

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

ORDER NO. R7-2004-0103

**WASTE DISCHARGE REQUIREMENTS  
FOR  
PACIFIC GAS AND ELECTRIC, OWNER/OPERATOR  
GROUNDWATER REMEDIATION FACILITY**

Southeast of Needles – San Bernardino County

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

1. The Topock Compressor Station is a natural gas compressor station used for transmission of natural gas by pipeline. Pacific Gas and Electric Company (PG&E), 77 Beale Street, San Francisco, CA 94105, is the owner and operator of the Topock Compressor Station and proposed Groundwater Remediation Facility. The proposed location for the Groundwater Remediation Facility is San Bernardino County Assessor's parcel No. 650-151-06. PG&E is currently in the process of purchasing the land from the Metropolitan Water District. PG&E is hereafter referred to either as PG&E or the Discharger.
2. The Topock Compressor Station Class II surface impoundments, proposed groundwater extraction wells and proposed conveyance piping are located on land owned or managed by the U.S. Bureau of Land Management (BLM). BLM is the federal administering agency for the land.
3. From 1951 to 1964, PG&E discharged untreated wastewater containing hexavalent chromium from the compressor station cooling tower to percolation beds in Bat Cave Wash, an ephemeral stream bed draining into the Colorado River.
4. In 1964, PG&E began treatment of blow down water by reduction of hexavalent chromium to trivalent chromium (chrome III) prior to discharge to the percolation beds. On August 14, 1969, the Regional Board adopted Resolution No. 69-25 prohibiting PG&E from discharging wastewater containing hexavalent chromium. At approximately the same time, PG&E began disposing of the treated blow down water by subsurface injection at well PGE8.
5. On November 6, 1970, PG&E submitted a Report of Waste Discharge for disposal of 0.030 million gallons per day (mgd) of industrial wastewater from cooling tower operations into one on-site lined basin designed by a California registered civil engineer.
6. On December 10, 1970, the Regional Board adopted Resolution No. 70-72 to regulate the proposed discharge of cooling tower wastewater into the one on-site lined basin.
7. On September 11, 1975, the Regional Board rescinded Resolution No. 70-72 and adopted Board Order No. 75-52.
8. Board Order No. 75-52 permitted a maximum of 0.030 mgd of industrial wastewater containing chromate to be discharged to four lined evaporative basins. Also, the Board Order prohibited the discharge of wastewater to the Colorado River or to any channel draining to the Colorado River. In addition, the Board Order specified that chemical residues obtained by chemical flocculation or evaporation of process wastewater shall be discharged only at a solid waste disposal site approved to receive these wastes.
9. On October 2, 1985, the Regional Board rescinded Board Order No. 75-52 and adopted Board Order No. 85-99.

10. Board Order No. 85-99, allowed the discharger to replace the hazardous chromate-based cooling tower water treatment process with phosphate-based inhibitors. Phosphate-based inhibitors are in use today.
11. On January 27, 1988, the Regional Board rescinded Board Order No. 85-99 and adopted Board Order No. 88-30, which was revised on March 23, 1988.
12. Revised Board Order No. 88-30 allowed discharge to four new Class II surface impoundments. PG&E closed the four existing lined evaporative basins along with all hazardous waste facilities at the Topock Compressor Station. Closure was done in compliance with closure requirements of 40 CFR Part 265 and Subchapter 15, Chapter 3, Title 23 of the California Code of Regulations
13. On May 14, 1998, Board Order No. 88-30 was rescinded and Board Order No. 98-050 was adopted.
14. The ponds are currently regulated under Waste Discharge Requirements (WDRs) Order No. 98-050.
15. On May 10, 1995, PG&E notified the Regional Board Office that the results of analyses of groundwater samples collected from two abandoned production wells at Topock located approximately 2000 feet northeast of the former percolation ponds and 1700 feet southwest of the Colorado River, indicated concentrations of 2,300 parts per billion (ppb) and 2,850 ppb total chromium and concentrations of 1,480 ppb and 2,340 ppb hexavalent chromium for the two wells respectively. The samples were collected from a depth of approximately 120 feet below ground surface (bgs). The source of pollution is believed to be historical discharges to the Bat Cave Wash and is not associated with the current evaporation basins
16. The California Department of Health Services has set the Maximum Contaminant Level (MCL) for total chromium in drinking water at 50 ppb.
17. On February 26, 1996, the Department of Toxic Substances Control (DTSC) and PG&E entered into a Corrective Action Consent Agreement (CACA) at the Topock Gas Compressor Station due to hazardous levels of chromium found in the groundwater. DTSC is the lead agency in the Resource Conservation and Recovery Act (RCRA) investigation under the CACA.
18. Under the terms of the CACA, PG&E agreed to conduct a RCRA Facility Investigation (RFI), and to implement appropriate corrective action measures. The draft RFI was submitted in May, 2000. Results of the RFI indicated hexavalent chromium in a groundwater plume at concentrations of 13,000 ppb located 600 feet from the Colorado River at monitoring well cluster MW-20.
19. On June 30, 2004 DTSC directed PG&E to prepare and immediately implement Interim Measure No. 3 to expand existing groundwater extraction and management facilities to address hydraulic control of the chromium (VI) plume at the Topock site.
20. On June 30, 2004, DTSC issued a Notice of Exemption (NOE) for the proposed project summarized in Interim Measure No. 3. The NOE addresses the California Environmental Quality Act (CEQA) requirements for an Emergency Project, Title 14, Section 15269(c) providing for actions necessary to prevent an emergency.
21. On July 8, 2004 PG&E submitted Summary of Proposed Project for Interim Measures No.3 – Revision 1 that provided a general summary of the proposed project. The proposal describes the method of treatment to be used and means of disposal of treated water and waste products. They are as follows:
  - a. Discharge to Land - Subsurface injection to one or more of three proposed injection well fields. Up to ten injection wells are proposed;

