

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**BOARD ORDER NO. R6V-2004-0034
WDID NO. 6B360303001**

**NEW WASTE DISCHARGE REQUIREMENTS
FOR**

**PACIFIC GAS AND ELECTRIC COMPANY
INTERIM PLUME CONTAINMENT AND HEXAVALENT CHROMIUM
TREATMENT PROJECT**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region (Regional Board), finds:

1. Dischargers

Pacific Gas and Electric Company (PG&E) submitted a Report of Waste Discharge (RWD) to conduct an Interim Plume Containment and Hexavalent Chromium Treatment Project (Project) at the Desert View Dairy located east of the community of Hinkley in San Bernardino County. The RWD consists of transmittals dated August 4, 2003, January 13, 2004, March 5, 2004, and reports listed in Attachment "C" – List of References. The RWD was deemed complete on March 5, 2004. PG&E proposes to discharge pumped ground water containing hexavalent chromium to a land treatment unit on the Desert View Dairy Property. The project is intended to provide containment of hexavalent chromium pollution in the ground water. PG&E owns the land on which the dairy is located. For the purposes of this Order (Order), PG&E is referred to as the "Discharger."

2. Facility

PG&E has proposed to construct and operate an interim Land Treatment Unit (LTU) encompassing approximately 80 acres on the Desert View Dairy to treat ground water polluted with hexavalent chromium [Cr(VI)]. The polluted ground water will be extracted and applied to the LTU through subsurface irrigation. The soils and vegetation in the LTU will reduce the Cr(VI) to trivalent chromium [Cr(III)]. The LTU on the Desert View Dairy is the facility to which the discharge occurs. The proposed drip irrigation system is part of what PG&E has called its "Interim Pumping Project" (Project), is planned as a temporary measure to limit further movement of the ground water plume containing Cr(VI). PG&E plans to operate the Project until a long-term ground water treatment system is constructed and operational. For the purposes of this Order, the LTU on the Desert View Dairy is referred to as the "Facility."

3. Facility Location

The Facility is located east of the community of Hinkley in San Bernardino County in the Harper Valley Subarea of the Mojave Hydrologic Unit within portions of Section 26, T10N, R3W and Section 2, T9N, R3W, SBB&M, as shown on Attachment "A," which is made a part of this Order.

4 Permit History

These are new Waste Discharge Requirements (WDRs) for a new facility. PG&E had operated a ground water remediation system at the East and Ranch LTUs located within 8,000 feet south of the proposed project location during 1991 to 2001 under the WDRs set forth in Board Order No. 6-91-917 and revised in Board Order No. 6-97-81.

5. Enforcement History

On December 29, 1987, the Executive Officer issued Cleanup and Abatement Order (CAO) No. 6-87-160 to the Discharger, ordering the investigation, cleanup and abatement of the effects of chromium in the soil and ground water, that were discharged at the PG&E Compressor Station. The selected remediation system consisted of the extraction of ground water for irrigation of pasture crops on the East and Ranch LTUs.

In June 2001, the Regional Board issued CAO 6-01-50 ordering PG&E to eliminate the threatened nuisance condition created at the East and Ranch LTUs due to the spray irrigation of chromium-polluted ground water to crops at these LTUs. In response to this order, PG&E shut down the ground water remediation system.

6. Reason for Action

In response to the termination of the prior remediation method, PG&E proposed a temporary measure to limit further movement of the ground water plume. The Regional Board is issuing WDRs for this new facility (LTU) proposed to receive the discharge of extracted ground water associated with a ground water containment and remediation system designed to protect the beneficial uses of downgradient ground water.

7. Site Geology

The soils underlying the Facility are comprised of interbedded sands, gravels, silts, and clays. The depth to bedrock is about 175 feet below the Facility. The nearest active fault is the northwest - southeast trending Lenwood fault located about one mile southeast of the Facility.

8. Site Hydrogeology and Hydrology

The hydrogeology in the vicinity of the LTU consists of an upper confined-to-semi-confined, aquifer, and a lower confined aquifer separated by approximately 20 feet of lacustrine clay that forms a regional aquitard.

The upper aquifer is approximately 80 feet thick and extends from 80 feet below the ground surface (bgs) to 160 bgs. The upper aquifer is comprised of interbedded gravels, silts, and clay and is divided into two major production zones, the "A" zone, and the "B" zone. Ground water flow in the upper aquifer is primarily to the north with an average gradient of 0.002 feet per foot.

The lower aquifer, or "C" zone, consists of semi-consolidated calcareous sediments, layers of silty sand, and minor amounts of clay. The lower aquifer extends from approximately 180 feet bgs to 230 bgs and is bounded at its base by competent crystalline rock.

The closest surface water body is the Mojave River, which is located approximately one mile southeast of the Facility.

9. Climatology

The precipitation in the area of the Facility is approximately three inches annually. The evaporation rate is approximately 74 inches annually.

10. Ground Water Quality

The ground water below the Desert View Dairy contains constituents from past and present agricultural activities, chromium from the PG&E plume, and naturally occurring constituents. The most significant constituents are chromium, nitrate and TDS. The ground water quality, based on data from one extraction well has total chromium [Cr(T)] concentration of 0.05 mg/L, a nitrate concentration of 9.35 mg/L (as nitrogen) and a TDS concentration of 997 mg/L. Within the capture zone of the ground water extraction system, nitrate concentrations range from less than 0.1 mg/L (as nitrogen) to a maximum of 62.2 mg/L. Within the same area, TDS ranges from 997 mg/L to a maximum of 3,884 mg/L. Cr(T) concentrations in the untreated extracted ground water are estimated to range from 0.001 mg/L to 0.295 mg/L.

The maximum contaminant levels (MCLs) for a municipal water source for these constituents are: 10 mg/L for nitrate as N; 500 mg/L for TDS (a California Secondary MCL); 1,000 mg/L for TDS (a California Primary MCL); and 0.050 mg/L for Cr(T). Therefore, some of the ground water in the capture zone does not presently support the beneficial use of a municipal and domestic supply.

The water quality goals for an agricultural water source for TDS is 450 mg/L (Water Quality for Agriculture - Ayers & Westcot). Therefore, some of the ground water in the capture zone does not presently support the beneficial use for an agricultural supply. The TDS concentrations are unsuitable for irrigation of some sensitive crops but are still suitable for moderately tolerable crops, such as alfalfa, that are expected to be grown in this area.

