardness of the receiving water at the same time the samples are collected for priority pollutants analysis

[4] Monitored concurrently with effluent Priority Pollutant monitoring specified in Attachment E, Monitoring and Reporting Program, Section IV.A.1 of this Order.

B. Visual Monitoring Downstream Receiving Water Sampling Points

1. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at Station R-001. In the event that no receiving water is present, no receiving water monitoring data is required for station R-001. Notes on receiving water conditions shall be summarized in the monitoring report. Attention shall be given to the presence or absence of:

   a. Floating or suspended matter
   b. Discoloration
   c. Aquatic life (including plants, fish, shellfish, birds)
   d. Visible film, sheen or coating
   e. Fungi, slime, or objectionable growths
   f. Potential nuisance conditions

   The Discharger should also note if agricultural drains within the immediate location of Monitoring location R-001 are discharging to Strout Drain at the time of sample collection.

IX. OTHER MONITORING REQUIREMENTS

A. Dioxin Monitoring – Not Applicable

B. BMPP Status and Effectiveness Report.

Annually the Discharger shall report the status of the implementation and the effectiveness of the Best Management Practice Plan (BMPP) required under Special Provision VI.C.3 of this Order. The BMPP shall be reviewed at a minimum once per year and updated as needed to ensure all actual or potential sources of pollutants in wastewaster and storm water discharged from the facility are addressed in the BMPP. All changes or revisions to the BMPP will be summarized in the annual report required under Attachment E, Monitoring and Reporting, Section X.D.

C. Chemical Use Report.

The discharger shall monitor the chemicals used in the facility. Prior to any change in the use of chemical at the facility the discharges must inform the Regional Board. As specified in Special Provision VI.C.7.a, no changes in the type or amount of chemicals added to the process water shall be made without the written approval of the Regional Board's Executive Officer. To comply with this provision, the discharger must submit a complete report of the change to the Regional Board before the proposed date of change. This requirement of does not apply to changes of chemical brand names where the chemical composition and MSDS information for the new brand is essentially identical to the previous chemical used. The change in brand or manufacturer with a copy of the new MSDS sheet need only be reported to the Regional Board in the Discharger's monthly DMRs.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The discharger shall comply with all Standard Provisions (Attachment D) relating to monitoring, reporting and recordkeeping.

2. The discharger shall report the results of acute and chronic toxicity testing, TRE and TIE as required Attachment E, Monitoring and Reporting, Section V.F.

B. Self Monitoring Reports

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.

2. The Discharger shall submit monthly, quarterly, annual Self Monitoring Reports including the results of all required monitoring and monitoring conducted in addition to the minimum required monitoring and using USEPA approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 1st day of the second month following the end of each calendar month; Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter; Annual reports shall be due on February 1 following each calendar year.

3. Monitoring periods for all required monitoring shall commence according to the following schedule:

Sampling Frequency	Monitoring Period Starts On...	Monitoring Period	Reporting Due with SMR on...
Continuous	June 30, 2005	All	First day of second month following month of sampling
X / day	June 30, 2005	Calendar day (Midnight through 11:59 PM)	First day of second month following month of sampling
X / week	Sunday following June 29, 2005	Sunday through Saturday	First day of second month following month of sampling
X / month	First day of calendar month following June 29, 2005	1st day of calendar month through last day of calendar month	First day of second month following month of sampling
X / quarter	July 1 following June 29, 2005	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
X / year	January 1 following June 29, 2005[1]	January 1 through December 31	February 1

[1] On February 1, 2006, the discharger will report the data collected for the period between June 29, 2005 and January 1, 2006.

4. The discharger shall report with each sample result the applicable Minimum Level (ML) and the laboratory current Method Detection Limit (MDL) as determined by the procedure in 40 CFR Part 136.

5. The discharger shall arrange all reported data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.

6. The Discharger shall attach a cover letter to its Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.

7. Monitoring results must be reported on forms approved by this Regional Board. Duplicate copies of the monitoring reports, signed and certified as required by the standard provisions (Attachment D) must be submitted to the address listed below:

   California Regional Water Quality Control Board
   Colorado River Basin Region
   73-720 Fred Waring, Suite 100
   Palm Desert, CA 92260

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

   State Water Resources Control Board
   Discharge Monitoring Report Processing Center
   Post Office Box 671
   Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

D. Other Reports

1. Operation and Maintenance

   The Discharger shall report the following:

Activity	Reporting Frequency
Annually the discharger shall submit a report summarizes; 1) any changes to the facility, its operations and activities; 2) describe the pollutants associated with the changes, and 3) how these new activities, operations or changes will be addressed in the BMPP. As part of the annual report, the discharger shall inspect and document any operation/maintenance problems. In addition, calibration of flow meters or other equipment/device used to demonstrate compliance with effluent limitations of this Order shall be performed in a timely manner, documented and reported in the annual report.	1x/year

Attachment F – Fact Sheet – Table of Contents

ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the specific legal requirements and detailed technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

WDID	7A13 2160 001
Discharger	Heber Geothermal Company and Ormat Nevada Inc.
Name of Facility	Heber Geothermal Company, Heber
Facility Address	895 Pitzer Road
	Heber, CA 92249
	Imperial County
Facility Contact, Title and Phone	Sergio Cabanas, H.E.S. Engineer, (760) 353-9630
Authorized Person to Sign and Submit Reports	Greg Griffith, General Manager, (760) 353-8200 ext. 227
Mailing Address	947 Dogwood Road, Heber, CA 92249
Billing Address	SAME
Type of Facility	Industrial (IND)
Threat to Water Quality	2
Complexity	A
Pretreatment Program	N
Reclamation Requirements	N/A
Permitted Flow	4.3 mgd
Facility Design Flow	N/A
Watershed	Imperial Valley Planning Area
Receiving Water	Strout Drain
Receiving Water Type	Agricultural Drain

According to the Report of Waste Discharge, Heber Geothermal Company facility (hereinafter facility) is a geothermal power plant owned by Heber Geothermal Company and operated by Ormat Nevada, Inc. (hereinafter Discharger). The Facility discharges wastewater to Strout Drain, a water of the United States and is currently regulated by 00-072 which was adopted on June 28, 2000. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on December 23, 2004. A site visit was conducted on December 7, 2004, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

A. Description of the Facility and Wastewater Treatment

1. The Heber Geothermal Company facility (hereinafter referred to as facility) is a geothermal power plant located in Heber, California. The facility utilizes naturally occurring geothermal steam to generate electric power for sale in the open market. The current boilerplate rating for the facility is 52 megawatt (MW), with a net generation capacity of slightly less. The facility has been operating for almost 20 years and operates 24-hours per day, seven days per week, 52 weeks per year. The facility consists of eleven production wells, ten injection wells, two high-pressure vessels, two low-pressure vessels, a single turbine/generator unit, and cooling towers. Each well has an automatic wellhead control valve that controls the flow from the wells, and the entire system is computer-controlled from the Production Island control room. Super-heated (325 to 370°F) brine water is pumped from the production wells to the high-pressure vessels to produce pure steam that is delivered to the turbine. The brine produced from wells has a salt content of 14,000 PPM and a dynamic wellhead pressure of 25 to 60 pound per square inch gage (psig)[1]. Unused water out of the high-pressure unit is pumped to the low-pressure units to produce steam that is delivered to the turbine. Water out of the low-pressure unit is pumped to one of two large hot water tanks and then pumped and re-injected into the ground. Steam from the high and low-pressure units is used to turn the turbine to operate the generator to generate power. Spent steam that has been in full contact with the turbine is condensed in the condenser situated below the turbine.