- b. Discharge to Topock Compressor Station Class II surface impoundments - Reuse of treated groundwater in the Compressor Station cooling tower;
  - c. Discharge to Surface Water - Discharge of treated groundwater to the Colorado River under the National Pollutant Discharge Elimination System (NPDES).
22. On July 29, 2004 PG&E submitted an application and Report of Waste Discharge for a permit to discharge treated groundwater by three methods of disposal. A separate application was submitted for each method.
  23. This Board Order only addresses discharge by subsurface injection Discharge to the Topock Compressor Station Class II surface impoundments and discharge to the Colorado River are addressed in separate Board Orders.
  24. The discharger proposes operation of a treatment facility for implementation of Interim Measures No. 3 to address hydraulic control of the contaminated groundwater plume boundaries and prevent contaminated groundwater from entering the Colorado River. The design flow for the treatment facility is 135 gallons per minute (gpm), with a maximum capacity of 150 gpm of contaminated groundwater.
  25. The discharger proposes to discharge a maximum of 135 gallons per minute (gpm) of treated groundwater into one or more of three proposed injection well fields located on San Bernardino County Assessor's parcel No. 650-151-06. PG&E is currently in the process of purchasing the land from the Metropolitan Water District. The final effluent will be composed of RO permeate that may be blended with RO concentrate or microfilter water from the treatment facility. It will be discharged to the groundwater on the west side of Parcel 650-151-06, as indicated on Attachment "A" incorporated herein and made a part of this Board Order.
  26. The extracted groundwater will be treated with chemical reduction, precipitation, and solids removal by gravity or clarifier. Ferrous chloride will be used to reduce Cr (VI) to Cr (III). The precipitated solids containing Cr (III) and Fe (III) will be removed by gravity settling and microfiltration. Reverse Osmosis (RO) will be used as a polishing step for the treated water to reduce Total Dissolved Solids (TDS). Under this Order, RO concentrate and liquids may be discharged directly to the lined ponds owned and operated by PG&E at the Topock Compressor Station or to an appropriate disposal facility. Residual solids will be disposed according to federal and state regulations.
  27. The discharger proposes to use the following chemicals for the treatment of extracted groundwater:

<u>Name of Chemicals</u>	<u>Purpose</u>
Ferrous Chloride	Chemical Reducing Reagent
Sodium Hydroxide	pH Control
Sulfuric Acid	pH Control
Antiscalant Formulation	Mineral Control
Anionic Polymer	Particle Setting and Solids Dewatering
Sodium Hypochlorite Solution	Microfilter Cleaning
Citric Acid Cleaner	Microfilter and RO Cleaning
Hydrochloric Acid Solution	Microfilter Cleaning

Nonionic Surfactant	Microfilter and RO Cleaning
Sodium Metabisulfite	RO Membrane Preservation
Sodium Bicarbonate	pH Control

