

California Regional Water Quality Control Board
Lahontan Region

RESOLUTION NO. R6V-2006-0022

**APPROVING THE INITIAL STUDY/CHECKLIST
AND ADOPTING A MITIGATED NEGATIVE DECLARATION
FOR CENTRAL AREA IN-SITU REMEDIATION PILOT STUDY PROJECT**

FOR

PACIFIC GAS & ELECTRIC COMPANY
COMPRESSOR STATION
35863 Fairview Road
Hinkley, California

San Bernardino County

WHEREAS, the California Regional Water Quality Control Board, Lahontan Region (hereinafter the Water Board) finds that:

1. California Water Code (CWC) Section 13260(a)(1) requires that any person discharging wastes, or proposing to discharge wastes other than into a community wastewater collection system, that could affect the quality of waters of the State shall file a report of waste discharge (ROWD) with the Regional Water Quality Control Board exercising jurisdiction in the area, and that Water Board shall then prescribe requirements for the discharge or proposed discharge of wastes.
2. Pacific Gas & Electric (hereinafter Discharger) has filed a ROWD and applied for Waste Discharge Requirements to implement a pilot study for developing a strategy for long-term groundwater remediation. The pilot study will inject a solution of food-grade reagents (lactate, whey, and emulsified vegetable oil) into the groundwater to stimulate bioremediation of mobile hexavalent chromium to essentially immobile trivalent chromium. The pilot study will also include a tracer test that will inject potassium bromide (a salt) and distilled water to monitor groundwater flow rates before (and possibly during) the pilot study.
3. The Discharger owns the Compressor Station located at 35863 Fairview Road in Hinkley, California (site). The facility is used to transport natural gas along pipelines to further destinations. The Discharger also owns land north of Frontier Road and intersected by Fairview Road overlying the groundwater plume containing detectable concentrations of chromium. The field-scale pilot study will take place at this latter location (Assessor Parcel Numbers 0494-251-15 and 0494-251-03).

4. Soil and groundwater beneath the site is contaminated with hexavalent chromium from untreated cooling tower water discharged to unlined ponds from 1952 to 1964. This contamination has created a plume of chromium in groundwater extending about two miles to the north of the site and about 1.2 miles wide. Detectable chromium concentrations in the plume exceed the California Maximum Contaminant Level for drinking water of 50 micrograms per liter.
5. The site is subject to various Lahontan Regional Water Quality Control Board orders, including the Cleanup and Abatement Order (CAO) 6-01-50. The Discharger is required to conduct cleanup of chromium in groundwater in a manner that does not threaten to create nuisance conditions.
6. Under the ROWD described in finding number 2 above, and in the documents referenced in finding number 9 below, in order to partially comply with the orders described in finding number 5 above, the Discharger proposes to conduct remediation activities to reduce contamination at the site and in the groundwater plume. At the pilot study area, the Discharger will create a localized reducing condition in groundwater by injecting a solution of food-grade reagents into the subsurface via wells. The reagent solution will facilitate bioremediation by reducing hexavalent chromium to trivalent chromium. Groundwater quality monitoring will evaluate the affects of the bioremediation process within the treatment area.
7. Groundwater quality within the pilot study area will be monitored through a Monitoring and Reporting Program Order No. R6V-2006-0023. In addition, groundwater quality across the site and off-site areas will continue to be monitored by a comprehensive groundwater monitoring well network on a bi-monthly and quarterly basis depending on well locations.
8. The direction of groundwater flow is to the north-northwest in the proposed field-scale pilot study area. The Discharger shall monitor the presence and concentration of injected reagent solution, potassium bromide, and potential byproducts, evaluate flow conditions, and any potential for movement of contaminants outside the remediation area. As specified in the Waste Discharge Requirements and the Mitigated Negative Declaration, the Discharger will initiate a contingency plan, if necessary, if contaminants or the injected solution migrate to the contingency area at trigger concentrations.
9. The Discharger proposed bench-scale and field-scale pilot testing for evaluating selection of a long-term groundwater remediation method in November 2002 document titled *Groundwater Remediation Pilot Test Proposal*, prepared by CH2MHill consultants.