2. Condenser cooling is provided by a closed-cycle system consisting of mechanical draft cooling towers. Water from the cooling tower is pumped into 15,000 tubes within the condenser to condense the steam back into liquid. To maintain optimal water quality and heat exchange rates, the cooling tower water recirculation system continually discharges a portion of the recirculating cooling water (blowdown) to the Stout Drain through Discharge Point 001. The condensed steam can be either directed back to the cooling tower recirculation system or sent with cooling tower blowdown to Strout Drain depending on the weather conditions. During the summer months (parts of April through October) the condensate is mixed with blow down from the cooling tower at the final effluent sampling point and discharged directly to Strout Drain. During the winter months, (November, December, January, February, March and sometimes April) the facility is able to route the cooling tower/condensate mixture back to the cooling tower for reuse. According the facility representative the condensate mixture is super clean water (low mineralization) and when it is used the facility is able to increase the cycling reuse of the cooling water from approximately 4 to 4.5 cycles to 7 cycles. The facility currently does not have the capability to cool the condensate before discharge. The facility discharges an average of 2.5 million gallons per day (mgd) to the Strout Drain. The Strout Drain flows into the Alamo River, which discharges into the Salton Sea. The facility meters and measures their flow with totalizing meters. The meters are maintained by the facility maintenance crew and have never been calibrated. Make-up water for the cooling tower recirculation system is withdrawn from the Daffodil Canal under a purchase agreement with the Imperial Irrigation District (IDD). If needed, make-up water can be supplemented with water from the Central Main Canal. The facility uses an average of 2 ac-ft of water per day and have used up to 5 ac-ft/day.

[1] Taken from Previous Order No. 00-044

3. Chemicals are used at the facility for a variety of operational and maintenance activities. Chemicals used for the cooling tower include, sulfuric acid for pH control, chlorine for algae control, chemicals to keep particulates in solution and biocides on an as needed basis. Other chemicals used at the facility include: 1) chemicals to control mineral deposits at the production wellheads, 2) chemicals to treat water for domestic use, and 3) oils, greases, solvents and other chemical associated with facility, equipment and machinery operation and maintenance.

4. The facility has two evaporation and one retention basin covering a total of approximately four acres located in SW ¼, SW ¼, Section 34, T16S, R14E, SBB&M. The basins are designed to collect geothermal fluid, wastewater, and storm water runoff from the plant. The basins also serve as a standby facility to receive wastewater under emergency conditions, which may occur at the plant such as brine leaks, plant shutdowns, pipe ruptures, and other unexpected adverse situations. Storm water is captured and retained on site for dispersal via evaporation. Total storm water capacity is sufficient for a 100-year storm event. Storm water runoff from all other areas of the facility drains to the retention basin. The storm water pond is located immediately adjacent to the two evaporation ponds, but the ponds are not interconnected and the facility does not have the capability to pump water from the evaporation ponds into the retention pond. The two evaporation ponds and the storm water retention pond are currently regulated by Order 00-044 issued by the Regional Board on 10 May 2000. Neither Order 00-072 (NPDES CA0104965) nor Order 00-044 authorizes the discharge of storm water from the retention basin to Strout Drain. Domestic waste from the facility is disposed to a septic tank system and is not discharged from the facility.

5. The Report of Waste Discharge submitted by the Discharger indicated the following chemicals are currently used at the facility:

Chemical Name	Purpose
PowerChem 3842	Phosphate and co-polymers used as a dipersant, scale and corrosion inhibitor
PowerChem 3732	Biodispersant to prevent fouling from microorganisms and suspended solids
PowerChem 2860	Microorganism control chemical (2,2-Dibromo-3-nitrilopropionamide) to control microbiological growth.
PowerChem 2890	Microorganism control chemical (2-(Tert-Butylamino)-4-Chloro-6-(Ethylamino)-S-Triazine) to control microbiological growth.
PowerChem 2812	Liquid chlorine (sodium hypochlorite) to control microbiological growth.
PowerChem 2899	Liquid sodium bromide used to control microbiological growth.
PowerChem 6215L	Liquid halogen scavenger (sulfite) used to consume free halogen

B. Discharge Points and Receiving Waters

1. The final effluent is discharged to the Strout Drain through Discharge Point 001 located at Latitude 32 º, 42', 32" North, Longitude 115º, 30', 29" West (S 1/2 of Section 34, T16S, R14E, SBB&M). The Strout Drain, a part of the Imperial Valley Drains, flows into the Alamo River, which discharges into the Salton Sea.

2. The discharge consists of cooling tower blowdown and steam condensate.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the existing Order for discharges from Discharge Point 001and a summary of the monitoring data from the term of the previous Order 00-072 are as follows:

Constituent (units)	Effluent Limitation			Monitoring Data (From June 2000 – -September 2004)		
	Average Monthly	Criterion Maximum Conc.	Criterion Continuous Conc. (4-Day Average)	Maximum Average Monthly	Maximum Weekly	Maximum Daily
pH	Between 6 and 9			8.9	----	9
Flow (mgd)	4.3	4.0	----	3.5	----	5.1
Total Dissolved Solids (mg/L)	4000	4500	----	909	1397	
Settleable Solids (ml/L)	0.3	1.0	----	<0.1	<0.1	
Residual Chlorine (mg/L)	0.01	0.02	----	0.01	----	0.02
Zinc (µg/L)	----	120	120	112	----	122
Temperature	----	----	----	39.5	----	44
Ammonia (mg/L)	----	----	----	25	33	----
TSS (mg/L)	----	----	----	15	33	----

2. The Report of Waste Discharge described the proposed discharge as follows:

Maximum Daily Flow Rate	4.3 mgd
Average Daily Flow Rate	3.8 mgd
pH (Minimum)	6.8 s.u.
pH (Maximum)	9.0 s.u.
Maximum Temperature Winter	24°C
Average Temperature Winter	22°C
Maximum Temperature Summer	39.6°C
Average Temperature Summer	37°C

D. Compliance Summary

1. Below is a list of findings of noncompliance and corresponding enforcement actions taken by the Regional Board between June 2000 and July 2004:

Report	Date Received	Violations/Findings	Enforcement Action	Action Date
Phase 1, Tier 2 TIE Report	August 16, 2004	TIE results inconclusive	Cleanup and Abatement Order No. R7-2004-0099	November 10, 2004
2004 September SMR	October 18, 2004	Chronic Toxicity	Notice of Noncompliance	November 2, 2004
2004 August SMR	September 15, 2004	Chronic Toxicity	Notice of Noncompliance	November 2, 2004
2004 July SMR	August 16, 2004	Chronic Toxicity	Notice of Noncompliance	September 7, 2004
2004 June SMR	July 15, 2004	Chronic Toxicity	Notice of Noncompliance	July 22, 2004
2004 May SMR	June 16, 2004	Chronic Toxicity	Notice of Noncompliance	July 9, 2004
2004 April SMR	May 14, 2004	Chronic and Acute Toxicity	Notice of Noncompliance	May 24, 2004
2004 March SMR	April 14, 2004	Chronic and Acute Toxicity	Notice of Noncompliance	May 4, 2004
2004 February SMR	March 12, 2004	Chronic Toxicity	Notice of Noncompliance	April 12, 2004
2004 January SMR	February 13, 2004	Chronic Toxicity	Notice of	February 24, 2004