28. The Report of Waste Discharge application described the proposed discharge (RO Permeate) as follows:

<u>Parameter</u>	<u>Units</u>	<u>Average</u>	<u>Maximum</u>
Aluminum	mg/L <sup>1</sup>	0.05	0.1
Ammonia (as N)	mg/L	1.5	3.0
Barium	mg/L	0.3	0.98
Boron	mg/L	1.9	3.6
Color	units	15	30
Copper	mg/L	0.02	0.04
Flow	gpm <sup>2</sup>	80	200
Fluoride	mg/L	0.3	0.6
Hexavalent Chromium	mg/L	0.008	0.016
Iron (total)	mg/L	0.3	0.6
Lead	mg/L	0.002	0.004
Manganese	mg/L	0.05	0.1
Molybdenum	mg/L	0.01	0.02
Nickel	mg/L	0.012	0.024
Nitrate/Nitrite as N	mg/L	10	20
pH	units	7.5	8.4
Sulfate	mg/L	250	500
Summer Temperature	° F	80	100
TDS	mg/L	500	1000
Total Chromium	mg/L	0.025	0.050
Turbidity	NTU	5	10
Winter Temperature	° F	80	85
Zinc	mg/L	0.08	0.10

29. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) as amended to date designates the beneficial uses of ground and surface waters in the Region. The Basin Plan contains water quality objectives for the Colorado River and the Piute Hydrologic Unit.

30. The beneficial uses of the Colorado River are:

- a. Municipal supply (MUN)
- b. Agricultural supply (AGR)
- c. Aquaculture (AQUA)
- d. Industrial supply (IND)
- e. Groundwater recharge (GWR)
- f. Water contact recreation (REC I)
- g. Non contact water recreation (REC II)
- h. Warm freshwater habitat (WARM)
- i. Cold freshwater habitat (COLD)
- j. Wildlife habitat (WILD)
- k. Hydropower generation (POW)
- l. Preservation of rare and endangered species (RARE)

<sup>1</sup> Milligrams per Liter

<sup>2</sup> Gallons per Minute

31. The beneficial uses of ground waters in the Piute Hydrologic Unit are:
  - a. Municipal supply (MUN)
  - b. Industrial supply (IND)
  - c. Agricultural supply (AGR)
32. 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.
33. The State Water Resources Control Board (SWRCB) adopted Order No. 97-03-DWQ (General Permit No. CAS000001), specifying waste discharge requirements for discharges of storm water associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent by industries to be covered under the Permit.
34. The proposed discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16. If terms of the permit are met, the impact on water quality will be insignificant, including potential impacts on a municipal water source, which is the beneficial use most likely affected by the discharge.
35. In accordance with the California Environmental Quality Act (CEQA), DTSC, acting as the lead agency, has filed a Notice of Exemption for the Interim Measure 3 Emergency Groundwater Extraction and Management project at Pacific Gas and Electric Company, Topock Compressor Station. On July 1, 2004, the NOE (SCH#2004078010) was filed with the State Clearing House. The NOE states, in part: "In February 2004, [DTSC] directed [PG&E] to initiate immediate pumping, transport, and disposal of groundwater at the Topock site to ensure that groundwater containing chromium does not reach the Colorado River. Due to the influence of the Colorado River stage on groundwater levels . . . , extracting groundwater at higher rates will be necessary to maintain the stated goal of hydraulic control." The NOE further describes the project as follows: "The critical elements for this proposed project are the piping, conveyance of groundwater, construction of temporary treatment facilities, and development of a disposal method for the treated water.
36. DTSC concludes in the NOE that the project is statutorily exempt under Title 14 CCR Section 15269(c) (and Public Resources Code Section 21080(b)(4)) as an action to prevent or mitigate an emergency. The NOE states: "These project activities are necessary to prevent or mitigate an emergency situation wherein the waters of the Colorado River may be impacted with a hazardous constituent, chromium, which is in contaminated groundwater in close proximity to the river. Immediate action is necessary to contain and reverse the flow of groundwater away from the Colorado River. Commencement of the development of additional extraction, treatment, and treated water disposal capacity is urgent to assure that increased pumping rates will be available to respond to impending fluctuations of the Colorado River level.
37. The Regional Board has reviewed the NOE prepared by DTSC. The Regional Board concurs that an emergency condition exists because the flow of groundwater to the Colorado River has not yet been contained. It is necessary and desirable to have in place alternative disposal options to accommodate increased extraction and treatment rates (resulting in the need for increased disposal capacity) that may be required to contain the groundwater flow to the river. While the duration of the Interim Measures has not been determined, it is appropriate to limit the term of this Order as described in Provision No. 23, by which time it is reasonable to conclude that DTSC will have undertaken an environmental analysis of all disposal alternatives.