10. A laboratory bench-scale pilot study was conducted in late-2003 and early-2004 and the results are reported in a April 2004 document titled *Final In-situ Remediation Bench-scale Testing, Hinkley, California*, prepared by CH2MHill. The pilot study involved the injection of various chemical and biological reductants to induce bioremediation of chromium in soil and groundwater taken from the site. Study results showed that all reductants tested were capable of rapidly treating hexavalent chromium in microcosms in less than 15 days. No significant adverse effects were observed during the testing that could harm the environment if implemented in the field. Based on the study results, the Discharger selected two biological reductants, lactate and emulsified vegetable oil for use in a field-scale pilot test, based upon consideration for safety, handling, material properties, delivery and mixing in the aquifer, permitting and cost.
11. The Discharger conducted a pilot test for six-months starting in December 2004. Lactate and emulsified vegetable oil were injected to groundwater via wells in two small-scale field areas. The pilot test demonstrated successful reduction of hexavalent chromium concentrations in groundwater to trivalent chromium concentrations. The results are documented in the July 2005 *Final Report, In-situ Remediation Pilot Study* and the October 17, 2005 Addendum.
12. The injection of a solution of lactate, whey, and emulsified vegetable oil in the soil and groundwater is a discharge of waste subject to Section 13260 of the CWC. However, the discharge of lactate, whey, and emulsified vegetable oil is intended to provide an environmentally beneficial and efficient remediation of hexavalent chromium-contaminated groundwater. This approach is anticipated to reduce cleanup time and costs compared to traditional cleanup remedies without affecting public health and safety.
13. The Water Quality Control Plan (Basin Plan) for the Lahontan Region designates the beneficial uses of the groundwater of the Middle Mojave River Valley Groundwater Basin as municipal and domestic supply, industrial service supply, agricultural supply, freshwater replenishment, and aquaculture.
14. The permitted discharge is consistent with the anti-degradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). The discharge may result in some localized mobilization of metals that will be monitored to verify natural attenuation. Lactate, whey, potassium bromide, and emulsified vegetable oil will degrade to non-regulated products and should have no long-term affect upon beneficial uses. The discharge is intended, and is anticipated, to produce an improvement to groundwater quality by reducing hexavalent chromium and, thereby, total chromium concentrations.

15. The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations. The Water Board staff held a public meeting in Hinkley on May 3, 2006, to present the proposed project and to accept public comments. The Water Board, in a public meeting on June 14, 2006, heard and considered all comments pertaining to the discharge and to the tentative requirements.
16. The Water Board has assumed lead agency role for this project under the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and has prepared an Initial Study/Checklist in accordance with Title 14, California Code of Regulations, Section 15063, titled Guidelines for Implementation of the California Environmental Quality Act. Based on the Initial Study/Checklist, Water Board staff prepared a Mitigated Negative Declaration indicating that the project will not have a significant adverse effect on the environment.
17. Copies of the Initial Study/Checklist and proposed Mitigated Negative Declaration were transmitted to the State Clearinghouse, all agencies and interested parties. A May 3, 2006 letter from the State Clearinghouse states that no state agencies submitted comments concerning the project during the comment period.
18. The Water Board has reviewed the Initial Study/Checklist and Mitigated Negative Declaration concerning this Resolution prepared by staff, in compliance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.). The Water Board concurs with the staff findings that a Negative Declaration should be adopted. The Initial Study/Checklist and Negative Declaration were circulated for public review and comment. No comments were received by the Water Board.
19. The Water Board considered all testimony and evidence at a public hearing held on June 14, 2006, at Lancaster, California, and good cause was found to approve the Initial Study/Checklist and proposed Mitigated Negative Declaration. After consideration of the written and oral comments, and staff's professional review and advice, the Water Board finds that there is no evidence in the record to support a fair argument that there may be adverse environmental impacts resulting from the proposed discharge.

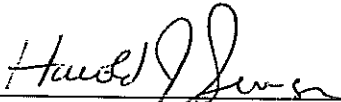
THEREFORE, BE IT RESOLVED that the Water Board:

1. Adopts the Initial Study/Checklist, and proposed Mitigated Negative Declaration and directs the Executive Officer to file a Notice of Determination with the State Clearinghouse within 30 days as required by the California Code of Regulations.

2. Directs that a copy of this Resolution shall be forwarded to the State Water Resources Control Board and all interested parties.
3. Directs that the discharge of lactate, whey, potassium bromide, and emulsified vegetable oil solution into soil and groundwater shall conform with all requirements, conditions, and provisions set forth in A. Discharge Prohibitions and B. Discharge Specifications of the Order No. R6V-2006-0023. Groundwater and air monitoring shall conform to Monitoring and Reporting Program No. R6V-2006-0023.

Certification

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 14, 2006.



HAROLD J. SINGER
EXECUTIVE OFFICER

INITIAL STUDY/CHECKLIST AND NEGATIVE DECLARATION

This Initial Study/Checklist and Negative Declaration has been prepared in accordance with the Public Resources Code, Section 21080(c) and California Code of Regulations (CCR), Title 14, Sections 15070 and 15071. The Mitigated Negative Declaration is proposed for adoption at a meeting of the California Regional Water Quality Control Board, Lahontan Region, on June 14-15, 2006.

Project Title: Central Area In-situ Remediation Pilot Study Project

Project Location: 35863 Fairview Road, Hinkley, California 92347

Lead Agency: California Regional Water Quality Control Board, Lahontan Region

Decision Making Body: California Regional Water Quality Control Board, Lahontan Region

Project Applicant: Pacific Gas and Electric Company, 375 North Wiget Lane, Suite 200, Walnut Creek, California 94598-2412

Project Description: The proposed project involves implementation of a pilot study to evaluate in-situ (below ground surface) remediation technology in a controlled test cell as part of the development of a long-term strategy for remediation of groundwater containing chromium at the Hinkley Compressor Station (the site). The site is located east of the community of Hinkley in San Bernardino County in the Harper Valley Subarea of the Mohave Hydrologic Unit (see Figure 1 of Attachment A). The proposed pilot study will evaluate in-situ biological reduction of hexavalent [Cr(VI)] to trivalent chromium [Cr(III)] using cross-gradient groundwater recirculation. Reduced conditions will be created from injecting food-grade carbon sources, such as lactate, whey, and emulsified vegetable oil, into the aquifer at the Central Area of the Cr(VI) plume. Prior laboratory and field studies have shown that these injections do not create harmful or long-lasting environmental conditions affecting water quality or public health and safety.