Report	Date Received	Violations/Findings	Enforcement Action	Action Date
			Noncompliance	
2003 Annual Report	February 3, 2004	Failed to submit Report due 01/15/2004	Notice of Violation No. R7-2004-0036	January 29, 2004
2003 November SMR	December 15, 2003	Chronic Toxicity	Notice of Noncompliance	December 30, 2003
2003 August SMR	September 12, 2003	Acute Toxicity	Notice of Noncompliance TRE analysis requested	September 17, 2003
2003 July SMR	August 15, 2003	Chronic and Acute Toxicity	Notice of Noncompliance Discharger requested to conduct Toxicity Reduction Evaluation (TRE)	September 5, 2003
2003 June SMR Phase 1, Tier 1, TIE	July 25, 2003	Ammonia and particulate bound metals	No Action	None
2003 May SMR	June 13, 2003	Chronic Toxicity TIE report showed cation metals are the source(s)	Notice of Noncompliance	June 24, 2003
2003 February SMR	March 6, 2003	No Toxicity shown	None, TIE postponed	None
2002 December SMR	January 15, 2003	Chronic Toxicity	Notice of Noncompliance	February 14, 2003
2002 November SMR	December 15, 2002	Chronic Toxicity	TIE requested	December 27, 2002
2002 October SMR	November 15, 2002	Chronic Toxicity	None	None
2002 May SMR	June 12, 2002	Chronic and Acute Toxicity	Notice of Noncompliance	June 27, 2002
2002 April SMR	May 15, 2002	Chronic and Acute Toxicity	Notice of Noncompliance	June 27, 2002
2001 September SMR	October 12,2001	Chronic Toxicity	Notice of Noncompliance	October 23, 2001
2001 March Self Monitoring Report (SMR)	April 11, 2001	Chronic and Acute Toxicity	Notice of Noncompliance	June 26, 2001

2. Specification C.6 of previous Order 00-072 may require the Discharger to conduct a Toxicity Identification Evaluation (TIE) if WET test results indicate the discharge is toxic, As summarized in the above table, WET testing found the discharge toxic a number of occasions between June 2000 and September 2004. On December 21, 2002 the Executive Officer directed the discharger to conduct a TIE. The discharger failed to ensure that the Toxicity Identification Evaluation requested on December 21, 2002 was conducted in accordance with the time schedule set by the Executive Officer. The final TIE report was submitted to the Regional Board in 2004 did not identify the exact causes of toxicity in the discharge.

3. The Discharger violated Discharge Specifications No. 1,4,6,7 and 8 of previous Order No. 00-072 by its failure to take appropriate action to identify the source of toxicity and to implement adequate controls for the source(s) of chronic toxicity of its discharge.

4. Pursuant to Water Code Section 13304, Cleanup and Abatement Order No. R7-2004-0099 was issued to the Discharger on November 10, 2004, that requires the discharger to abate the effects of waste by correcting or preventing discharges of waste in violation of Board Order No. 00-072. The Cleanup and Abatement Order requires the facility to complete Toxicity Identification Evaluation of the effluent by April 15, 2005 and submit a plan for conducting Toxicity Reduction Evaluation by May15, 2005

5. In July 2004, daily maximum effluent limit of 120 μg/L for zinc was exceeded.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

1. **Basin Plan.** Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to Strout Drain, a part of the Imperial Valley Drains, are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Strout Drain (Imperial Valley Drains)	Existing: Freshwater replenishment (FRESH), Water Contact Recreation (REC I)[2,3], non-contact water recreation (REC-2)[1], warm freshwater habitat (WARM); wildlife habitat (WILD), Preservation of Rare, Threatened or Endangered Species (RARE)[4].

2. **Thermal Plan.** The Thermal Plan does not apply to the Strout Drain.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

[2] Unauthorized Use.
[3] The only REC1 usage that is know to occur is from infrequent fishing activity.
[4] 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.

4. **State Implementation Policy.** On March 2, 2000, On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The SIP includes procedures for determining the need for and calculating water quality-based effluent limitations (WQBELs), and requires Dischargers to submit data sufficient to do so.

5. **Anti-degradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. As discussed in detail in this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All effluent limitations in the Order are at least as stringent as the effluent limitations in the previous Order.

7. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

8. **Storm Water Requirements.**

   a. Federal regulations for storm water discharges were promulgated by the United States Environmental Protection Agency (USEPA) (40 CFR Parts 122, 123, and 124). The regulations require specific categories of facilities which discharge storm water associated with industrial activity to obtain National Pollutant Discharge Elimination System (NPDES) permits and to implement Best Conventional Pollutant Technology (BCT)) and Best Available Technology Economically Achievable (BAT) to reduce or eliminate industrial storm water pollution.

   b. Industrial activities conducted at the site are not defined in the Federal Regulations 40 CFR 122.26 as industrial activities that must be regulated by an NPDES permit.

D. Impaired Water Bodies on CWA 303(d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Board plans to develop and adopt total maximum daily loads (TMDLs) that will specify waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, as appropriate. USEPA approved the State's 2002 303(d) list of impaired water bodies on July 25, 2003.

The final effluent from the facility is discharged through Discharge Point 001 to Strout Drain, which is a part of Imperial Valley Drains and drains into the Alamo River and ultimately the Salton Sea. The Imperial Valley Drains has been classified as impaired on the 2002 303(d) list and has been scheduled for TMDL development. According to the 2002 303(d) list, the Imperial Valley Drains are impaired for

sedimentation/silt pesticides, and selenium. A TMDL for sedimentation/siltation was approved by USEPA in June 2002. To date no TMDL has been completed for pesticides or selenium.

The sedimentation/siltation TMDL establishes a numeric target of an annual average in-stream TSS concentration of 200 mg/L. In assigning the waste load allocation (WLA), the TDML assigned a WLA to Heber Geothermal Company of 391.1 tons per year of suspended solids based on a TSS effluent limit of 30 mg/L. This Order establishes effluent limitations for TSS of 10 mg/L (average monthly) and 14 mg/L (maximum daily) based on plant performance. If the discharger were to discharge at its maximum projected discharge rate of 4.3 mgd every day for a year the facility would not exceed the WLA of 391.1 tons per year of sediment. The limits established in this Order adequately implement the requirements of the TMDL.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control of the discharge of pollutants is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations. Section 122.44(a) of 40 CFR requires that permits include applicable technology-based limitations and standards. Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information; or an indicator parameter.

While developing effluent limitations and receiving water limitations, monitoring requirements, and special conditions for the draft permit the following information sources were used:

- EPA NPDES Application Forms 1 and 2A dated December 23, 2004.
- Code of Federal Regulations – Title 40
- Water Quality Control Plan (Colorado River Basin – Region 7) as amended to date.
- Regional Board files related to Heber Geothermal Company Power Plant NPDES permit CA0104965.