11. Project Description

The Project is comprised of a ground water extraction system and an 80-acre LTU. The ground water extraction system is designed to provide hydraulic containment of the chromium contamination plume. Three ground water extraction wells will provide the necessary hydraulic control of the leading edge of the plume by pumping an estimated average of 345 gallons per minute (gpm) to nine irrigation fields. The extraction field will be operated from September through May to provide a flow rate of approximately 300 gpm (0.432 million gallons per day (mgd)). During the months of June, July, and August, the extraction rate will be increased to approximately 450 gpm (0.648 mgd). The nine irrigated fields are classified as an LTU and consist of approximately 80 acres of cultivated grasses. These fields are shown on Attachment "B," which is made a part of

this Order. The LTU is designed primarily to treat hexavalent chromium in extracted ground water and convert it to trivalent chromium. Treatment will occur in the vadose zone from ground surface to a depth of five feet bgs. Natural soil properties will promote the reduction of hexavalent chromium Cr(VI) in the applied extracted ground water to less-mobile, less-soluble, and less-toxic trivalent chromium Cr(III) during crop cultivation. Based on ground water and vadose zone monitoring data from the East LTU that operated for almost nine years (1992 to 2001) using a similar remediation technology, Cr(VI) reduction in the LTU is expected to be approximately 95 percent. Analyses of data from plume monitoring wells show that Cr(T) concentrations may be as high as 0.295 mg/L. According to the baseline soil data obtained at the DVD in April 2004, the average Cr(T) concentration is 11.9 mg/kg (Cr(T) ranges from 5.7 mg/kg to 19.0 mg/kg). The increase of Cr(T) concentration in soil after 8 years of operation is estimated to be 0.5 mg/kg over the baseline. Using this number, after 8 years of continue operation, the Cr(T) concentration in the soil at the DVD would increase from 11.9 mg/kg to 12.4 mg/kg. The predicted Cr(T) concentration remaining in the soil at the end of the project would still be far below the USEPA Region 9 preliminary remediation goal (PRG) for residential soil of 210 mg/kg for Cr(T).

While the primary objective of the LTU is to treat hexavalent chromium, the application of extracted ground water to the irrigated fields will provide much-needed nitrogen to crops. This will have the secondary effect of reducing nitrate mass in ground water. Deep percolation of irrigation water below the LTU was predicted using unsaturated zone capillary characteristics and irrigation water application rates. Deep percolation of irrigation water is predicted to reach ground water after eight years. The long-term nitrate concentration in ground water will be approximately 9.0 mg/L after eight years when the vadose zone water encounters the upper aquifer.

The mass loading of TDS to the ground water will increase due to operation of the LTU. The estimated TDS concentration at the end of eight years of operation will be 1,400 mg/L in the ground water. The increase of TDS caused by the LTU operation does not render this water unusable for agricultural use for the types of crops typically grown in this area. Currently, ground water under the LTU does not meet the beneficial use of municipal and domestic supply due to the TDS levels.

12. Waste Classification

The chromium-contaminated extracted ground water is classified as a liquid designated waste under Section 20210 of Title 27 California Code of Regulations.

13. Waste Management Unit Classification

The first five feet of soils in the irrigation sites are classified as a Class II LTU in accordance with Section 20614 of Title 27 California Code of Regulations.

14. Authorized Disposal Sites

The LTU delineated on Attachment "B" is the only authorized disposal site.

15. Water Quality Protection Standard

A Water Quality Protection Standard (WQPS) is established in the Order for the Facility, and consists of constituents of concern (including monitoring parameters), concentration limits, monitoring points, and the point of compliance. The WQPS applies over the active life of the Facility, post-closure monitoring period, and the compliance period.

16. Land Uses

The land uses at, and surrounding, the Facility consist of residential, commercial, agricultural, and open desert land. The nearest residence, worker housing for dairy personnel, is located adjacent to the eastern boundary of the LTU.

17. Receiving Waters

The receiving waters are the ground waters of the Harper Valley Hydrologic Area of the Mojave Hydrologic Unit. The Department of Water Resources (DWR) designation for the Harper Valley Hydrologic Area is 628.42.

18. Lahontan Basin Plan

The Regional Board adopted a Water Quality Control Plan for the Lahontan Basin (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan.

19. Beneficial Ground Water Uses

The beneficial uses of the ground water of the Middle Mojave River Valley Ground Water Basin as set forth in the Basin Plan are:

- a. MUN - municipal and domestic supply;
- b. AGR - agricultural supply;
- c. IND - industrial supply;
- d. FRSH - freshwater replenishment; and
- e. AQUA - aquaculture.

20. Non-Degradation

In accordance with State Water Resources Control Board (SWRCB) Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*) and the Water Quality Control Plan for the Lahontan Region (Basin Plan) water degradation may be allowed if the following conditions are met: 1) any change in water quality must be consistent with maximum benefit to the people of the State; 2) will not unreasonably affect present and anticipated beneficial uses; and 3) will not result in water quality less than that prescribed in the Basin Plan; and 4) discharges must use the best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the State.

The application of extracted ground water to irrigate crops will cause some TDS and nitrate degradation of the ground water consistent with the effects of crop irrigation observed

throughout the watershed. Within the capture zone of the ground water extraction system, nitrate concentrations range from less than 0.1 mg/L to a maximum of 62.2 mg/L. TDS for the same area ranges from 997 mg/L to a maximum of 3,884 mg/L. However, the nitrate degradation will be temporary and improve over time as more nitrate mass is removed from ground water by extraction than is added from percolation. The long-term nitrate concentration in ground water will be approximately 9.0 mg/L after eight years of the operation when the vadose zone water encounters the upper aquifer. At the same period of the operation, the estimated TDS concentration of 1,400 mg/L in the aquifer below the LTU is well within the tolerance ranges of crop grown in the area. The TDS degradation will be localized, minor and will not further adversely impact present or future beneficial uses of the ground water in the area. The LTU and the ground water extraction system are designed to implement equivalent of the Best Practicable Technology as required by SWRCB's Resolution No. 68-16. The long-term benefit of the project will result in removal of chromium and nitrate from the ground water. The TDS concentration of 1,400 mg/L in the ground water will still be suitable for crops expected to be grown in the area. Therefore, the resulting water quality from this project will be consistent with the SWRCB's Resolution No. 68-16.

21. Constituents of Concern

The Constituents of Concern (COCs) consist of total chromium Cr(T), hexavalent chromium Cr(VI), nitrate (as N) and TDS.

22. Water Quality Data Evaluation

A statistical method for evaluation of monitoring data is necessary for the earliest detection of a statistically significant evidence of a release of waste from the Facility. Title 27 requires statistical analysis. The Monitoring and Reporting Program includes a method for statistical analysis.

23. Detection Monitoring

A Detection Monitoring Program (DMP) is designed to monitor the ground water for evidence of a release. Pursuant to Sections 20385 and 20420, Title 27 CCR, the Discharger is required to submit a DMP. The DMP is described in the Monitoring and Reporting Program No. R6V-2004-0034.