Mitigation Measures: The mitigation measures are included in the attached Initial Study/Checklist. The project applicant has agreed to implement all mitigation measures.

Environmental Finding: The staff of the California Regional Water Board has determined, on the basis of the attached Initial Study/Checklist and the documents and sources referenced herein, that the project described above will not have a substantial adverse impact on the environment, provided that the mitigation measures identified in the project applicant's Report of Waste Discharge and the related Initial Study/Checklist are included in the project.

Initial Study/Checklist: The Initial Study/Checklist is attached. For more information, contact Lisa Dernbach, Senior Engineering Geologist, at (530) 542-5424.

Draft Environmental Checklist
Central Area In-Situ Remediation Pilot Study
Pacific Gas and Electric Company Compressor Station, Hinkley, California

1. Project title:
Central Area In-situ Remediation Pilot Study, Pacific Gas and Electric Company Compressor Station, Hinkley, San Bernardino County, California
2. Lead agency name and address:
*California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Blvd., South Lake Tahoe, California 96150*
3. Contact person and phone number:
*Lisa Dernbach, Senior Engineering Geologist
Telephone: (530) 542-5424*
4. Project location:
*Intersection of Fairview Road and Frontier Road
Hinkley, San Bernardino County, California 92347*
5. Project sponsor's name and address:
*Pacific Gas and Electric Company
P.O. Box 770000, Mail Code B24A, San Francisco, CA 94177-0001
77 Beale Street, Room 2439C, San Francisco, CA 94105-1814
Contact Person: Darrell Klingman (415) 973-0902*
6. General plan designation:
Test Cell 3 (Parcels 0494-251-15 and 0494-251-03) – RL-5 (Rural Living 5-acre minimum)
7. Zoning:
Test Cell 3 – RL-5 (Rural Living 5-acre minimum)
8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The proposed project involves implementation of a pilot test to evaluate in-situ remediation technology in a controlled test cell as part of the development of a long-term strategy for remediation of groundwater containing chromium at the Hinkley Compressor Station (the site). The site is located east of the community of Hinkley in San Bernardino County in the Harper Valley Subarea of the Mojave Hydrologic Unit (see Figure 1 of Attachment A). The purpose of the pilot study project is to obtain data that will be used to design a long-term remediation alternative for the site. The proposed pilot study will evaluate in-situ biological reduction of hexavalent chromium [Cr(VI)], and involves injection of the selected microbial substrates into the aquifer at the Central Area of the Cr(VI) plume.

The Pacific Gas and Electric Company (PG&E) completed a pilot study in the East Land Treatment Unit (LTU) and near the former unlined ponds areas of the site. The completed pilot study demonstrated successful reduction of Cr(VI) concentrations in groundwater to non-detectable levels. The pilot study implemented in-situ bioremediation methods to reduce Cr(VI) to trivalent chromium [Cr(III)], which then precipitates and becomes immobile in the aquifer media.

This document presents a second in-situ bioremediation pilot study located at the Central Area of

the Cr(VI) plume. The purpose of and rationale for the proposed Central Area pilot study is to evaluate the feasibility of using cross-gradient recirculation to create a large-scale bio-barrier at the site, and to further evaluate the fate and transport of remediation by-products (injected biological substrates and reduced mobilized metals) within a monitored buffer zone designed as part of the test cell.

Biological Substrates

The in-situ pilot test project will use naturally-occurring microbes in the groundwater to treat the chromium in place. When provided with a food source, the microbes will consume the oxygen in the groundwater, turning the aquifer into an anaerobic environment. The anaerobic environment creates a reducing atmosphere that readily reduces chromium from the more mobile hexavalent (Cr(VI)) state to the essentially immobile trivalent (Cr(III)) state (pilot tests showed less than 5 percent of converted Cr(III) became mobile). To encourage this biological activity, a carbon substrate source is needed in the groundwater. This project proposes to inject food-grade carbohydrates, also called amendments or substrates, into the groundwater to serve as the carbon source. The biological substrates include sodium lactate, whey, and emulsified vegetable oil (EVO).

Over time, the biological substrates will naturally degrade to innocuous products and will not permanently alter the site geochemistry. Byproducts of these food-grade reductants include microbial biomass (organic matter) and carbon dioxide (CO₂). As with any biological and some chemical reductants/amendments, small amounts of methane and/or hydrogen sulfide can be temporarily produced, but are not expected to significantly affect water quality.

Description of the Pilot Test

The field-scale pilot testing involves injection of the substrates into the aquifer in a controlled test area at the Central Area of the site, Test Cell 3 (see Figure 1 of Attachment A).