Effluent limits for zinc in the previous Order 00-072 were expressed as criterion maximum concentration, and criterion 4-day average concentration. These limits were developed by setting them equal to the proposed CTR water quality criteria expressed as dissolved and calculated using an assumed, worst case receiving water hardness value of 100 mg/L. These limits were developed prior to the final promulgation of the CTR criteria and the adoption and implementation of the SIP. According to the SIP effluent limits for CTR pollutants are to be expressed as a monthly average and as a daily maximum and may be calculated using the CTR criteria. The following table summarizes the equivalent monthly average and daily maximum effluent limits for zinc corresponding to the limitations expressed in the previous Order 00-072 using the methodology outlined in SIP for developing water quality-based effluent limits.

		Effluent Limits in Previous Order 00-072		Equivalent Effluent Limits Using SIP Methodology	
Constituents	**Units**	**Criterion Maximum Concentration**	**Criterion Concentration (4-Day Average)**	**Average Monthly (Derived)**	**Maximum Daily (Derived)**
Zinc	µg/L	120	120	45.84	120.00

The limits as expressed in the previous Order 00-072 were interpreted as the following for reporting and compliance determination:

- Criterion Maximum Concentration = Daily Max
- Criterion Concentration (4-day Average) = Monthly Average

The interpretations described above were used during the development of this proposed Order when accessing compliance with previous Order 00-072 and in developing interim effluent limitations.

Based on receiving water monitoring data for the Strout Drain provided by the Discharger, the lowest hardness value for Strout Drain used in the development of effluent limitations for the proposed Order is 562 mg/L. The Regional Board has determined that the maximum allowed minimum hardness value to be used in a reasonable potential analysis for discharges to surface waters in the Colorado River Basin is 400 mg/L. For this Order, the hardness dependant water quality criteria were calculated using a hardness of 400 mg/L.

Generally, mass-based effluent limitations ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. 40 CFR 122.45(f)(1) requires that all permit limits, standards or prohibitions be expressed in terms of mass units except under the following conditions:

- for pH, temperature, radiation or other pollutants that cannot appropriately be expressed by mass limits;
- when applicable standards or limitations are expressed in terms of other units of measure; or
- if in establishing technology-based permit limits on a case-by-case basis limits based on mass are infeasible because the mass or pollutant cannot be related to a measure of production. The limitations, however, must ensure that dilution will not be used as a substitute for treatment.

The Report of Waste Discharge indicates the maximum expected discharge rate of wastewater to Strout Drain is 4.3 mgd. The mass-based limits for this Order were based on a reported maximum daily flow of 4.3 mgd.

A. Discharge Prohibitions

The discharge prohibitions are based on the requirements of the Basin Plan, California Water Code, and previous permit provisions, and are consistent with the requirements set for other discharges regulated by NPDES permit to the Imperial Valley Drains.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

b. Section 402(a)(1) of the CWA and 40 CFR 125.3 of the NPDES regulations authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where effluent limitations, guidelines and standards are not available for certain industrial categories and/or pollutants of concern. Point source discharges from Steam electric power generating facilities that utilize fossil fuels (coal, oil or gas) or nuclear fuel in conjunction with steam are subject to the federal Effluent Guidelines established in 40CFR Part 423. This facility

does not use fossil or nuclear fuels in its operation and are not subject to effluent guidelines established in 40CFR Part 423.

c. Section 316(b) of the CWA establishes cooling water intake requirements for facilities that intake cooling water in excess of 50 mgd. This facility does not meet this threshold value and is not subject to Section 316(b) requirements

2. Applicable Technology-Based Effluent Limitations

a. This Order includes technology-based effluent limitations based on BPJ in accordance with 40CFR 125.3. Based on BPJ, effluent limitations for flow, pH, total dissolved solids (TDS), residual chlorine in the proposed permit have been carried over from the previous Order 00-072 with some modifications for some parameters as described below:

1) The previous Order did not include mass-based effluent limitations. Mass based limits are based on a maximum discharge of 4.3 MGD. Based on 40 CFR 122.45(f)(1) mass based limits are not established for pH, TDS, and residual chlorine.

2) Effluent limits for settleable solids are not included in the proposed Order. Both TSS and settleable solids provide a measure of solids in the wastewater. This Order establishes an effluent limitation based on plant performance using BPJ for TSS (see discussion below). Since TSS is regulated in the proposed permit, effluent limitations for settleable solids are redundant and are not necessary; therefore, this Order does not include a limit for settleable solids.

b. Basis for Limitations

Constituents	Basis for Limitations
Hydrogen Ion (pH)	Hydrogen Ion (pH) is a measure of Hydrogen Ion concentration in the water. A range specified between 6 to 9 ensures suitability of biological life. The limitations have been adopted from the previous permit based on BPJ. The limitation is the same as in the Basin Plan of the Region.
Total Dissolved Solids (TDS)	The limitations protect the beneficial uses of the receiving water. The limitations have been adopted from the previous permit based on BPJ. The limitations are the same as in the Basin Plan of the Region.
Total Suspended Solids	High levels of suspended solids can adversely impact aquatic habitat. Untreated or improperly treated wastewater can contain high amounts of suspended solids. According to the 2002 303(d) list of impaired water bodies the Imperial Valley Drains are impaired for sedimentation/silt. The limitations are adopted from the previous permit based on BPJ.
Residual Chlorine	The limitations protect the beneficial uses of the receiving water. The limitations have been adopted from the previous permit based on BPJ.
Flow	The limitations have been adopted from the previous permit based on BPJ.

c. Developing technology-based limits for TSS. Best Professional Judgment (BPJ)-based limits are technology-based limits derived on a case-by-case basis for non-municipal (industrial) facilities. BPJ limits are established in cases where Effluent Limitation Guideline s (ELGs) are not available for, or do not regulate, a particular pollutant of concern. BPJ is defined as the highest quality technical opinion developed by a permit writer after consideration of all reasonably available and pertinent data or information that forms the basis for the terms and conditions of a NPDES permit. Permit limits are generally set at the upper bounds of acceptable performance. As required at 40CFR 122.45(d), two expressions of permit limits are required-an average monthly limit and a maximum daily limit. When developing a BPJ limit, an approach consistent with USEPA's ELG statistical approach is recommended by USEPA[5].

[5] USEPA NDPES Permit Writers' Manual (EPA-833-B-96-003) December 1996

Specifically, the daily maximum limitation can be defined as the estimated 99th percentile of a frequency distribution of the long-term monthly average concentrations and the monthly maximum limitation can be calculated defined as the estimated 95th percentile of the distribution.

Concentrations of TSS as reported in the Discharge Monitoring Reports submitted by the Discharger between the period June 2000 and September 2004 were used in the determination of monthly average and daily maximum effluent limits. This data is an indication of the long-term average concentrations of TSS the facility is capable of achieving.