38. The Board has notified the discharger and all known interested agencies and persons of its intent to issue waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.
39. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the discharger shall comply with the following:

A. Effluent Limitations

1. Representative samples of wastewater discharged to from the treatment system shall not contain constituents in excess of the limits indicated below. The discharge to the groundwater shall be monitored at a location which is acceptable by the Regional Board's Executive Officer or his designee:

Constituent	Unit	Average Monthly Effluent Limit	Maximum Daily Effluent Limit
Chromium (VI)	$\mu\text{g/L}^3$	8	16
Chromium (Total)	$\mu\text{g/L}$	25	50

2. The hydrogen ion (pH) of the effluent shall be maintained within the limits of 6.5 to 8.4.
3. The effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to a human health.

B. Prohibitions

1. Bypass, overflow, discharge or spill of untreated or partially treated waste is prohibited.
2. The discharge of waste to land not owned or controlled by the discharger is prohibited.
3. Discharge of treated wastewater at a location or in a manner different from that described in this Board Order is prohibited.
4. The discharger shall not discharge waste in excess of the design treatment capacity of the disposal system.
5. The discharge shall not cause degradation of any water supply.
6. The discharger shall not cause degradation of any water supply in compliance with State Board Resolution No. 68-16.

C. Specifications

1. 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.
2. No changes in the type or amount of treatment chemicals added to the process water as described in this Board Order shall be made without the written approval of the Regional Board's Executive Officer.

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<sup>3</sup> micrograms per Liter

3. 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. The facility includes extraction wells, treatment plant, conveyance system, injection wells, and monitoring wells.

D. Provisions

1. The discharger shall comply with all conditions of this Board Order. Noncompliance constitutes a violation of the Porter-Cologne Water Quality Control Act, and is grounds for enforcement action; for Order termination, revocation and re-issuance, or modification of waste discharge requirements; or denial of an Order renewal application.
2. The discharger shall comply with "Monitoring and Reporting Program No. R7-2004-0103, and future revisions thereto, as specified by the Regional Board's Executive Officer.
3. 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.
4. The discharger shall develop an operation and maintenance plan for the management of the subsurface injection wells and conveyance system and submit a copy of the plan to the Regional Board's Executive Officer, or his designee, for review and approval at least 30 days prior to any discharge.
5. The discharger shall construct a representative groundwater monitoring system, acceptable to the Regional Board's Executive Officer, in the vicinity of the subsurface injection wells, which shall enable groundwater samples to be collected and analyzed as specified in Monitoring and Reporting Program R7-2004-0103 and revisions thereto. The discharger shall begin construction within 60 days of approval of the design plans, barring any extenuating circumstances reported to the Regional Board's Executive officer. The groundwater monitoring system shall include at a minimum one groundwater well up gradient and two groundwater wells down gradient of each injection well field.
6. The design plans for the groundwater monitoring system shall be submitted to the Regional Board's Executive Officer for approval within 45 days of adoption of this Board Order. Either a Professional Engineer (PE), Registered Geologist (RG), Certified Engineering Geologist (CEG), or a Certified Hydro Geologist (CHG) must certify the design plans.
7. 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.
8. A contingency plan detailing mitigation measures in the event of a plant upset shall be submitted for approval by the Regional Board's Executive Officer at least 30 days prior to any discharge. The plan shall provide an analysis of potential causes of system failure, the effect of failure, and the proposed course of corrective action.

9. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the California 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.
10. 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 significant spills that occur within the facility to the Regional Board office in accordance with the above time limits.
11. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
  - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
  - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
12. The discharger shall comply with the following:
  - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. 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 Board Order, and records of all data used to complete the application for this Board Order, for a period of at least 5 years from the date of the sample, measurement, report or application.
  - c. Records of monitoring information shall include:
    1. The date, exact place, and time of sampling or measurements.
    2. The individual(s) who performed the sampling or measurements.
    3. The date(s) analyses were performed.
    4. The individual(s) who performed the analyses.
    5. The results of such analyses.