Phase 1 of Cell 3 will be approximately 200 feet wide by 1,000 feet long. When fully expanded, Test Cell 3 will be approximately 1,800 feet wide by 1,000 feet long. Test Cell 3 is designed to investigate the feasibility of using cross-gradient recirculation techniques to create and maintain a reactive bio-barrier through which groundwater flows and Cr(VI) is reduced to Cr(III).

Phase 1 of the pilot test is expected to last approximately 12 months. Based on the results of the first phase, the pilot test will be expanded and operated for a longer period of time to continue treatment of Cr(VI). For the purposes of permitting, the period of operation for the fully expanded Cell 3 is estimated to be five years.

Physical Components of Project

The physical components of the project include the following:

Cell 3 (Phase 1)

Phase 1 of Cell 3 consists of a 200-foot wide bio-barrier with a network of downgradient monitoring well (see Figure 3 of Attachment A), and is described below:

- A bio-barrier consisting of two extraction wells (PT3-EX-01 and PT3-EX-02) and three injection wells (PT3-IW-01 through PT3-IW-03) will be installed along Frontier Road at the intersection of Fairview Road, just south of well MW-06. The extraction and injection wells will be spaced approximately 50 feet apart.
- Four new downgradient monitoring wells (PT3-MW-01 through PT3-MW-04) will be installed parallel with the extraction and injection wells. Monitoring wells will be spaced approximately 15 feet downgradient of the extraction/injection alignment. These wells will be used to monitor the performance of the substrate injections immediately downgradient of the

extraction and injection wells, within the treatment zone.

- Two new monitoring wells (PT3-MW-05 and PT3-MW-06) will be used to monitor changes in the groundwater geochemistry downgradient of the barrier treatment zone. The two new wells will be located approximately 60 feet downgradient of the barrier treatment zone.
- Existing monitoring well MW-06 and one new monitoring well (PT3-MW-07), located approximately 180 feet and 400 feet downgradient of the barrier treatment zone, respectively, will serve as a sentry monitoring well to monitor the attenuation of remediation by-products within the "buffer zone."
- Existing monitoring well MW-18, located approximately 1,000 feet downgradient of the barrier treatment zone, respectively, will serve as the contingency monitoring well to monitor remediation by-products at the downgradient end of the buffer zone.
- Two new monitoring wells (PT3-MW-08 and PT3-MW-09) will be used to monitor the lateral extent (to the east and west) of changes in the groundwater geochemistry downgradient of the barrier treatment zone. The two new wells will be located approximately 60 feet downgradient and 50 feet cross-gradient of the barrier treatment zone.

Cell 3 (Conceptual Expansion)

If Phase 1 is demonstrated to be effective, Cell 3 will be expanded east and west along Frontier Road to span the core of the Cr(VI) plume (see Figure 2 of Attachment A). It is anticipated that expansion of Cell 3 will be completed in phases similar in size and configuration as Phase 1. The number and configuration of injection, extraction, and monitoring wells in each expansion phase will be similar to that of Phase 1, unless the performance monitoring data from Phase 1 justifies an increase or reduction in the number of wells.

Portable Injection Wagon and Portable Generators

Substrate will be injected into the injection wells using a portable trailer-mounted polyethylene tank (approximately 750 to 1,000 gallons in capacity). This trailer will have its own built-in injection pump and generator assembly. The substrate will be delivered into the injection well heads through modular pipe sections or flexible hose with cam-lock fittings. Additional equipment required to facilitate cross-gradient recirculation includes dedicated submersible pumps and discharge pipe installed in the extraction wells, and additional portable generators for providing temporary power to the extraction pumps during recirculation periods. When injection/recirculation is not occurring, injection wagon and generators will be stored within an existing fenced equipment storage area at the Desert View Dairy (DVD). An existing equipment storage container within the fenced area will be used to store unused drums of biological substrate and miscellaneous field equipment when not in use.

Construction Activities

Construction of the project will include installation of up to 116 additional wells, 14 of which are included in Phase 1. The wells will be installed using hollow-stem auger or mud rotary methods. The maximum total disturbed area will be approximately 600 square feet, occurring mostly around wells. Existing access roads and disturbed areas will be used as much as possible. The total construction time is expected to last approximately 5 weeks for Phase 1, and 10 months (cumulative) for the remaining full expansion of the test cell. Typically, there will be three to four people on site during construction, with an expected maximum of eight people.

Operations and Maintenance

Operation activities will consist of groundwater pumping from the extraction well(s), mixing of extracted groundwater and Cr(VI) reduction substrates in the mixing tanks, injection of the

groundwater and substrate mixture into the injection wells, and groundwater sample collection for analysis from the monitoring wells. Maintenance will consist of weekly inspections and pump system maintenance. Except for minor amounts of lubricants, pipe adhesive and spray paint, no additional chemicals will be brought onsite or used in the system for maintenance.

The injection wagon and extraction well pumps will be used periodically and will be powered by a portable generator. Sampling is expected to occur every 2 weeks during the first month and once a month thereafter. Sampling includes drawing water from the monitoring and extraction wells and filling sample bottles. Sampling water from wells requires pumping the well and monitoring for stabilization of field parameters before taking the sample. The purged water will be contained and either mixed with substrates for subsequent injection or transported to the groundwater purge water storage tank at the Hinkley Compressor Station. Water in the storage tank is transported off site once each quarter for treatment and disposal. Typically, only one person will be required to perform sampling, injection, and maintenance duties.