The 95th and 99th percentile concentrations were determined by using the Minitab Statistical Analysis proprietary software to develop a lognormal frequency distribution plot of the monthly average reported TSS values. The Minitab system provided the 95th and 99th percentile values. The statistical analysis of the monthly average TSS concentrations in the discharge can be summarized as follows:

Parameter	Value
Number of data points evaluated	50
Long-term average concentration	4.5 mg/L
Maximum value reported	15 mg/L (one occurrence in 50 events)
Minimum value reported	1 mg/L (one occurrence in 50 events)
Standard Deviation	2.6
Coefficient of Variation (CV)	0.6
% reported as Non-Detect	0%
99th percentile concentration of frequency distribution of monitoring data	14 mg/L
95th percentile concentration of frequency distribution of monitoring data	10 mg/L

Using the above data, this Order establishes a monthly average effluent limitation for TSS of 10 mg/L (equal to the 95th percentile value) and a daily maximum effluent limitation for TSS of 14 mg/L (equal to the 99th percentile value) based on the plant performance and ability to meet these limits.

d. A summary of technology based effluent limitations is provided in Table F-1.

Table F-1.
Summary of Technology-based Effluent Limitations
Discharge Point 001

Constituent	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	4.3			
Total Suspended Solids	mg/L	10	14		
	lbs/day[1]	359	502		
Residual Chlorine	mg/L	0.01			0.02
pH	standard units			6.00	9.00

[1] Based on a flow of 4.3 mgd

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

a. Effluent discharged from this facility could contain pollutants in sufficient quantities to affect receiving water quality. Pursuant to Section 13263, Article 4, Chapter 4 of the Porter Cologne Water Quality Control Act, the Regional Boards are required to issue Waste Discharge Requirements for discharges that could affect the quality of the State's waters. Furthermore, Federal Regulation 40 CFR 122.1 requires the issuance of NPDES permits for pollutants discharged from a point source to the waters of the United States.

a. The U.S. Environmental Protection Agency published the adopted California Toxics Rule (CTR) (40 CFR §131.38). The CTR promulgates new criteria for both human health protection and protection of aquatic life. New numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants are listed. In addition, the CTR contains a compliance schedule provision, which authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

Table F-2 summarizes the applicable water quality criteria/objective for priority pollutants reported in detectable concentrations in the effluent or receiving water. These criteria were used in conducting the Reasonable Potential Analysis summarized in Section IV.C.3 of this Fact Sheet.

Table F-2
Water Quality Criteria
Strout Drain

CTR No.	Constituent[1]	Selected Criteria	CTR Water Quality Criteria					
			Freshwater		Saltwater		Human Health for Consumption of:	
			Acute	Chronic	Acute	Acute	Water & Organisms	Organisms only
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
2	Arsenic	36	340	150	69	36		
5b	Chromium (VI)	11.43	16	11	1108	50		Narrative
6	Copper	3.73	52	31	5.8	3.7		
7	Lead	8.52	477	19	221	8.5		Narrative
8	Mercury	0.05	Reserved	Reserved	Reserved	Reserved		0.05
9	Nickel	8.28	1516	169	75	8.3		4600
10	Selenium	5	20	5.0	291	71		Narrative
11	Silver	2.24	44		2.2			
12	Thallium	6.3						6.3
13	Zinc	85.62	388	388	95	86		
19	Benzene	71						71
34	Methyl Bromide	4000						4000
35	Methyl Chloride	No Criteria						
54	Phenol	4600000						4600000

[1] Based on a hardness value of 400 mg/L $CaCO_3$ in Strout Drain
[2] All other priority pollutants monitored were reported as ND and are not included in this summary.

3. Determining the Need for WQBELs

In accordance with Section 1.3 of the SIP, the Regional Board conducted a reasonable potential analysis (RPA) for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the Order. The Regional Board analyzed effluent and receiving water data to determine if a pollutant in a discharge has the reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have the reasonable potential to cause or contribute to an excursion above a water quality standard, numeric WQBELs are required. The RPA considers criteria from the CTR and NTR, and when applicable, water quality objectives specified in the Basin Plan. To conduct the RPA, the Regional Board identified the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete a RPA:

1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limit is needed.

2) Trigger 2 – If MEC<C and background water quality (B) > C, a limit is needed.

3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger will be required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The RPA was performed for the priority pollutants reported in detectable concentrations in the effluent and receiving waters. These data were used in the RPA and are summarized in Table F-3.

Table F-3
Summary Reasonable Potential Analysis

CTR No.	Constituent	Applicable Water Quality Criteria (C)	Max Effluent Conc (MEC)	Maximum Detected Receiving Water Conc. (B)	RPA Result - Need Limit?	Reason
		ug/L	ug/L	ug/L		
2	Arsenic	36	ND[1]	10	No	B<C & ND in Effluent
5b	Chromium (VI)	11	30		Yes	MEC>C
6	Copper	3.7	20		Yes	MEC>C
7	Lead	8.5	ND[1]	30	No	B>C & ND in Effluent
8	Mercury	0.05	0.2	0.2	Yes	MEC>C
9	Nickel	8.3	10	30	Yes	MEC>C
10	Selenium	5	ND[1]	30	No	B>C & ND in Effluent
11	Silver	2.2	ND[1]	20	No	B>C & ND in Effluent
12	Thallium	6.3	70	90	Yes	MEC>C
13	Zinc	85.6	122	50	Yes	MEC>C
19	Benzene	71	2.6	4.0	No	MEC<C & B<C

CTR No.	Constituent	Applicable Water Quality Criteria (C)	Max Effluent Conc (MEC)	Maximum Detected Receiving Water Conc. (B)	RPA Result - Need Limit?	Reason
34	Methyl Bromide	4000	1.4		No	MEC<C & B is ND
35	Methyl Chloride	No Criteria	0.92		Ud[2]	No Criteria
54	Phenol	4600000	14	2.7	No	MEC<C & B<C

[1]ND = Not detected
[2]Ud = Undetermined

4. WQBEL Calculations

a. Water quality based effluent limits (final) are based on monitoring results and following the calculation process outlined in Section 1.4 of the California Toxic Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California. Table F-4 summarizes the final WQBELs for this Order using the process described below. A table providing the calculation for all applicable water quality-based effluent limitations for this Order is provided in Attachment G of this Order.

b. WQBELS Calculation Example

Using zinc as an example, the following demonstrates how water quality based effluent limits were established for this Order. The process for developing these limits is in accordance with Section 1.4 of the SIP.

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criterion determine the effluent concentration allowance (ECA) using the following steady state equation:

ECA = C + D(C-B) when C>B, and
ECA = C When C<=B,

Where C = The priority pollutant criterion/objective, adjusted if necessary for hardness, pH and translators. In this Order a hardness value of 400 mg/L (as $CaCO_3$) was used for development of hardness-dependant criteria, and a pH of 7.45 was used for pH-dependant criteria.
D = The dilution credit, and
B = The ambient background concentration

As discussed below, for this Order, dilution was not allowed; therefore:

ECA = C

For zinc the most stringent e water quality criteria are salt-water criteria (reference Table F-2):

ECA_{acute}= 95.14 µg/L
$ECA_{chronic}$= 85.62 µg/L

No numeric human health criteria exist for zinc. Therefore, none of the limits of zinc are based on human health

$ECA_{human\ health}$= Not applicable

Step 2: For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80% of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6.