24. Evaluation Monitoring

An Evaluation Monitoring Program (EMP) may be required, pursuant to Sections 20385 and 20425, Title 27 CCR, to evaluate evidence of a release, if detection monitoring and/or verification procedures indicate evidence of a release.

25. Corrective Action

A Corrective Action Program (CAP) to remediate released wastes from the Facility may be required pursuant to Sections 20385 and 20430, Title 27 CCR, should results of an EMP warrant a CAP.

26. Closure and Post-Closure Maintenance

Once the Facility is no longer in use, it shall be closed as a land treatment unit (LTU) under Section 21420 of Title 27 California Code of Regulations. This Order requires the Discharger to prepare: (a) discrete plans for initiating and completing closure and post-closure maintenance activities; and (b) lump sum estimates of the costs to carry out the actions specified in the plans.

27. Reasonably Foreseeable Release

Pursuant to Section 20080 (a)(a) of Title 27, the Discharger is required to provide financial assurance for remediation of a reasonably foreseeable release. This Order requires the Discharger to prepare: (a) a plan for initiating and completing corrective action for a known or reasonably foreseeable release from the facility; and (b) a lump sum estimate of the costs to carry out the actions necessary to perform the corrective action.

28. Financial Assurance

This Order requires that evidence of financial assurance be annually submitted to Board staff along with updated closure cost estimates. In accordance with Section 22510, Chapter 7, Title 27, California Code of Regulations, the Discharger shall provide for adequate funding to pay for the cost of closure, post-closure maintenance, and remediation of the reasonably foreseeable release.

29. California Environmental Quality Act

The Project is a new project under CEQA and is subject to the provisions of the CEQA (Public Resources Code, Section 21000 et seq.) in accordance with Title 14, Section 15301, CCR. The Regional Board is the lead agency for this project under the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

An Initial Study describing the project was prepared by CH2M Hill on behalf of the Regional Board and PG&E. It was circulated under State Clearinghouse No. 2004051114 to satisfy CEQA with the Regional Board as Lead Agency. The Initial Study indicates the intent of the Regional Board to consider a Mitigated Negative Declaration.

In a public meeting on June 27, 2004, the Regional Board adopted a Resolution: certifying the Initial Study stating that the effects on the environment from the Project are not significant as mitigated; adopting a Mitigated Negative Declaration and a Mitigation Monitoring and Reporting Plan to satisfy CEQA; authorizing the Executive Officer to sign the Certificate of Fee Exemption and to transmit it to the California Department of Fish and Game in lieu of payment of the CDFG filing fee; and authorizing Regional Board staff to send a Notice of Determination to the State Clearinghouse.

The discharge described in these WDRs is consistent with the Negative Declaration and no new significant impacts are expected from the discharge allowed by these WDRs.

30. Notification of Interested Parties

The Regional Board has notified the Discharger and all known interested parties of its intent to adopt new WDRs for the project.

31. Consideration of Interested Parties

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

IT IS HEREBY ORDERED that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Discharge Limitations

1. The discharge to the Facility shall be limited to the extracted ground water from the Project extraction wells at the Desert View Dairy.
2. The maximum volume of discharge to the LTU in the months of September through May shall not exceed 0.432 million gallons in a 24-hour period (mgd).
3. The maximum volume of discharge to the LTU in the months of June through August shall not exceed 0.648 mgd.

B. Receiving Water Limitation

The peak discharge from the LTU is not expected to reach the ground water for about eight years according to unsaturated zone transport predictions produced by the Discharger's consultants.

The discharge of waste shall not cause a violation of any applicable water quality standards with the exception of TDS and nitrate for receiving water adopted by the Regional Board or the State Water Resources Control Board (SWRCB). The discharge shall not cause the presence of the following substances or conditions in ground waters of the Middle Mojave River Valley Ground Water Basin.

The ground water quality, as a result of the discharge, shall not exceed the following:

1. Prior to September 1, 2012, TDS of 1,000 mg/L;
2. After September 1, 2012, TDS of 1,400 mg/L; and
3. The nitrate (as N) of 9.5 mg/L.

These limits are based on an average of all samples analyzed in a 12-month period.

4. Chemical Constituents - Ground waters shall not contain concentrations of chemical constituents (with the exception of TDS and nitrate) in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following

provisions of Title 22 of the CCR (with the exception of TDS and nitrate): Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 6444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (SMCLs - Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs - Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect. Waters designated as Agricultural Supply shall not contain concentrations of chemical constituents with the exception of TDS in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

Ground waters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.

5. Radioactivity - Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits specified in the CCR, Title 22, Chapter 15, Article 5, Section 64443.
6. Taste and Odors - Ground waters shall not contain taste or odor-producing substances other than from TDS in concentrations that cause nuisance or that adversely affect beneficial uses. For ground waters designated as Municipal or Domestic Supply at a minimum, concentrations shall not exceed adopted SMCLs specified in Table 64449-A of Section 64449 (SMCLs - Ranges), and Table 64449-B of Section 64449 (SMCLs - Ranges) of Title 22 of the CCR, including future changes as the changes take effect.
7. Any presence of toxic substances in concentrations that individually, collectively, or cumulatively cause detrimental physiological response in humans, plants, animals, or aquatic life is prohibited.
8. The presence of hexavalent chromium and total chromium in concentrations that statistically exceed background levels is prohibited.

C. Water Quality Protection Standard

1. Monitoring Parameters

The monitoring parameters for the Facility are: total chromium Cr(T), hexavalent chromium Cr(VI), nitrate (as N) and TDS.

2. Monitoring Points

The monitoring points for the Land Treatment Unit are the lysimeters located five and twenty feet below ground surface grade, as shown on Attachment "B", and random sampling points for near surface soil.

3. Point of Compliance

The point of compliance as defined in Section 20164, Title 27, California Code of Regulations (Title 27) for the land treatment unit for Cr(T) and Cr(VI) is a horizontal surface located five feet below ground surface grade. The discharge of Cr(T) and Cr(VI) from the bottom of the LTU cannot exceed the concentration limits established in the Section I.C.5 at the point of compliance.

4. Vadose Zone Evaluation Point

The predicted concentrations of nitrate and TDS in ground water as a result of the Project are presented in Finding 11. TDS and nitrate concentrations in the soil pore fluids below the LTU will be monitored at an evaluation point 20 feet below ground surface. Unsaturated zone transport calculations for this project indicate the soil pore water liquid will not exceed the following concentrations for the constituents indicated below.