When the pilot test is complete, the aquifer is expected to return to pre-treatment geochemical conditions (aerobic) within a short time. The aerobic condition is not, however, expected to be an environment where trivalent chromium can reoxidize back to a hexavalent state. Reoxidation would require the presence of a strong oxidant or a high pH. Therefore, the reduced chromium will stay in a solid and immobile form in the pore space where it will not have a negative affect on groundwater.

Monitoring

Monitoring will include characterization of groundwater samples before startup, during startup, and during the performance-monitoring period. Characterization will include Cr(VI), total chromium [Cr(T)], amendment concentrations (total organic carbon and volatile fatty acids), and geochemical indicators (alkalinity, phosphate, ammonia and nitrate, sulfate/sulfide, sodium, calcium, total dissolved solids, dissolved iron, methane, arsenic, and manganese). Parameters monitored in the field at the time of sample collection will include pH, temperature, conductivity, dissolved oxygen, and oxidation-reduction potential.

During the first injection events, a short-term tracer addition (potassium bromide) will be used to determine complete mixing of substrates across sections of the "bio-barrier." Monitoring of tracer concentration at each extraction well head during recirculation events will be performed to determine when groundwater mixing is near completion. Periodic monitoring of tracer concentrations in selected monitoring wells will be incorporated into the monitoring program. Potassium bromide is a safe and commonly used groundwater tracer chemical that will be used in small amounts to accomplish tracing of the groundwater flow. The potassium bromide will not interact with the chromium or amendments to skew the results or degrade water quality.

A detailed project description is included as Attachment A.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The local setting and land use is rural/agricultural.

Test Cell 3 will occupy a portion of the Central Area of the PG&E Hinkley Compressor Station site, at the intersection of Fairview Road (paved) and Frontier Road. The Test Cell 3 area is bound by Frontier Road to the south, and rural/agricultural land to the north, east and west.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).

A well drilling permit from San Bernardino County will be required to install wells. An EPA UIC form will be completed to identify the injection wells for input into the EPA's database. No other agencies are required to provide approval of this project.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

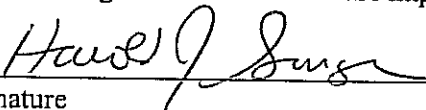
- | | | |
|---|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology /Soils |
| <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use / Planning |
| <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input checked="" type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature



Date

June 14, 2006

Signature

Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration and with CCR, Title 14, Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

- 9) The explanation of each issue should identify:
- a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Significance: No Impact.				
<p><i>The Test Cell 3 project site is not located within, or in the vicinity of, a scenic vista or any designated scenic resources. Wells will be installed using a drill rig. Each injection, extraction and monitoring wellhead will be constructed flush with the ground surface. The in-situ system facilities (tanks, hoses, generators) are portable and will be stored within an existing fenced equipment storage area at the DVD. No site grading will be required to install the system.</i></p> <p><i>The visibility of the wellheads and portable equipment to the public would be limited due the small size of the proposed equipment and the remote location of the project site.</i></p>				
Mitigation Measures:				
<i>None Required.</i>				
II. AGRICULTURE RESOURCES:				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.</p> <p>Would the project:</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Significance: <i>No Impact.</i>				
<i>The in-situ treatment being studied occurs in the aquifer at least 80 feet below ground surface. The Test Cell 3 injection and extraction wells will be installed north of and adjacent to Frontier Road. Due to the small area required for well installations and project implementation, the proposed in-situ pilot study would not interfere with ongoing or future activities and would be consistent with the existing rural-living land use designation for the site. With the exception of the installation of wells, there will be no impact on land use.</i>				
<i>No farmland would be permanently converted to non-agricultural use.</i>				
Mitigation Measures:				
<i>None Required.</i>				
III. AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Significance: <i>Less than Significant with Mitigation Incorporation.</i>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p><i>The Mojave Desert Air Quality Management District (MDAQMD) regulates air quality and emissions in the project region. Project construction activities, such as drilling and trenching, may result in emissions of particulate matter less than 10 microns (PM10) in size. However, emissions will be temporary during the project construction period. No emissions are predicted during project maintenance activities.</i></p>				
<p>Mitigation Measure: <i>Project construction activities will comply with applicable rules and requirements of the MDAQMD.</i></p> <p><i>Drilling activities are not expected to generate significant levels of dust. As a precaution, all dust generating activities will be restricted to periods of low wind (less than 25 miles per hour as monitored onsite or from local information representative of the site). Water application for dust suppression will be implemented as needed.</i></p> <p><i>Vehicle speeds on unpaved roads will be limited to 25 miles per hour to minimize vehicle-related dust emissions. Speed-limit signs will be posted.</i></p>				
<p>c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d) Expose sensitive receptors to substantial pollutant concentrations?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: <i>No Impact.</i></p> <p><i>No sensitive receptors (i.e., schools, hospitals, etc.) are located in the immediate vicinity of the project site. The nearest residence is located adjacent to private groundwater well 34-05 (see Figure 1 of Attachment A), approximately 2,000 feet west from the project site. Hinkley Elementary/Middle School is located at 37600 Hinkley Road, approximately 1.5 miles to the northwest from the project site. The Hinkley Senior Center is located at 35997 Mountain View Road, approximately 3,700 feet to the southwest from the project site. The nearest residential development in the community of Hinkley is located approximately one-half mile to the northwest from the project site. The test cell groundwater extraction and injection system will be closed systems that will not produce odors or pollutant concentrations beyond the project site.</i></p> <p>Mitigation Measures: <i>None Required.</i></p>				
<p>e) Create objectionable odors affecting a substantial number of people?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance: *Less Than Significant.*