13. 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.
14. Prior to any modifications in this facility, which would result in material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the discharger shall report all pertinent information in writing to the Regional Board and obtain revised requirements before any modifications are implemented.
15. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.
16. All storm water discharges from this facility must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies, regarding discharges of storm water to storm water drain systems or other courses under their jurisdiction.
17. Storm water discharges from the facility shall not cause or threaten to cause pollution or contamination.
18. Storm water discharges from the facility shall not contain hazardous substances equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.
19. The discharger shall provide a plan as to the method, treatment, handling and disposal of solids waste that is consistent with all State and Federal laws and regulations, including any and all prior approvals required by the Bureau of Land Management, and obtain prior written approval from the Regional Board specifying location and method of disposal, before disposing of treated or untreated solid waste.
20. This Board Order does not authorize violation of any federal, state, or local laws or regulations
21. This Board Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
22. The Regional Board directs the Executive Officer to forthwith prepare and file with the Office of Planning and Research, State Clearinghouse, a Notice of Exemption under Public Resources Code Section 21080(b)(4) and Title 14, California Code of Regulations, Section 15269(c).
23. This Board Order expires no later than two years from the date of first discharge, but in no event later than January 31, 2007, unless specifically authorized by a future order of the Regional Board. 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 re-issuance, 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.

I, Philip A. Gruenberg, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the Regional Water Quality Control Board, Colorado River Basin Region, on October 13, 2004.

  
Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

**MONITORING AND REPORTING PROGRAM NO. R7-2004-0103**

**FOR  
PACIFIC GAS AND ELECTRIC COMPANY, OWNER/OPERATOR  
GROUNDWATER REMEDIATION FACILITY**

**Southeast of Needles – San Bernardino County**

**MONITORING**

1. 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" (40 CFR Part 136), promulgated by the USEPA.
2. Pursuant to the California Water Code (CWC) Section 13267, samples taken for Total Chromium shall be analyzed with a method having a method detection limit (MDL) of 1.0 ppb and samples taken for Chromium VI shall be analyzed with a method having a MDL of 0.2 ppb. The analytical results shall be reported consistent with actual observations by a California certified laboratory, and shall be reported in terms of the practical quantitation limit (PQL), if the MDL cannot be achieved. These requirements are necessary to ensure compliance with the Waste Discharge Requirements set forth in Board Order R7-2004-0103, determine the impact on the receiving groundwater, and confirm that the discharge of treated ground water does not violate Waste Discharge Requirements. Ground water monitoring in the area proposed for extraction has shown that these constituents are present at very high levels and the discharge is a potential threat to ground water and to the Colorado River.
3. Samples shall be collected at the location approved by the Regional Board's Executive Officer. If no location is specified, sampling shall be conducted at the most representative sampling point available.
4. If the facility is not in operation, or there is no discharge under this Order 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. No sampling or analysis is required during any reporting period if the facility is not operated during that period.
5. The discharger shall monitor the treatment facility influent, effluent, and receiving water in accordance with the following:

**TREATMENT FACILITY START UP PHASE AND START UP REPORTING**

1. The discharger shall inform the Regional Board in writing of the location of all sampling stations and the expected start up date at least 10 days prior to beginning operational start up.
2. During the start up phase of the ground water treatment facility, sampling of the system influent and effluent must be performed on the first (1<sup>st</sup>) and third (3<sup>rd</sup>) days of operation.
  - a. On the 1<sup>st</sup> day of operation, the system shall be allowed to run until at least three (3) extraction well volumes are removed and until three (3) consecutive readings taken at least one (1) hour apart for pH, specific conductivity, and temperature are within five (5) percent of each other. Discharge shall be conveyed to a holding tank or disposed at an offsite, permitted facility.

- b. Once these criteria are met, the treatment system effluent shall be sampled and submitted for analysis. During this phase of the start up, all treatment system effluent shall be discharged to a holding tank, or disposed at an offsite, permitted facility until the results of the 1<sup>st</sup> day analysis show that the effluent is in compliance with the effluent limitations set forth in Board Order R7-2004-0103.
  - c. If the analyses of the treatment system effluent collected during the 1<sup>st</sup> day of operation indicate that the effluent is in compliance, the system shall be operated with the treatment system effluent being discharged to the injection wells provided the analyses are received within 48 hours of sampling. If the discharge is not in compliance with the effluent limitations, it shall be conveyed to a holding tank or disposed at an offsite, permitted facility.
  - d. A second series of samples shall be collected on the 3<sup>rd</sup> day. If the samples from the 3<sup>rd</sup> day are in compliance, effluent from the treatment system shall continue to be discharged to the injection wells. If the discharge is not in compliance with the effluent limitations, it shall be conveyed to a holding tank or disposed at an offsite, permitted facility.
3. If the treatment system is shut down for more than 96 hours during start up phase, the start up and sampling procedures must be repeated.
  4. A report on the start up phase shall be submitted to the Regional Board no more than fifteen (15) calendar days after completion of the start up phase. The report should contain a summary of all monitoring results, copies of laboratory reports, Chain of custody forms, flow rates, and a description of any changes or modifications to the treatment system.