<u>Monitoring Parameter</u>	<u>Matrix</u>	<u>Concentration Limit</u>	<u>Reporting Limit</u>	<u>Recommended Analytical Method</u>
Nitrate (as N)	Liquid ¹	75 mg/L	0.5 mg/L	EPA 300
Total Dissolved Solids (TDS)	Liquid ¹	20,000 mg/L	0.1 mg/L	EPA 160.1

If TDS and nitrate concentrations exceed the predicted values in the table below, the discharger shall begin evaluation monitoring to assess whether continued LTU operation will threaten ground water quality and if cessation of the LTU is required. The Discharger shall provide a report explaining the findings to the Regional Board.

5. Concentration Limits

The concentration limits for the monitoring parameters located at the monitoring points for the Facility are the following:

<u>Monitoring Parameter</u>	<u>Matrix</u>	<u>Concentration Limit</u>	<u>Reporting Limit</u>	<u>Recommended Analytical Method</u>
Hexavalent Chromium Cr(VI)	Liquid ²	0.021 mg/L ^{3,5}	0.001 mg/L	EPA 7199

¹ Soil pore liquid collected from lysimeters at 20 feet bgs

² Soil pore liquid collected from lysimeters at 5 feet bgs

³ USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level

⁴ California Primary Maximum Contaminant Level (MCL)

⁵ Based on the 95% upper confidence limit (UCL) of the median value for all lysimeters per quarterly sampling event

⁶ USEPA Region IX 2002 Preliminary Remedial Goals (PRGs) for Residential Soil

Total Chromium Cr(T)	Liquid ²	0.05	mg/L ^{4,5}	0.005	mg/L	EPA 6020
Hexavalent Chromium Cr(VI)	Soil	30	mg/kg ⁶	0.2	mg/kg	EPA 3060A/7199
Total Chromium Cr(T)	Soil	210	mg/kg ⁶	0.2	mg/kg	EPA 3060A/7199

D. General Requirements and Prohibitions

1. Surface flow or visible discharge of waste to land surface, surface waters, or surface water drainage courses is prohibited.
 2. The discharge shall not cause a pollution as defined in Section 13050 of the California Water Code (CWC), or a threatened pollution.
 3. Neither the treatment nor the discharge shall cause a nuisance as defined in Section 13050 of the CWC.
 4. The discharge of waste except to the authorized disposal site is prohibited.
 5. The discharge of waste, as defined in the CWC, which causes a violation of any narrative water quality objective (WQO) contained in the Basin Plan including the Nondegradation Objective, with the exception of nitrate and TDS, is prohibited.
 6. The integrity of the LTU shall be maintained throughout the life of Project, and shall not be diminished as a result of any maintenance operation.
 7. The discharge of waste which, causes a violation of any numeric WQO contained in the Basin Plan, with the exception of nitrate and TDS, is prohibited.
 8. Where any numeric or narrative WQO contained in the Basin Plan is already being violated, the discharge of waste which causes further degradation or pollution is prohibited.
 9. The Discharger shall remove and relocate or otherwise mitigate any wastes, which are discharged not in accordance with these WDRs.
 10. LTU and containment structures shall be designed and constructed to limit ponding, inundation, erosion, slope, failure, washout and overtopping which could be caused by a 100 year, 24-hour precipitation event.
 11. Hazardous waste as defined under Article 1, Chapter 11, Division 4.5 (§66261.3 et seq.) of Title 22 CCR shall not be disposed and/or treated at the Facility.
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12. The discharge to the ground of any chemicals stored in tanks at the Facility is prohibited.
13. At closure, the Facility shall be closed in accordance with a final Closure and Post-Closure Maintenance Plan approved by the Regional Board.
14. Verbal notification shall be made to the Regional Board within 24-hours whenever there is leachate containing chromium greater than the concentration limits, as established in the Monitoring and Reporting Program, detected below the five-foot treatment zone. A report containing written confirmation shall follow within 14 days of receipt of the last laboratory report(s). The report shall include the agencies contacted, date(s) that leachate was found in the lysimeters, corrective action taken, and measures taken to ensure a similar leachate event will be avoided.
15. Discharge of solid waste to the Facility is prohibited.
16. The Facility shall be delineated by using at least four permanent markers certified by a California Registered Land Surveyor or a Civil Engineer to define the area containing extracted ground water undergoing treatment.
17. If either the presence of hexavalent chromium or total chromium is detected at a level exceeding the concentration limits established in the Monitoring and Reporting Program in the native soil beneath the five-foot treatment zone, the Discharger shall immediately cease using the LTU and begin evaluation monitoring.

E. Required Programs

The Discharger shall conduct a monitoring and response program pursuant to Section 20385 of Title 27 for the Facility as follows.

1. Detection Monitoring Program

The Discharger shall maintain a Detection Monitoring Program (DMP) under Section 20420 of Title 27 as required in Section 20385(a)(1) of Title 27.

2. Evaluation Monitoring Program

The Discharger shall establish an Evaluation Monitoring Programs (EMP) under Section 20425 of Title 27 as required in Sections 20385(a)(2) or 20385(a)(3) of Title 27 whenever there is evidence of a release from the Facility.

3. Corrective Action Program

The Discharger shall institute a Corrective Action Program (CAP) under Section 20430 of Title 27 when required pursuant to Section 20385(a)(4) of

Title 27.

II. PROVISIONS

A. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment "D," which is made a part of this Order.

B. Monitoring and Reporting

1. Pursuant to California Water Code Section 13267(b), the Discharger shall comply with Monitoring and Reporting Program No. R6V-2004-0034 as specified by the Executive Officer.
2. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of the Monitoring and Reporting Program.

C. Closure and Post-Closure Maintenance Plan

The preliminary closure and post-closure maintenance plan shall be updated if there is a substantial change in operations or a substantial change in costs for closure. A report shall be submitted annually indicating conformance with existing operations. The report indicating conformance with existing operations may be included in the annual report required in the Monitoring and Reporting Program. A final plan shall be submitted at least 180 days prior to beginning any partial or final closure activities or at least 120 days prior to discontinuing the use of the site for waste treatment, storage or disposal, whichever is greater. The final plan shall be prepared by or under the supervision of either a California Certified Engineering Geologist or a California Registered Civil Engineer.

D. Financial Assurance

Beginning with the first Annual Report, the Discharger shall annually submit reports, prepared by or under the supervision of either a California Certified Engineering Geologist or a California Registered Civil Engineer, providing evidence that adequate financial assurance pursuant to the requirements of the WDRs has been provided for closure, post-closure, and for potential releases. Evidence shall include the total amount of money available in the fund developed by the Discharger. In addition, the Discharger shall either provide evidence that the amount of financial assurance is still adequate or revise the amount of financial assurance by the appropriate amount. An increase may be necessary due to inflation, a change in regulatory requirements, a change in the approved closure plan, or other unforeseen events.