There may be some minor and temporary odors associated with the injection of biological substrates. In addition, the injection of substrates has the potential to generate small amounts of hydrogen sulfide and methane gas. Test Cell 3 is approximately 2,000 feet to the east from the nearest residence adjacent to private well 34-05 (see Figure 1 of Attachment A). However, the rural location of the test cell sites and the distance to the nearest residences will prevent these potential conditions from affecting a substantial number of people.

Mitigation Measures:

An air monitoring program is in place to evaluate any odors, methane, and hydrogen sulfide gas levels. If high levels of nuisance air constituents are detected, a contingency plan to scale back or shut down injections will be implemented and to ventilate monitoring wells.

IV. BIOLOGICAL RESOURCES

Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Significance: *Less Than Significant Impact.*

The proposed in-situ pilot treatment system will be located sub-surface, and native wildlife in the project vicinity would have low potential for direct exposure to groundwater containing Cr(VI) or the amendments to be injected for chromium reduction.

The Test Cell 3 project site consists of soils that are either barren or comprised of non-native vegetation that provides little to no cover and forage for wildlife species. The non-native vegetation includes tilled soils, extensive cultivation, remnant crops, and presence of exotic vegetation.

A review of the California Natural Diversity Database (CNDDDB) indicated the potential presence of the desert tortoise (Gopherus agassizii). However, the project site does not fall within the United States Fish and Wildlife Service critical habitat designation for the desert tortoise. The Superior-Cronese Desert Tortoise Critical Habitat Unit is located approximately 2 miles northeast of the project site, encompassing areas northeast of Hinkley to Cronese Valley (55 FR 12178-12191).

There are no CNDDDB records related to the Mohave ground squirrel (Spermophilus mohavensis) within the project vicinity. However, there have been past sightings of the Mohave ground squirrel by PG&E personnel. No other sensitive terrestrial species are documented at, or in the vicinity of, the project site.

The project site is within the U. S. Department of the Interior Bureau of Land Management (BLM) West Mohave Plan area, Map Number 45. However, the project site is not within a West Mohave Plan habitat conservation area and would not conflict with any conservation strategy. The West Mohave Plan

has not been adopted, and is not binding; if the West Mohave Plan is adopted in its current form at some point in the future, the project would not conflict with any conservation strategy.

The purpose of the biological surveys is to characterize habitat at the project site (presence/absence of suitable habitat for sensitive species) and to document all plant and wildlife observed during the survey. A field reconnaissance survey and literature review of the Hinkley Compressor Station site was conducted in March 2005. The physical characteristics of the project site include tilled soils, extensive cultivation, remnant crops, and presence of exotic vegetation. Due to land disturbances and lack of natural habitat, the project site does not provide appropriate conditions for establishment of special-status plant species, nor is the project site considered suitable habitat for the desert tortoise. The site does include habitat with a low potential to support Mohave ground squirrel.

During previous reconnaissance field surveys, conducted in August 2002 and October 2003, no federal or state special-status plant or wildlife species were detected within the project area.

Project implementation is not anticipated to affect any sensitive plant or wildlife species. However, the following avoidance measure will be implemented during construction and operation of the project:

Environmental awareness training for all construction personnel in identifying sensitive biological resources will be provided, using PG&E's current training program. Measures required to minimize project impacts during the construction and operation phase will be identified. Workers will be required to report the occurrence of any special-status species observed on the project site to the project biologist, who would then implement species protection measures. Measures identified within the PG&E biological opinion, such as temporary fencing and avoidance of burrows, will be implemented for the desert tortoise.

Nesting birds (occurring generally February to August for most birds) protected under the Migratory Bird Treaty Act will be avoided. All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests.

All vehicle traffic will adhere to a speed limit of 25 miles per hour during construction and maintenance to ensure avoidance of impacts to sensitive biological resources on access roads.

Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas will be prohibited.

Pesticides, herbicides, fertilizers, dust suppressants, or other potentially harmful materials will be applied within the construction area in accordance with relevant state and federal regulations.

All construction vehicles and equipment will be periodically checked to ensure that they are in proper working condition and that there is no potential for fugitive emissions of oil or other hazardous products.

All staff will be trained to recognize and respond appropriately in the unlikely event that a sensitive species, such as Mohave ground squirrel or desert tortoise, is sighted.