For zinc, the following data was used to develop the acute and chronic LTA using Table 1 of the SIP:

No. of Samples	CV	$Multiplier_{acute}$	$Multiplier_{chronic}$
30	0.495	0.38	0.58

$LTA_{acute} =$ 95.14 µg/L x 0.38 = 35.71 µg/L

$LTA_{chronic} =$ 85.62 µg/L x 0.58 = 50.01 µg/L

Step 3: Select the most limiting (lowest) of the LTA.

LTA = most limiting of LTA_{acute} or $LTA_{chronic}$

For zinc, the most limiting LTA was the LTA_{acute}

LTA = 35.71 µg/L

Step 4: Calculate the water quality based effluent limits by multiplying the LTA by a factor (multiplier). Water quality-based effluent limits are expressed as Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitation (MDEL). The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the coefficient of variation (CV) of the data set, the number of samples (for AMEL) and whether it is monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$AMEL_{aquatic\ life} = LTA \times AMEL_{multiplier}$

$MDEL_{aquatic\ life} = LTA \times MDEL_{multiplier}$

AMEL multipliers are based on a 95th percentile occurrence probability, and the MDEL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For zinc, the following data was used to develop the AMEL and MDEL for aquatic life using Table 2 of the SIP:

No. of Samples	CV	$Multiplier_{MDEL}$	$Multiplier_{AMEL}$
4	0.495	2.66	1.45

$AMEL_{aquatic\ life}$ = 35.71 x 1.45 = 51.78 µg/L

$MDEL_{aquatic\ life}$ = 35.71 x 2.66 = 95.14 µg/L

Step 5 and 6:

As mentioned earlier, no human health criteria exist for zinc. Therefore, none of the limits of zinc are based on human health.

Step 7: Select the lower of the AMEL and MDEL based on aquatic life and human health as the water-quality based effluent limit for the Order.

No human health criteria exist for zinc. The effluent limits for zinc are based on aquatic toxicity and were incorporated into this Order.

Constituent	$AMEL_{aquatic\ life}$	$MDEL_{aquatic\ life}$
Zinc	52 µg/L	95 µg/L

5. WQBEL Based on Basin Plan Objectives

The Basin Plan states that any discharge to the Imperial Valley Drains shall not cause concentration of TDS in the surface water to exceed a maximum of 4500 mg/L. In the proposed permit, the monthly average and the criterion maximum concentration limit of TDS in previous Order 00-072 are changed to an annual average limit and a daily maximum limit, respectively, based on BPJ and the requirements of the Basin Plan. This Order requires the Discharger to report the annual average TDS values.

6. Final WQBELs

Summaries of the water quality effluent limitations required by this Order are described in Table F-4 and the text below.

Table F-4.
Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

Constituent	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chromium VI	µg/L	8.1	16.3	--	--
	lbs/day[1]	0.29	0.58	--	--
Copper	µg/L	2.8	5.8	--	--
	lbs/day[1]	0.10	0.21	--	--
Mercury	µg/L	0.05	0.1	--	--
	lbs/day[1]	0.002	0.004	--	--
Nickel	µg/L	6.8	14	--	--
	lbs/day[1]	0.24	0.50	--	--
Thallium	µg/L	6.3	13	--	--
	lbs/day[1]	0.23	0.47	--	--
Zinc	µg/L	52	95	--	--
	lbs/day[1]	1.9	3.4	--	--
TDS[2]	mg/L	--	4500	--	--
	lbs/day[1]		161,379		

[1] Based on a maximum discharge flow of 4.3 mgd
[2] The annual average concentration of total dissolved solids (TDS) in the discharge of wastewater shall be limited to 4,000 mg/L

7. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. This Order requires the Discharger to conduct chronic toxicity testing when the facility is operational and discharges to Strout Drain. In addition, the Order establishes thresholds that when exceeded requires the discharger to conduct accelerated toxicity testing and/or conduct toxicity identification evaluation (TIE) studies.

Cleanup and Abatement Order No. R7-2004-0099 was issued to the Discharger on November 10, 2004, and requires the discharger to abate the effects of waste by correcting or preventing discharges of waste in violation of previous Order No. 00-072. The Cleanup and Abatement Order requires the facility to complete Toxicity identification Evaluation of the effluent by April 15, 2005 and submit a plan for conducting Toxicity Reduction Evaluation by May15, 2005.

D. Final Effluent Limitations

Table F-5, summarizes the proposed effluent limitations for Discharge Point 001. Proposed effluent limitations are based on BPJ, CTR and the Basin Plan.

Table F-5.
Summary of Final Effluent Limitations
Discharge Point 001

Constituent	Units	Effluent Limitations				Basis[1]
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	4.3				E, BPJ
pH	standard units			6.0	9.0	BP
Chlorine Residual	mg/L	0.01			0.02	E, BPJ
Total Suspended Solids	mg/L	10	14			
	lbs/day[2]	359	502			
Total Dissolved Solids	mg/L		4500			BP
	lbs/day[2]		161,379			
Chromium VI[4]	µg/L	8.1	16.3			CTR, SIP
	lbs/day[2]	0.29	0.58			
Copper[4]	µg/L	2.8	5.8			
	lbs/day[2]	0.10	0.21			
Mercury[4]	µg/L	0.05	0.1			
	lbs/day[2]	0.002	0.004			
Nickel[4]	µg/L	6.8	14			
	lbs/day[2]	0.24	0.50			
Thallium	µg/L	6.3	13			
	lbs/day[2]	0.23	0.47			
Zinc[4]	µg/L	52	95			
	lbs/day[2]	1.9	3.4			

[1] BPJ = Best Professional Judgment, BP = Basin Plan, E= Existing permit limitation, CTR = California Toxics Rule, SIP =State Implementation Policy
[2] Based on a long-term average flow of 4.3 mgd
[3] The annual average concentration of total dissolved solids (TDS) in the discharge of wastewater shall be limited to 4,000 mg/L
[4] Total Recoverable

E. Interim Effluent Limitations

The discharger may not be to consistently comply with the new effluent limitations for Mercury, Nickel, Thallium, and Zinc. Therefore, interim limits have been set as follows:

1. The governing Water Quality Objective (WQO) for chromium (VI) is 11.43 µg/L, the saltwater aquatic life criteria contained in the CTR. Chromium (VI) has reasonable potential to exceed water quality objectives, and final Water Quality Based Effluent Limitations (WQBELs) are required. The WQBELs calculated pursuant to State Implementation Policy (SIP) procedures are 8.12 µg/L monthly average and 16.29 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for chromium (VI) is required. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. The previous permit did not contain an effluent limit for chromium (VI). Based on data provided by the discharger, the maximum effluent concentration (MEC) reported for chromium VI was 30 µg/L. Therefore, the interim effluent limit is set equal to the MEC of 30 µg/L (daily maximum), and 30 µg/L (monthly average).

2. The governing WQO for copper is 3.7 µg/L, the saltwater aquatic life criteria contained in the CTR. Copper has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 2.76 µg/L monthly average and 5.78 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for copper is required. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. The previous permit did not contain an effluent limit for copper. Based on data provided by the discharger, the maximum effluent concentration (MEC) reported for copper was 20 µg/L. Therefore, the interim effluent limit is set equal to the MEC of 20 µg/L (daily maximum), and 20 µg/L (monthly average).