E. Claim of Copyright or Other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the Discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the Discharger as if the task had not been completed.

III. TIME SCHEDULE

A. Submittal of Technical Reports and Financial Assurance Documents

1. Preliminary Closure and Post-Closure Maintenance Plan

By **August 30, 2004**, or 30 days prior to discharge, whichever comes first, the Discharger shall submit a Preliminary Closure and Post-Closure Maintenance Plan (PCPCMP) for the Facility in accordance with the requirements in Title 27. The PCPCMP shall contain a proposal to either clean close the Facility or close the Facility as a land treatment unit. The PCPCMP shall include a cost estimate to implement the plan. The PCPCMP and cost estimate to implement the PCPCMP shall be prepared by, or under the supervision of, either a California Certified Engineering Geologist or a California Registered Civil Engineer.

2. Reasonably Foreseeable Release Plan

By **August 30, 2004** or 30 days prior to discharge, the Discharger shall submit a plan for addressing a reasonably foreseeable release from the Facility in accordance with the requirements in Title 27. The CAP shall include a cost estimate to implement the plan. The CAP and cost estimate to implement the CAP shall be prepared by, or under the supervision of, either a California Certified Engineering Geologist or a California Registered Civil Engineer,.

3. Financial Assurance Documents.

By **August 30, 2004** or 30 days prior to discharge, whichever comes first, the Discharger shall submit Instruments of Financial Assurance acceptable to the Regional Board and adequate to cover the costs of Closure, Post-Closure Maintenance and all Known and Reasonable Foreseeable Releases for the Facility.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on July 27, 2004.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Location Map
B. Irrigation Sites
C. References
D. Standard Provisions for Waste Discharge Requirements

JK/tp (PG&E WDR FINAL)

Attachment B

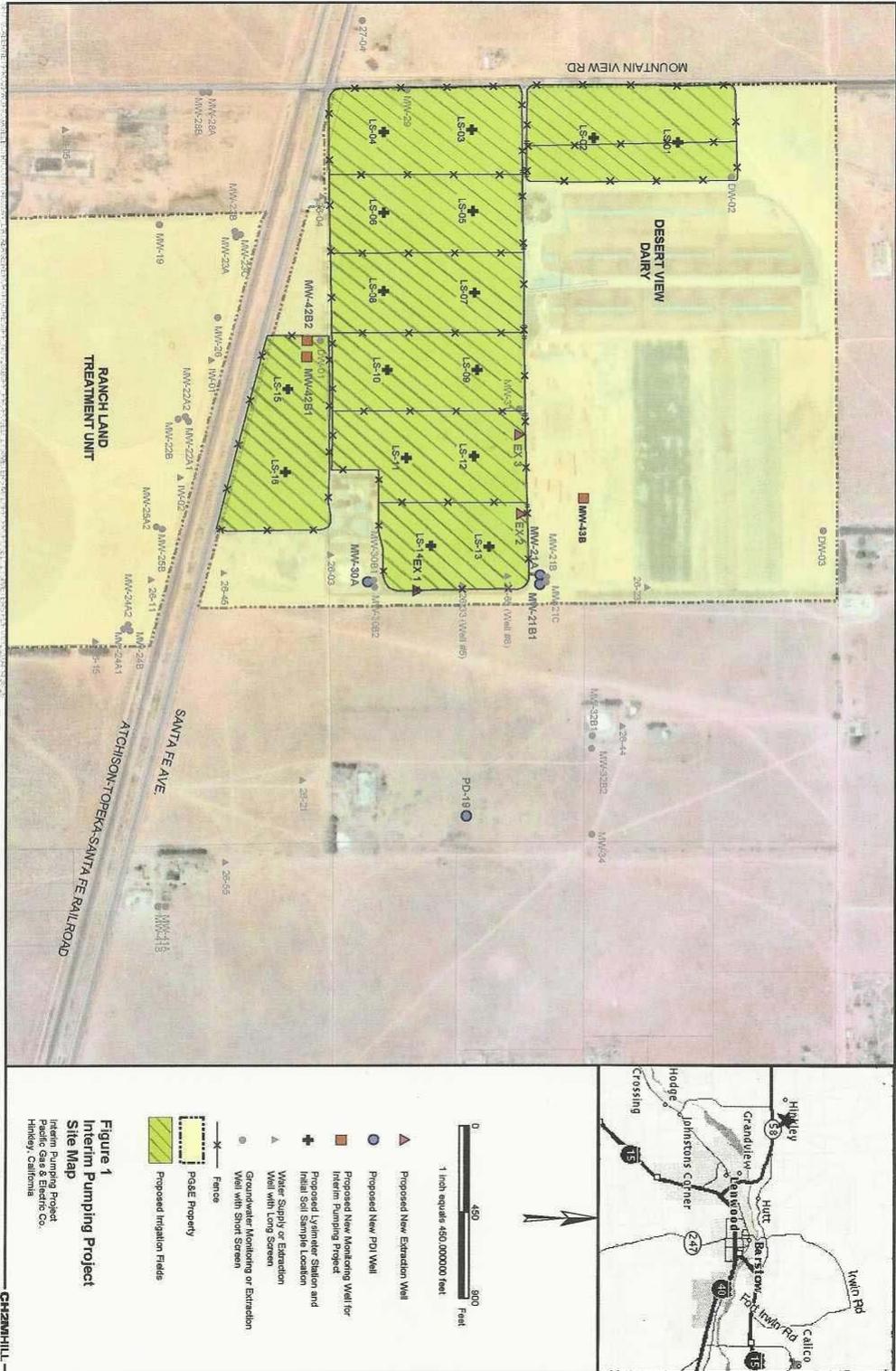
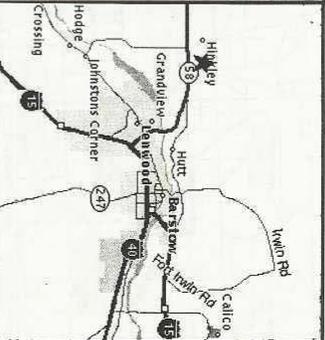


Figure 1
Interim Pumping Project
Site Map
 Interim Pumping Project
 Pacific Gas & Electric Co.
 Fresno, California

- ▲ Proposed New Extraction Well
- Proposed New PDU Well
- Proposed New Monitoring Well for Interim Pumping Project
- ⊕ Proposed Lysimeter Station and Infall Soil Sample Location
- ▲ Water Supply or Extension Well With Long Screen
- Groundwater Monitoring or Extension Well With Short Screen
- ⊗ Fence
- ⊠ PG&E Property
- ▨ Proposed Irrigation Fields