Prior to construction activities, the test plots will be surveyed by a biologist to identify the best locations for the in-situ project facilities (wells). The field survey will take into account any areas required for equipment operation, material staging, vehicle access, and vehicle turning. To the maximum extent possible, the selected well locations will be restricted to barren areas, such as access roads, that have

been disturbed previously and cleared for use by the biologist.

Mitigation Measures:

Prior to commencement of construction activities, the avoidance measures described above will be implemented to ensure no impacts result. Further mitigation is not required.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Significance: *No Impact.*

The proposed project site and immediate surrounding areas do not support any waters of the United States, including wetlands. There are no natural drainage features such as creeks or streams supporting riparian habitat. No impacts to either the United States Army Corps of Engineers jurisdictional areas or the California Department of Fish and Game jurisdictional areas would occur from the proposed project.

Mitigation Measures:

None Required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Significance: *No Impact.*

Because of the limited surface development associated with the project and the limited wildlife in the project vicinity, no impact to wildlife movement would result from project implementation.

Mitigation Measures:

None Required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Significance: *No Impact.*

San Bernardino County has various policies relating to the conservation and protection of biological resources. Native desert plants and trees are protected in Chapter 4 (Desert Native Plant Protection), Division 9 (Plant Protection and Management) of San Bernardino County's Development Code (Title 8). In accordance with Chapter 4, Desert Native Plant Protection, a permit is needed for the removal or transplantation of mature Dalea spinosa (smoke trees), mature individuals of the genus Prosopis (mesquite trees), all species of the family Agavaceae (century plants, nolinias, yuccas), creosote bush (Larrea tridentata) rings (10 feet or greater in diameter), and all Joshua trees (Yucca brevifolia). These species do not exist within the project site.

The in-situ project is primarily underground. The project site lies within the San Bernardino County's Biological Resources Overlay, which indicates the potential presence of the desert tortoise and Mohave ground squirrel. However, no CNDDDB records for these species occur at the proposed project site. Further, areas impacted by construction (e.g., well installations) will be located in previously-disturbed sites, such as along access roads. As a precaution, a biologist will help select the exact well and trenching locations and will be available, if needed, during construction to prevent construction activities from affecting these species.

The project site is within the BLM West Mohave Plan area. However, the project site is not within a West Mohave Plan habitat conservation area and would not conflict with any conservation strategy.

PG&E has been issued a non-jeopardy biological opinion by USFWS for ongoing maintenance activities on the PG&E gas pipeline system in the California desert on lands managed by the BLM and its effects on the desert tortoise and its critical habitat. The measures identified within this document are strictly followed.

Mitigation Measures:
None Required.

V. CULTURAL RESOURCES

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

Significance: *No Impact.*

San Bernardino County was contacted to determine whether potential cultural resources might be present at the site. No records of potential cultural resources were identified. In addition, a California Historic Resources Information Center (CHRIS) report was conducted of the project area, and no potential cultural resources were identified onsite.

Test Cell 3 is located north of Frontier Road at the intersection of Fairview Road. A cultural resources survey completed by Albion Environmental, Inc. in April 2005 included the areas immediately north of Frontier Road and east of Fairview Road. No archaeological sites or cultural remains were encountered during the survey.

No siting of Native American artifacts has been recorded by locals at the Test Cell 3 project site. In the event that Native American artifacts are encountered during drilling activities, drilling will be halted, and the resource evaluated by a qualified professional.

Mitigation Measures:

None Required.

VI. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially

result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: <i>No Impact.</i></p> <p><i>The Southern California region is a tectonically-active area that is subject to strong ground shaking due to the numerous earthquake fault zones in the area. The nearest fault to the project site is the Lenwood-Lockhart-Old Woman Springs Fault, located approximately 0.4 miles from the site. No known faults traverse the project site. The project does not include plans to build any structures in the project area. PG&E has a detailed emergency preparedness plan that describes the specific procedures to be followed in the event of earthquake-induced damage.</i></p> <p>Mitigation Measures: <i>None Required.</i></p>				

VII. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Significance: <i>Less Than Significant Impact with Mitigation Incorporated.</i></p> <p><i>Small quantities of fuel or other materials (e.g., pipe glue, spray paint) may be on site temporarily during construction.</i></p> <p><i>The biological substrates to be injected into the groundwater are food-grade materials that naturally biodegrade ranging from one week for lactate to several months for EVO.</i></p> <p><i>Small quantities (about ten pounds) of potassium bromide will be used as tracer during the first Phase 1 substrate injection and recirculation events to evaluate groundwater/substrate mixing in the aquifer.</i></p>				

Potassium bromide is a salt and does not require special transportation, handling or storage. Only biological food-grade substrates will be stored on site. No hazardous chemicals will be stored on site.

Project operations will not result in potential hazards to the public or the environment due to the addition of in-situ groundwater treatment biological substrates. Following injection of the substrates, natural microbial processes will reduce the Cr(VI) to Cr(III). The biological substrates will naturally degrade with no impacts to groundwater quality except reduction of chromium. Prevailing groundwater geochemical conditions will return to pre-treatment conditions following completion of the pilot test.