3. The governing WQO for mercury is 0.05 µg/L, the human health criteria contained in the CTR. As noted in above, mercury has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 0.05 µg/L monthly average and 0.10 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for mercury is required. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. The previous permit did not contain an effluent limit for mercury. Based on data provided by the discharger, the maximum effluent concentration (MEC) reported for mercury was 0.20 µg/L. Therefore, the interim effluent limit is set equal to the MEC of 0.2 µg/L (daily maximum), and 0.2 µg/L (monthly average).

4. The governing WQO for Nickel is 8.28 µg/L, the saltwater aquatic life criteria contained in the CTR. Nickel has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 6.78 µg/L monthly average and 13.61 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for Nickel is required. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. The previous permit did not contain an effluent limit for Nickel. Based on data provided by the discharger, the maximum effluent concentration (MEC) reported for nickel was 10 µg/L, which is lower than the calculated WQBEL of 13.61 µg/L daily maximum, but greater than the monthly average. Therefore, based on the data reported by the Discharger the facility can immediately meet the proposed daily maximum effluent limit but not the

proposed monthly effluent limit. The interim effluent limit for the monthly average limit is set equal to the MEC of 10 µg/L and the daily maximum effluent limit is set equal to the final limit of 13.61 µg/L.

5. The governing WQO for thallium is 6.3 ug/L, the human health criteria contained in the CTR. Thallium has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 6.30 µg/L monthly average and 12.64 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for thallium is required. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. The previous permit did not contain an effluent limit for thallium. Based on data provided by the discharger, the maximum effluent concentration (MEC) reported for thallium was 70 µg/L. Therefore, the interim effluent limit is set equal to the MEC of 70 µg/L (daily maximum) and 70 µg/L (monthly average).

6. The governing WQO for zinc is 85.62 µg/L, the saltwater aquatic life criteria contained in the CTR. Zinc has reasonable potential to exceed water quality objectives, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 51.78 µg/L monthly average and 95.14 µg/L daily maximum. The Discharger indicated in its February 17, 2005 Feasibility Study that it is infeasible to comply immediately with the WQBELs. The previous permit contains a criterion maximum concentration and a criterion concentration (4-day average) effluent limit of 120 µg/L for zinc. As discussed in Section IV, the effluent limits established in previous Order 00-072 were set equal to the proposed CTR water quality criteria expressed as dissolved and calculated using a worst case receiving water hardness of 100 mg/L hardness in the Strout Drain. These previous limits were interpreted as monthly average of 120 µg/L and daily maximum of 120 µg/L effluent limitations. According to Section 2.2.1 of the SIP, interim numeric limits must be based on either the current treatment facility performance or on existing permit limitations, whichever is more stringent. Based on data provided by the discharger, the maximum reported daily concentration for zinc was 123 µg/L and the maximum monthly average reported concentration was 112 µg/L. The reported maximum daily value exceeds the previous daily maximum effluent limit of 120 µg/L, and the reported maximum monthly average concentration is less than the previous monthly average limit of 120 µg/L. Therefore, in accordance with the SIP, the interim effluent limits for zinc in the proposed Order are set equal to the previous daily effluent limits for zinc of 120 µg/L, and the maximum monthly average reported concentration for zinc of 112 µg/L.

Constituents	Unit	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
Chromium (VI) (interim)	µg/L	June 29, 2005	30	30
Chromium (VI) (final)	µg/L	May 18, 2010	8.0	16
Copper (interim)	µg/L	June 29, 2005	20	20
Copper (final)	µg/L	May 18, 2010	2.8	5.8
Mercury (interim)	µg/L	June 29, 2005	0.2	0.2
Mercury (final)	µg/L	May 18, 2010	0.05	0.10
Nickel (interim)	µg/L	June 29, 2005	10	14
Nickel (final)	µg/L	May 18, 2010	6.8	14
Thallium (interim)	µg/L	June 29, 2005	70	70
Thallium	µg/L	May 18, 2010	6.3	13

Constituents	Unit	Date Effluent Limit Becomes Effective	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
(final)				
Zinc (interim)	µg/L	June 29, 2005	112	120
Zinc (final)	µg/L	May 18, 2010	52	95

F. Land Discharge Specifications - NOT APPLICABLE

Discharges to the evaporation/percolation ponds are regulated under a separate order issued by the Regional Board. The current order applicable to this discharge is Order No. 00-044.

G. Reclamation Specifications - NOT APPLICABLE

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

The receiving water limitations in the proposed Order are based upon the water quality objectives contained in the Basin Plan.

B. Groundwater

The receiving water limitations for groundwater in the proposed Order are based upon the water quality objectives contained in the Basin Plan.

VI. MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this facility.

A. Influent Monitoring – NOT APPLICABLE

B. Effluent Monitoring

Monitoring for those pollutants expected to be present in the Monitoring Location M-001 at Discharge Point 001 will be required as shown on the proposed monitoring and reporting program (Attachment E). The proposed monitoring plan carries forward monitoring requirements from previous Order 00-072 and includes additional monitoring required by the SIP and for effluent limits being implemented through the proposed Order.

Previous Order 00-072 required effluent monitoring for chlorine, pH, temperature, flow, TSS, TDS, zinc, ammonia, settleable matter, and VOCs. Monitoring for these pollutants in the proposed permit are carried over from the previous permit. In addition, monitoring for lead selenium, silver, chromium (VI), copper, mercury, nickel, and thallium are included to determine compliance with the effluent limits in the proposed permit. According to the SIP, the Discharger is required to monitor the effluent for the CTR priority pollutants, to determine reasonable potential. Accordingly, the Regional Board is requiring that the Discharger conduct effluent monitoring of the CTR priority pollutants.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. This Order includes limitations for acute and chronic toxicity, and therefore, monitoring requirements are included in the MRP (Attachment E) to determine compliance with the effluent limitations established in Limitations and Discharge Requirements, Effluent Limitations, Section IV.A.1.a of this Order.

Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. Therefore, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary.

The Whole Effluent Toxicity (WET) Testing Requirements contained in the Attachment E, Monitoring and Reporting Program, Section V were developed based on the Draft National Whole Effluent Toxicity Implementation Guidance Under the NPDES Program developed by USEPA (Docket ID. No. OW-2004-0037). This is the most current guidance available to the Regional Board. This Order includes a reopener to allow the requirements of this section to be revised pending the issuance of final guidance or policies developed by either the USEPA or State Water Board.

D. Land Discharge Monitoring – Not Applicable

E. Receiving Water Monitoring

1. Surface Water

Monthly monitoring for temperature, pH, and dissolved oxygen in downstream receiving water is required in the previous permit. The monthly monitoring requirements for these parameters in the downstream receiving water proposed permit are carried over from the previous permit. The facility is also required to perform general observations of the receiving water when discharges occur and report the observations in the monitoring report. Attention shall be given to the presence or absence of: floating or suspended matter, discoloration, aquatic life, visible film, sheen or coating, and fungi, slime, or objectionable growths. These requirements are also carried over from the previous permit.