Attachment C. References

Bibliography for Interim Plume Containment and Hexavalent Chromium Treatment Project Report of Waste Discharge Documents

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- PG&E. 2004. *Addendum to Application / Report of Waste Discharge for Waste Discharge Requirements for the Interim Pumping Project at the Desert View Dairy, PG&E Company, Hinkley California, dated August 4, 2003*. Letter from Linda M. Gonsalves, P.E. Senior Project Manager to Harold Singer, Executive Director of the LRWQCB, January 12.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. 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) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do 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.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.

b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**MONITORING AND REPORTING PROGRAM NO. R6V-2004-0034
WDID NO. 6B360303001**

FOR

**PACIFIC GAS AND ELECTRIC COMPANY
INTERIM PLUME CONTAINMENT AND HEXAVALENT CHROMIUM
TREATMENT PROJECT**

San Bernardino County

I. MONITORING

A. Flow and Extracted Ground Water

The following shall be conducted and reported in graphic and tabular form accordingly as specified:

1. Volumes of Extracted Ground Water

The volumes of extracted ground water discharged to the land treatment unit from each well shall be recorded in a permanent log book. (i.e., maximum, total and average daily pumping rate in gallon per minute(gpm), total monthly and cumulative total volumes for each extraction well). Flows will be recorded on a daily basis during the start-up and optimization period. Once routine operations are established, flows will be recorded weekly. The information shall be reported quarterly.

2. Water Applied to the Land Treatment Unit (LTU)

Samples of combined extracted ground water shall be collected every two weeks for the first three months during system startup and optimization and analyzed for total chromium Cr(T), hexavalent chromium Cr(VI), nitrate (as nitrogen) and total dissolved solids (TDS). The results of sampling shall be reported after the system startup and optimization is complete.

During the routine operation (after first three months for system startup and optimization), grab samples of combined extracted ground water shall be collected quarterly for the four monitoring parameters listed above. The results of sampling shall be reported quarterly.

B. Detection Monitoring

The Discharger is required, pursuant to Section 20385, Title 27, to establish a detection monitoring program for a land treatment unit. A detection monitoring program has been proposed by the Discharger pursuant to Article 1, Subchapter 3, Chapter 3, Division 2, Title 27. The detection monitoring program includes:

- a. Site monitoring for the LTU condition;
- b. Unsaturated zone monitoring for soil pore liquid quality;
- c. Soil monitoring for soil loading for chromium;
- d. Ground water monitoring for ground water quality;
- e. Plant tissue monitoring for plant tissue uptake of chromium; and
- f. Aquifer characteristics from upgradient and downgradient wells.

The detection monitoring program shall be completed and reported quarterly as follows:

1. Site Monitoring

Daily, the land treatment unit shall be visually inspected and the following recorded in a permanent log book:

- a. condition of runoff control facilities;
- b. condition of perimeter site fencing;
- c. condition of drainage control facilities;
- d. any sign of surface runoff leaving the land treatment unit; and
- e. any sign of the presence of ponded water.

2. Unsaturated (Vadose) Zone Monitoring System

Sixteen lysimeter stations shall be installed in the irrigated fields. Each station consists of a lysimeter at five and twenty feet below ground surface (bgs). These specific locations of the lysimeter station shall be proposed in the Sampling and Analysis Plan (SAP). Lysimeters are to be capable of extracting soil pore liquid under unsaturated soil conditions.

Quarterly, soil pore liquid samples, if a sufficient quantity is encountered, shall be collected from the lysimeters at five feet bgs for Cr(T) and Cr(VI) analyses and at twenty feet bgs for nitrate and TDS.

3. Soil Monitoring

Monthly, for the first six months, soil samples shall be collected at depths to be proposed in the SAP at 5 feet below surface at locations within the land treatment area and analyzed for Cr(VI) and Cr(T) (in units of mg/kg). The random sampling approach and the numbers of samples shall be proposed in the SAP required in Section G.1.

During the routine operation (after the first six months), soil samples shall be collected at 5 feet below the ground surface at random locations proposed in the SAP required in Section G.I. within the land treatment area on a quarterly frequency soil samples shall be analyzed for Cr(VI) and Cr(T)

and reported in units of mg/kg. The random sampling approach shall be specified in a Sampling and Analysis Plan (SAP) required in Section G.1. If results of sample analysis indicate Cr(VI) and Cr(T) concentrations greater than the concentration limits established in the Board Order (Tentative) Section I.C.5, the Discharger shall establish a concentration gradient below the LTU. Soil samples shall be collected at one foot intervals until laboratory analytical results show that concentrations are less than the concentration limit identified in Section I.C.5. If Cr(VI) and Cr(T) concentrations above the concentration limits are found below the five-foot treatment zone, the Discharger shall report evidence of a release.

4. Ground Water Monitoring

Quarterly, ground water samples will be collected at ten proposed monitoring wells for Cr(T), Cr(VI), nitrate (as N) and TDS analyses. The ground water monitoring shall be detailed in a Sampling and Analysis Plan (SAP) required in Section G.1.

5. Plant Tissue Monitoring

Semi-annually, representative samples of crop tissue irrigated by the extracted ground water shall be sampled and analyzed for Cr(VI) and Cr(T). The SAP shall propose the plant tissue sample collection methodology. The units for monitoring parameters reported shall be in mg/kg (dry weight) of plant tissue.

6. Aquifer Characteristics

Quarterly, the parameters listed below shall be determined from proposed monitoring wells.

<u>Field Parameter</u>	<u>Units</u>
Depth to ground water	feet bgs
Static water level	feet above mean sea level
Electrical conductivity	micromhos/cm
pH	pH units
temperature	deg. F or C
Slope of ground water gradient	ft/ft

7. Summary

Sampling Frequency for Detection Monitoring

Monitoring	Frequency
Site Monitoring	Daily ² Weekly ³
Unsaturated Zone Monitoring - Soil Pore Liquid	Quarterly
Soil Monitoring	Monthly ^{1,2} Quarterly ^{1,3}
Ground Water Monitoring	Quarterly
Plant Tissue Monitoring	Semi-Annually ¹
Aquifer Characteristics	Quarterly

Note: Results shall be reported quarterly

II. DATA ANALYSIS

A. Statistical Analysis Method

The Discharger shall propose a descriptive statistics (i.e., sample mean, sample variation) for sample analysis of liquid collected from the lysimeters and soil samples from the land treatment units to indicate evidence of a release. The Executive Officer may approve proposed statistical methods which are different than the method in this Monitoring and Reporting Program provided that such methods are capable of determining statistically significant evidence of a release from the Facility.