#### TREATMENT FACILITY REPORTING AFTER START UP PHASE

1. Upon completion of the start up phase, the discharger shall begin the normal monitoring and reporting for the daily operation and maintenance of the treatment system. The Treatment System Influent and effluent, sludge monitoring and operation and maintenance reporting shall be monitored as listed below in the following sections.

#### A. Groundwater Treatment System Influent

1. Extracted groundwater shall be analyzed for the following constituents immediately prior to treatment:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpm <sup>1</sup>	Metered	Continuous	Monthly
TDS	mg/L <sup>2</sup>	Grab	See Footnote <sup>3</sup>	Monthly
Turbidity	NTU <sup>4</sup>	Grab	See Footnote <sup>3</sup>	Monthly
Specific Conductance	µmhos/cm <sup>5</sup>	Grab	See Footnote <sup>3</sup>	Monthly
pH	pH units	Grab	See Footnote <sup>3</sup>	Monthly
Total Chromium	µg/L <sup>6</sup>	Grab	See Footnote <sup>3</sup>	Monthly
Chromium VI	µg/L	Grab	See Footnote <sup>3</sup>	Monthly
Aluminum	µg/L	Grab	Monthly	Monthly
Ammonia (as N)	mg/L	Grab	Monthly	Monthly
Antimony	µg/L	Grab	Monthly	Monthly

<sup>1</sup> gallons per minute reported as a monthly average

<sup>2</sup> mg/L = milligrams per Liter

<sup>3</sup> Samples shall be taken on the 1<sup>st</sup> and 3<sup>rd</sup> days during start up phase. Sampling will continue twice weekly for the first month, weekly for the following two months, and monthly thereafter.

<sup>4</sup> Nephelometric Turbidity Units

<sup>5</sup> micromhos per centimeter

<sup>6</sup> micrograms per Liter

Arsenic	µg/L	Grab	Monthly	Monthly
Barium	µg/L	Grab	Monthly	Monthly
Boron	mg/L	Grab	Monthly	Monthly
Copper	µg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	µg/L	Grab	Monthly	Monthly
Manganese	µg/L	Grab	Monthly	Monthly
Molybdenum	µg/L	Grab	Monthly	Monthly
Nickel	µg/L	Grab	Monthly	Monthly
Nitrate/Nitrite (as N)	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly
Total Iron	µg/L	Grab	Monthly	Monthly
Zinc	µg/L	Grab	Monthly	Monthly

**B. Groundwater Treatment System Effluent**

1. Treated groundwater shall be analyzed for the following constituents immediately after treatment:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpm	Metered	Continuous	Monthly
TDS	mg/L	Grab	See Footnote <sup>7</sup>	Monthly
Turbidity	NTU	Grab	See Footnote <sup>7</sup>	Monthly
Specific Conductance	µmhos/cm	Grab	See Footnote <sup>7</sup>	Monthly
pH	pH units	Grab	See Footnote <sup>7</sup>	Monthly
Total Chromium	µg/L	Grab	See Footnote <sup>7</sup>	Monthly
Chromium VI	µg/L	Grab	See Footnote <sup>7</sup>	Monthly
Aluminum	µg/L	Grab	Monthly	Monthly
Ammonia (as N)	mg/L	Grab	Monthly	Monthly
Antimony	µg/L	Grab	Monthly	Monthly
Arsenic	µg/L	Grab	Monthly	Monthly
Barium	µg/L	Grab	Monthly	Monthly
Boron	mg/L	Grab	Monthly	Monthly
Copper	µg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	µg/L	Grab	Monthly	Monthly
Manganese	µg/L	Grab	Monthly	Monthly
Molybdenum	µg/L	Grab	Monthly	Monthly
Nickel	vg/L	Grab	Monthly	Monthly
Nitrate/Nitrite (as N)	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly
Total Iron	µg/L	Grab	Monthly	Monthly
Zinc	µg/L	Grab	Monthly	Monthly

**C. Groundwater Monitoring**

1. The discharger shall submit an injection well field groundwater monitoring plan to the Regional Board's Executive Officer for approval at least 30 days prior to discharge. The monitoring plan shall include monitoring analytes and frequency.

<sup>7</sup> Samples shall be taken on the 1<sup>st</sup> and 3<sup>rd</sup> days during start up phase. Sampling will continue twice weekly for the first month, and weekly thereafter.