Upstream monitoring is not required in the proposed Order because monitoring is infeasible as the Strout Drain upstream of the discharge point is an underground pipe that is not accessible by the Discharger.

2. Groundwater - Not Applicable

F. Other Monitoring Requirements

1. BMPP Status and Effectiveness Report

A BMPP monitoring and reporting is being required is to ensure that the BMPP is being implemented, monitored and revised as needed based on a regularly scheduled basis.

2. Chemical Use Report

Chemical use, storage and disposal monitoring and reporting are required to ensure the Board is adequately notified of changes in chemical use and of potential sources of pollutants in wastewaters and storm water discharged from the site.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR §§122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

B. Special Provisions

1. Re-Opener Provisions

This Order has included a number of reopener provisions in accordance with federal NPDES regulations and the California Water Code to allow this Order to be reopened to modify or add effluent limitations, provisions, monitoring and other requirements to address TMDLs, CTR monitoring, and new standards and policies.

2. Special Studies and Additional Monitoring Requirements

a. **Toxicity Identification Evaluations or Toxicity Reduction Evaluations.** This provision is based on the SIP, Section 4, Toxicity Control Provisions.

b. **Translator Study.** This provision is based on the SIP that allows the use of a translator for metals and selenium different than the U.S. EPA conversion factor, provided the discharger requests this action and completes a translator study within two years from the date of the issuance of this permit as stated in the SIP.

c. **Pollutant Minimization Study.** This provision is based on the SIP, Section 2.1, Compliance Schedules

3. Best Management Practices and Pollution Prevention

The discharger uses, stores, handles and disposes of materials, chemicals, and wastes at the facility, and conducts operational and maintenance activities to its facility and equipment that are potential or existing sources of pollutants in storm water runoff and wastewater discharged from the facility. This Order prohibits the discharger from causing or threatening to cause a pollution or nuisance and from degrading groundwater. The discharger does not currently implement treatment technologies to reduce pollutants in its wastestream or stormwater. Therefore, this Order requires the discharger to develop and implement a Best Management Practices Plan (BMPP) that entails site-specific plans, procedures, and practices to minimize the amount of pollutants entering wastewater and storm water discharges from materials being stored and activities being conducted throughout the entire facility. To ensure the discharger considers and implements appropriate and effective BMPs, the discharger is required to consider implementing BMPs contained in the U.S. EPA *Guidance Manual for Developing Best Management Practices (BMPs)* (EPA 833-B-93-004) or equivalent alternatives when developing its BMPP.

4. Compliance Schedules

This Order establishes new final effluent limitations for lead, chromium (VI), copper, mercury, nickel, thallium, and zinc. This Order also contains interim effluent limitations and a compliance schedule that provides the Discharge time to bring their facility into compliance with the newly established final limits. In accordance with Section 2.1 of the SIP, interim limits and compliance schedules can only be provided by the Board after the discharger has submitted a report that demonstrates and justifies that it is infeasible for the discharger to achieve immediate compliance with newly established final effluent limitations. Infeasible means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account

economic, environmental, legal, social and technological factors. The Discharger submitted an infeasibility report on February 17, 2005 providing adequate justification that meeting the proposed new limits is not feasible upon adoption of this Order. The report also provided a work plan and time schedule to bring the facility into compliance. Based on this report, the Discharger is to bring its facility into compliance as soon as reasonably possible but not later than the expiration date of this Order.

The provision for compliance schedule is based on Section 2.1 (Compliance Schedules) of the SIP. The proposed permit allows the Discharger up to 5 years from the date of issue of the proposed permit to be in compliance with the final effluent limitations for chromium (VI), copper, mercury, nickel, thallium, and zinc. Based on Regional Board's BPJ, 5 years is sufficient for the Discharger to achieve the final effluent limitations for the pollutants. The Discharger is required to develop a compliance and a pollution minimization plan to ensure that the Discharger achieves compliance with the final limitations. Annual reporting is required to inform the Regional Board about the progress made by the Discharger to achieve compliance with the final limitations within the specified time. During the interim period, the Discharger is required to meet the interim limitations derived from facility performance data.

5. Construction, Operation, and Maintenance Specifications

a. **Facility and Treatment Operation.** To ensure the discharger properly operates and maintains all systems and components of its operation, its facilities and BMPs shall be inspected and maintained on a regular basis. Records shall be kept and reported annually or made available to the Regional Board upon demand.

b. **Spill Response Plan.** Chemicals and other liquid materials are stored, handled and disposed at the site that may be discharged with runoff or wastewaters from the facility if spilled. To prevent spills and ensure proper cleanup to spills that occur, the facility was required under previous Order 00-072 to develop a Spill Response Plan. The proposed order requires the discharger to review its current Plan and revise it if needed, subject to the review and approval of the Regional Board staff.

6. Special Provisions for Municipal Facilities (POTWs Only) - NOT APPLICABLE

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for Heber Geothermal Company. As a step in the WDR adoption process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Board has notified the permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided public notice in the Imperial Valley Press.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Board, written comments should be received at the Regional Board offices by 5:00 p.m. on **May 25, 2005.**

C. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **June 29, 2005**
Time: **10:00 a.m.**
Location: **City Council Chambers**
City of La Quinta
78-495 Calle Tampico
La Quinta, CA 92253

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is **http://www.waterboards.ca.gov/coloradoriver** where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Board by calling 760 346-7491.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Jose Cortez at (760) 776-8963.

Attachment G – Summary Water Quality-Based Effluent Limit Calculations

The water quality-based effluent limits developed for this Order are summarized below and were calculated as described in the methodology summarized in Attachment F, Fact Sheet Section IV.C.4 of this Order.

	Human Health Calculations			Aquatic Life Calculations											Selected Limits	
	Human Health			Saltwater / Freshwater												
Priority Pollutant	AMEL = ECA = C hh (1)	MDEL/AMEL multiplier	MDEL hh	ECA acute = C acute (1)	ECA acute multiplier	LTA acute	ECA chronic = C chronic (1)	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier 95	AMEL aquatic life	MDEL multiplier 99	MDEL aquatic life	AMEL	MDEL
	ug/L		ug/L	ug/L		ug/L	ug/L		ug/L	ug/L					ug/L	ug/L
Chromium (VI)	n/a	n/a	n/a	16.9	0.32	5.2	11.4	0.53	6.03	5.23	1.55	8.1	3.11	16	8.1	16
Copper	n/a	n/a	n/a	5.8	0.32	1.9	3.7	0.53	1.97	1.9	1.55	2.9	3.11	5.8	2.8	5.8
Mercury	0.05	2.01	0.10	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.55	n/a	3.11	n/a	0.05	0.1
Nickel	4600	2.01	9228	75	0.32	24	8.3	0.53	4.37	4.4	1.55	6.8	3.11	14	6.8	14
Thallium	6.3	2.01	12.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.55	n/a	3.11	n/a	6.3	13
Zinc	n/a	n/a	n/a	95	0.38	35.7	85.6	0.58	50.01	35.7	1.45	52	2.66	95	52	95

Notes:

C = Water Quality Criteria
hh = human health
AMEL = Average monthly effluent limitation
MDEL = Maximum daily effluent limitation
ECA = Effluent concentration allowance
LTA = Long-term average concentration