B. Nonstatistical Method

In accordance with the WDRs, evaluation monitoring will be initiated without statistical verification if there is significant physical evidence of a release. Physical evidence can include time series plots, vegetation loss, or unusual soil discoloration. Each annual report shall comment on these physical elements.

¹ Analyses only for hexavalent chromium [Cr(VI)] and total chromium [Cr(T)] in unit of mg/kg

² For the first six months after startup of the operation

³ After first six months after startup of the operation if consistent compliance has been demonstrated for the first 6 months of operation.

III. REPORTING REQUIREMENTS

A. Scheduled Reports To Be Filed With The Regional Board

The following periodic reports shall be submitted to the Regional Board pursuant to Section 13267 of the California Water Code (CWC) as specified below.

Detection Monitoring Reports

1. Results of sampling and laboratory analysis of samples collected from the Facility. The semi-annual report must include a map showing the locations where pore liquid and soil samples were collected during the previous semester.

The results of sample analysis of monitoring parameters for the extraction wells and extracted ground water samples shall be reported in tabular and graphic form. Each graph prepared for ground water data shall be plotted with raw data at a scale appropriate to show trends or variations in water quality. For graphs showing the trends of similar constituents, the scale shall be the same.

2. A transmittal letter summarizing the essential points in each report shall accompany each semi-annual report. The letter shall include a discussion of any requirement violations found since the last report was submitted, and shall describe actions taken or planned for correcting those violations.

The transmittal letter shall also include a discussion of any violations of the WDRs and a description of action(s) taken to correct those violations. If no violations have occurred since the last report, this shall be stated in the transmittal letter. Monitoring reports and the transmittal letters shall be signed by a principal executive officer at the level of vice-president, or higher, or their designated representative who is responsible for the overall operation of the facility. The letter shall contain a statement that, under penalty of perjury, to the best of their knowledge the report is true, complete, and correct.

3. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting this schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal.
4. The results of sampling conducted in accordance with the approved Sampling and Analysis Plan for the Facility.

B. Unscheduled Reports To Be Filed With The Regional Board

The following reports shall be submitted to the Regional Board pursuant to Section 13267 of the CWC as specified below.

1. Notice of Evidence of a Release

Should the appropriate statistical or non-statistical data analysis indicate, for a given monitoring parameter and/or constituent of concern, that there is evidence of a release, the Discharger shall:

- a. Immediately notify the Regional Board verbally as to the monitoring point(s) and constituent(s) or parameter(s) involved;
- b. Provide written notification by certified mail within seven days of such determination (Section 2550.8(j)(1), Article 5, Chapter 15, Title 23, California Code of Regulations). The notification should indicate the Discharger's intent to conduct verification sampling, initiate evaluation monitoring procedures, or demonstrate that a source other than the Facility is responsible for the release.
- c. If the Discharger chooses to attempt to demonstrate that a source other than the Facility is responsible for the release, the Discharger shall submit a supporting technical report within 90 days of detection of the release.

2. Evaluation Monitoring

The Discharger shall, within 90 days of verifying a release, submit a technical report pursuant to Section 13267(b) of the California Water Code proposing an Evaluation Monitoring Program. If the Discharger decides not to conduct verification procedures, or decides not to make a demonstration that a source other than the Facility is responsible for the release, the release will be considered verified.

3. Engineering Feasibility Study Report

The Discharger shall, within 180 days of verifying the release, submit an Engineering Feasibility Study (Section 2550.8(k)(6) of Article 5) to preliminarily propose methods for corrective action.

C. General Provisions

The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made a part of this Monitoring and Reporting Program.

D. Submittal Periods

Beginning **October 30, 2004**, the Discharger shall submit quarterly monitoring reports to the Regional Board on the 30th day of the month following the monitoring period. All daily and monthly reporting requirements shall be summarized and reported with the quarterly report. Any reporting required for mitigation monitoring during construction shall be reported in the next quarterly report.

E. Annual Report

On or before **July 30, 2004**, and every year thereafter the Discharger shall submit an annual report to the Regional Board. This report shall include the items described in the General Provisions for Monitoring and Reporting.

F. Mitigated Measures Monitoring and Reporting

Mitigation Measures Monitoring and Reporting are required as described in Attachment "A." Monitoring and Reporting of Air Quality Measures (items 1 through 4) are required monthly until construction is complete. Monitoring and Reporting of Hazards and Hazardous Materials and Hydrology and Water Quality Measures (items 6 through 16) are required for the project duration. The daily logs prepared by the construction superintendent and PG&E representative shall be kept in a permanent onsite log or record. The first report is due **August 30, 2004** and future reports to be submitted on a monthly basis thereafter, until notice is provided by an authorized representative of PG&E that construction activities are completed. Following construction, quarterly reports shall be submitted. All reports shall be signed by an authorized representative of PG&E.

G. Time Schedule

1. Sampling and Analysis Plan

Pursuant to General Provision No. 1D of the General Provisions for Monitoring and Reporting, the Discharge shall submit to the Regional Board by **August 30, 2004**, or 30 days prior to initiating a discharge or whichever occurs first, a Sampling and Analysis Plan (SAP). The SAP shall be updated and re-submitted as appropriate. The SAP shall include a detailed description of procedures and

techniques for:

- a. Sample collection, including sampling techniques, sampling equipment, and decontamination of sampling equipment;
- b. Sample preservation and shipment;
- c. Analytical procedures;
- d. Chain of custody control;
- e. Quality assurance/quality control (QA/QC);
- f. Proposed ground water monitoring and locations of monitoring well; and
- g. Random sampling approach for soil monitoring.

2. Statistical Analysis Method

The Discharge shall submit a proposed statistical analysis method for soil-pore liquid and soil samples from the LTU to indicate evidence of a release by **August 30, 2004**.

Ordered by: _____

HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: **July 27, 2004**

Attachments: A Mitigation Monitoring and Reporting Plan
B General Provisions for Monitoring and Reporting

KD/rp p/PGE (PG&E MRP)