D. Groundwater Treatment System Reverse Osmosis Concentrate Monitoring

1. Reverse Osmosis Concentrate shall be analyzed for the following constituents:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpm	Metered	Continuous	Monthly
TDS	mg/L	Grab	See Footnote <sup>3</sup>	Monthly
Specific Conductance	µmhos/cm	Grab	See Footnote <sup>3</sup>	Monthly
pH	pH units	Grab	See Footnote <sup>3</sup>	Monthly
Total Chromium	mg/L	Grab	See Footnote <sup>3</sup>	Monthly
Chromium VI	mg/L	Grab	See Footnote <sup>3</sup>	Monthly
Antimony	mg/L	Grab	Monthly	Monthly
Arsenic	mg/L	Grab	Monthly	Monthly
Barium	mg/L	Grab	Monthly	Monthly
Beryllium	mg/L	Grab	Monthly	Monthly
Cadmium	mg/L	Grab	Monthly	Monthly
Cobalt	mg/L	Grab	Monthly	Monthly
Copper	mg/L	Grab	Monthly	Monthly
Fluoride	mg/L	Grab	Monthly	Monthly
Lead	mg/L	Grab	Monthly	Monthly
Molybdenum	mg/L	Grab	Monthly	Monthly
Mercury	mg/L	Grab	Monthly	Monthly
Nickel	mg/L	Grab	Monthly	Monthly
Selenium	mg/L	Grab	Monthly	Monthly
Silver	mg/L	Grab	Monthly	Monthly
Thallium	mg/L	Grab	Monthly	Monthly
Vanadium	mg/L	Grab	Monthly	Monthly
Zinc	mg/L	Grab	Monthly	Monthly

E. Groundwater Treatment System Sludge Monitoring

1. Representative composite sludge samples shall be taken from each treatment tank whose purpose is to accumulate sludge for disposal prior to transportation of the sludge offsite. If sludge is transported offsite more frequently than monthly, a representative sample shall be taken on a monthly or quarterly basis as specified below. Sludge samples shall be tested for the following constituents:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Fluoride	mg/kg <sup>8</sup>	Composite	See Footnote <sup>8a</sup>	Monthly
Total Chromium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Chromium VI	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Antimony	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Arsenic	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Barium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Beryllium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Cadmium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Cobalt	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Copper	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Lead	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly

<sup>8</sup> milligrams per kilogram

<sup>8a</sup> Each time sludge is transported offsite, unless sludge is transported offsite more frequently than monthly, in which case the sampling frequency shall be monthly.

Mercury	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Molybdenum	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Nickel	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Selenium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Silver	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Thallium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Vanadium	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Zinc	mg/kg	Composite	See Footnote <sup>8a</sup>	Monthly
Bioassay			See Footnote <sup>8b</sup>	Quarterly

2. The discharger shall report quarterly on the quantity, location and method of disposal of all sludge and similar solid materials being produced at the wastewater treatment facility.
3. The discharger shall quarterly collect one representative composite sample of sludge for each treatment tank and have an aquatic bioassay test performed on the samples. Report and select a procedure from the Static Acute Bioassay Procedure for Hazardous Waste Sample by the California Department of Fish and Game, Water pollution Control Laboratory, revised November 1988 or by other test methods approved by the California Department of Fish and Game. The discharger shall provide a report supporting any deviation from a standard procedure and must be approved by the Regional Board's Executive Officer.

#### OPERATION AND MAINTENANCE

1. The discharger shall inspect and document any operation/maintenance problems by inspecting each unit process. In addition, calibration of flow meters and equipment shall be performed in a timely manner and documented. Operation and Maintenance reports shall be submitted to the Regional Board Office twice-annually.

#### REPORTING

1. The discharger shall arrange the 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.
2. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurement(s);
  - b. The individual(s) who performed the sampling or measurement(s);
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or method used; and
  - f. The results of such analyses.
3. The results of any analysis taken more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.
4. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.

<sup>8b</sup> Each time sludge is transported offsite, unless sludge is transported offsite more frequently than quarterly, in which case the sampling frequency shall be quarterly.

5. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations".

6. A duly authorized representative of the discharger may sign the documents if:

- a. The authorization is made in writing by the person described above;
- b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
- c. The written authorization is submitted to the Regional Board's Executive Officer.

7. Reporting of any failure in the facility shall be as described in Provision No. 9 of Board Order R7-2004-0103. Results of any analysis performed as a result of a failure of the facility shall be provided within fourteen (14) days after collection of the samples.

8. The discharger shall attach a cover letter to the 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.

9. Daily, twice-weekly, weekly, and monthly monitoring reports shall be submitted to the Regional Board by the 15<sup>th</sup> day of the following month. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and September 15 of each year. semi-annual reports shall be submitted to the Regional Board by January 15 and July 15 of each year.

10. Submit monitoring reports to:

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

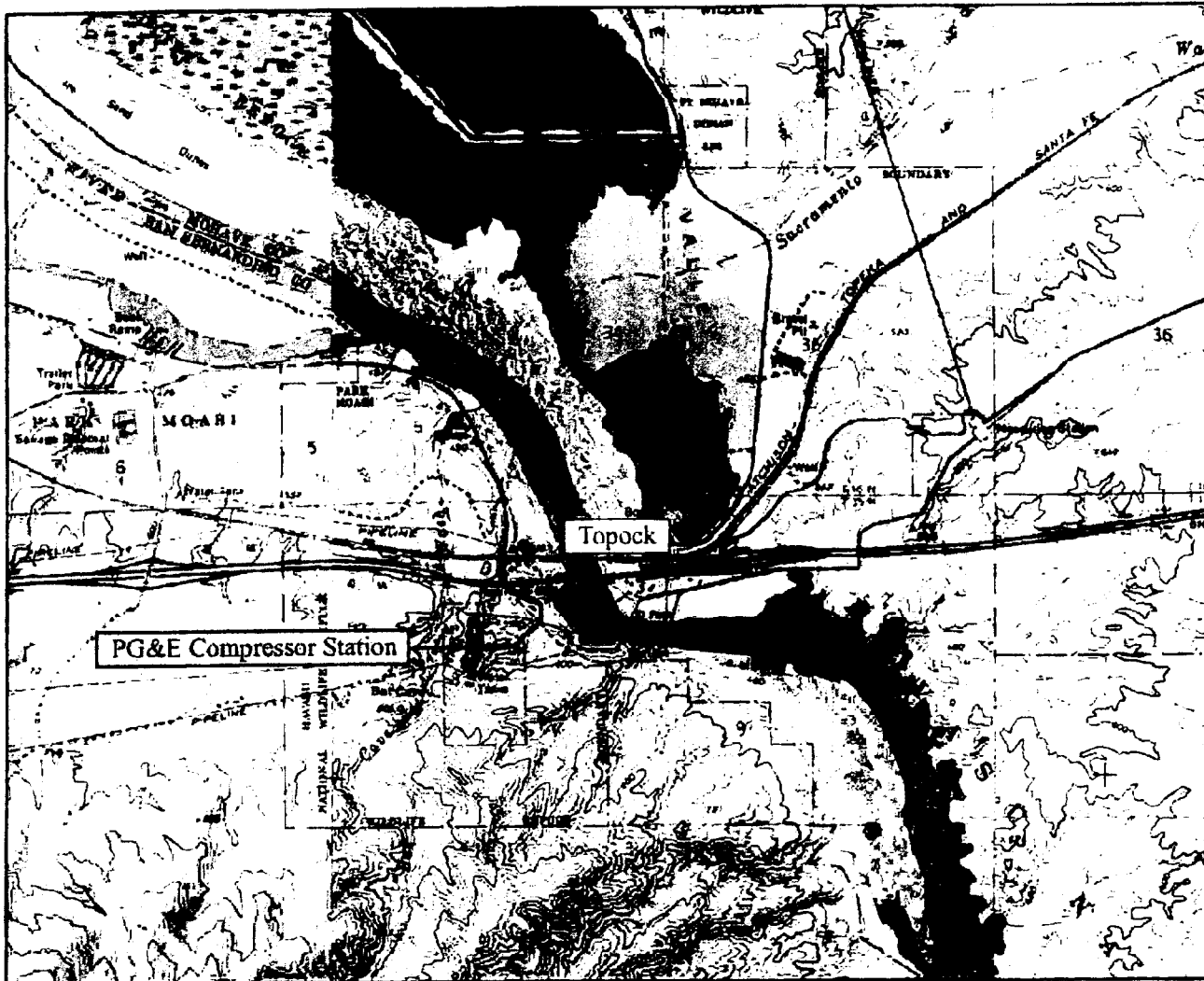
Ordered by:

  
Executive Officer

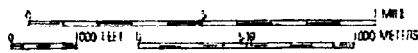
OCT 19 2004

Date

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**



Source: USGS topographic map from National Geographic TOPOI software



Scale 1:15,375

**PACIFIC GAS AND ELECTRIC, OWNER/OPERATOR  
GROUNDWATER REMEDIATION FACILITY  
Southeast of Needles – San Bernardino County**

**BOARD ORDER NO. R7-2004-0103**