Attachment A Mitigation Monitoring and Reporting Plan

Mitigation Measure	Monitoring	Reporting
Air Quality		
1. Comply with the requirements of the MDAQMD including Rule 403.2 to mitigate the impact of dust and PM10 emission. The requirements of Rule 403.2 for the proposed project are: a) use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emission; b) take actions sufficient to prevent project-related trackout onto paved surfaces; c) cover loaded haul vehicles while operating on publicly maintained paved surfaces; d) stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days; e) cleanup project-related trackout or spills on Publicly Maintained paved surfaces within twenty-four hours; and f) reduce non-essential earth-moving activity under high wind conditions.	<ul style="list-style-type: none"> ▪ The onsite construction superintendent is responsible to ensure daily logs reflect monitoring compliance with MDAMD requirements. ▪ Information regarding construction activity shall be recorded in a permanent log book. Such information will include but is not limited to the time construction started and ended for the day and any unusual condition that may have occurred during the construction period. 	A summary of the Daily Logs will be submitted to the Regional Board in the Monthly Reports as required in MRP until construction is complete.
2. During construction, all dust generating activities shall be restricted to periods of low wind (less than 25 miles per hour) to reduce dust emission.	<ul style="list-style-type: none"> • Wind conditions shall be monitored onsite or from local information representative of the site. • The onsite construction superintendent is responsible to cease construction activities during a high wind condition. • The onsite construction superintendent is responsible to ensure daily logs reflect wind speed conditions, construction activity violations, and any corrective actions. 	See above.
3. All dust generating activities shall be halted whenever local wind speeds exceed 25 miles per hour.	<ul style="list-style-type: none"> ▪ See Monitoring for No. 2, above. 	See above.
4. Construction speed on unpaved roads is limited to 25 miles per hour to minimize vehicle-related dust emission.	<ul style="list-style-type: none"> ▪ The onsite construction superintendent is responsible to ensure daily logs reflect construction equipment driving speeds, any violations, and any corrective actions. 	See above.
5. Speed-limit signs will be posted.	<ul style="list-style-type: none"> ▪ See Monitoring for No. 4, above. 	See above.
Hazards and Hazardous Materials		
6. No chemicals will be stored onsite.	<ul style="list-style-type: none"> ▪ The PGE site representative will ensure compliance and record results of a site inspection at least monthly in a permanent log book. 	A Summary of the PGE Permanent Log will be submitted to the Regional Board in the Quarterly Reports as required in

Mitigation Measure	Monitoring	Reporting
		MRP. This summary will include a Certification that no chemicals such as hydrogen peroxide and citric acid were stored on site.
7. Chemical ingredients for irrigation drip line cleaning will be completely consumed during each periodic maintenance.	<ul style="list-style-type: none"> ▪ See Monitoring for No. 6, above. ▪ The volume of the chemicals applied and duration of application for citric acid and hydrogen peroxide will be recorded. ▪ The soil field moisture content will be recorded during each chemical application. 	A Summary of the PGE Permanent Log will be submitted to the Regional Board in the Quarterly Reports as required in MRP. This summary will include a Certification that all chemical ingredients were completely consumed. This summary will also include information on the volume and duration off chemical treatments and field soil moisture.
8. The offsite 750-gallon tank used for mixing the citric acid solution will be double-walled. Curbing must be placed along the perimeter of the concrete pad for containment of the full-volume	<ul style="list-style-type: none"> ▪ See Monitoring for No. 6, above. ▪ An Emergency Response Plan will be prepared, implemented and retained onsite and available to PGE staff and shown to regulatory staff if requested. 	A Summary of the PGE Permanent Log will be submitted to the Regional Board in the Quarterly Reports as required in MRP. This summary will include a Certification that all tanks are double-walled in the first monthly report after installation.
9. Hydrogen peroxide totes will be placed on a containment pallet to provide containment in the event of a leak.	<ul style="list-style-type: none"> ▪ See Monitoring for No. 6, above. 	A Summary of the PGE Permanent Log will be submitted to the Regional Board in the Quarterly Reports as required in MRP. This summary will include a Certification that containment pallets were used.
10. Herbicides may be used only if mowing does not provide sufficient weed control through a grass cover. If any herbicides are used, the application will be in accordance with the product label recommendations.	<ul style="list-style-type: none"> ▪ See Monitoring for No. 6, above. ▪ PGE will maintain photograph documentation of the soil grass cover. ▪ PGE will record the type and amount of any herbicides used. 	A Summary of the PGE Permanent Log will be submitted to the Regional Board in the Quarterly Reports as required in MRP. This summary will include a Certification that no herbicides were used or a summary of the type and amount applied.
11. The operation of the LTU will be evaluated and the distribution of crops as fodder will cease if monitoring data of plant tissue exceed 100 mg/kg of Cr(T) or indicate a threat to human health or the environment. The reasonable Cr(T) threshold concentration in crop (alfalfa) harvested for use as cattle feed presented no human health risk at concentrations below 1000	<ul style="list-style-type: none"> ▪ A LTU monitoring program is established in the MRP and will include soil and plant tissue testing to assess the concentrations of chromium. ▪ The monitoring program includes data evaluation to assess whether there is a threat to human health or the environment. 	Separately, as required by the MRP

Mitigation Measure	Monitoring	Reporting
mg/kg. It is conservative to apply a plant tissue concentration (100 mg/kg) for grasses other than alfalfa using 10 percent of the maximum threshold concentration of Cr(T).	<ul style="list-style-type: none"> ▪ The criteria to stop LTU use is based on information published in the Public Health Assessment. 	
Hydrology and Water Quality		
12. Subsurface drip irrigation systems will be used to distribute extracted ground water so that natural processes can reduce the Cr(VI) to Cr(III).	<ul style="list-style-type: none"> ▪ PGE will collect photograph documentation as irrigation systems are installed. 	Separately, as required by the MRP. Certification will be provided in the first report after installation that drip lines were used.
13. Grasses will be planted to provide nitrogen uptake.	<ul style="list-style-type: none"> ▪ The LTU monitoring program established in the MRP includes soil moisture sampling and analysis for nitrogen migrating past the root zone. 	Separately, as required by the MRP
14. During summer and most of the fall, the irrigation system will be operated at agronomic rates to prevent percolation below the LTU.	<ul style="list-style-type: none"> ▪ PGE will ensure that the plan is implemented and effective. ▪ Each month the amount of water applied versus agronomic requirements of the crop will be established and recorded in acre feet/acre/month 	Separately, as required by the MRP
15. The LTU operations will be operated to have not ponded water or ground water on the surface of the ground.	<ul style="list-style-type: none"> ▪ The LTU will be inspected daily during the start-up and optimization period. The inspection will look for ponded water or visible signs of ponding on ground surface. When optimization is complete and routine operation are established, the LTU will be inspected weekly. ▪ The PGE site representative will ensure compliance and record results of a site inspection in a permanent log book 	Separately, as required by the MRP
16. The pumping of ground water will remain within the 656 acre feet/year allowed under the Mojave River Ground Water Adjudication.	<ul style="list-style-type: none"> ▪ The total volume of water extracted per year for the project as compared to the total adjudication of 656 acre ft/year 	Information to be reported for the prior year in the first submitted monitoring report of the year.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

GENERAL PROVISIONS
FOR MONITORING AND REPORTING

1. **SAMPLING AND ANALYSIS**

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
 - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
 - ii. In the case of a partnership, by a general partner;
 - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
 - i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mrp