No hazards to the environment or to the public are expected to occur from project implementation. There is the potential for workers to be exposed to groundwater containing Cr(VI) should there be a mechanical or piping failure during the recirculation process at each test cell area.

Mitigation Measures:

The PG&E site representative will ensure that no hazardous chemicals are stored onsite, and will ensure compliance by recording results of a monthly site inspection in a permanent log book.

All workers will abide by the "Hinkley Field Work Health and Safety Plan" to prevent and minimize exposure to groundwater containing Cr(VI). Personal protective equipment, consisting of a modified Level D, will be worn during drilling activities for installation of wells. The San Bernardino County Division issuing the drilling and trenching permit will ensure that personnel are abiding by the Health and Safety Plan. Accidental spills of chromium-containing groundwater shall be recorded in the field log and reported to the Water Board and San Bernardino County within one working day.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

plan?				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Significance: <i>No Impact.</i>				
<i>The nearest school to the project site is Hinkley Elementary/Middle School, located at 37600 Hinkley Road, approximately 1.5 miles west from the project site. The project site does not fall within an existing airport land-use plan and is not within 2 miles of a public or private airport.</i>				
<i>Project implementation involves the construction and operation of a subsurface in-situ pilot testing system that would not affect implementation of any emergency response or emergency evacuation plans for the project site and vicinity. Due to the lack of vegetation at the site and vicinity, there is no potential for impacts related to wildland fires.</i>				
Mitigation Measures: <i>None Required.</i>				

VIII. HYDROLOGY AND WATER QUALITY				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Significance: <i>Less than Significant Impact with Mitigation Incorporated.</i>				
<i>The proposed project is designed to be compatible with the LRWQCB Water Quality Control Plan for the Lahontan Region (Basin Plan). Specifically, the project will be consistent with Resolution 68-16, <u>Statement of Policy with Respect to Maintaining High Quality of Waters in California</u>. Resolution 68-16 states that existing high quality waters will be maintained until it can be demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses and will not results in water quality less than that prescribed in the policies. The pollution of chromium to groundwater from the Hinkley Compressor Station has adversely affected water quality and beneficial uses. To remediate chromium pollution and restore water quality, the discharger proposes to inject waste that will temporarily degrade water quality in a limited area. Therefore, the project meets the requirements of Resolution No. 68-16 in that the temporary change to water quality will be consistent with the maximum benefit to the people of the State, will not unreasonable affect beneficial uses outside the pilot study area, and will have the benefit of restoring water quality to that prescribed in the policies.</i>				
<i>The groundwater below the pilot study area contains total chromium at concentrations above the California Maximum Contaminant Level of 50 micrograms per liter (0.05 milligrams per liter[mg/L]). Most of the total chromium present is in the form of Cr(VI), ranging in concentration from 65 to 135 micrograms per liter. The objective of the pilot study is to improve the aquifer water quality in the treatment zone by reducing Cr(VI) to Cr(III), which will precipitate on the aquifer solids. Addition of biological substrates will result in changes in water quality with a net improvement in water quality with respect to the constituents of concern [i.e., Cr(VI) and total chromium Cr(T)]. In the area of the</i>				

recirculation system, or "biobarrier," water quality standards will likely be exceeded for the following constituents: bromide, fatty acids, dissolved oxygen, and total organic carbon. These constituents will return to levels below water quality standards upon mixing with oxygenated groundwater before reaching the pilot study boundaries.

Biological Substrates

Biological substrates will be injected during the pilot study to stimulate naturally-occurring microbes to consume oxygen in groundwater, creating an anaerobic environment for reducing Cr(VI).

Bioremediation end-products are carbon dioxide, water, and carbon as microbial biomass. Incomplete biological consumption of substrates could result in oily or fatty acid detection in groundwater creating a nuisance condition. Excess carbon could also be detected above water quality standards as total organic carbon.

Total Substrate Volume for Phase 1 - The estimated performance period for Phase 1 of Cell 3 is 12 months. The maximum volume of substrate expected to be used during the first year at the 200-foot Phase 1 bio-barrier is 5,000 gallons of 60 percent sodium lactate, 18,000 pounds of powder whey, 45,000 gallons of fresh liquid whey, and/or 1,200 gallons of EVO. These volumes are based on local groundwater flow conditions and aquifer geochemistry, current concentrations of Cr(VI) in this area, and results of the compressor station pilot study. The actual volume of substrate injected will likely be less than this estimate, and will be adjusted based on site conditions and pilot study monitoring data.

Total Substrate Volume for Full Expansion of Cell 3 - The estimated performance period for the full expansion of Cell 3 is 5 years. The total estimated annual volume of biological substrate to be injected at Cell 3 is 45,000 gallons of lactate, 160,000 pounds of powder whey, 400,000 gallons of fresh liquid whey, and/or 11,000 gallons of EVO. This volume is based on estimates for Phase 1 multiplied by the number of phases (nine) for the 1,800-foot wide conceptual full expansion of Cell 3 presented on Figure 2. Assuming an operational lifetime of 5 years for the entire Cell 3 build-out, the total volume of biological substrate to be injected at Cell 3 is 225,000 gallons of lactate, 800,000 pounds of powder whey, 2,000,000 gallons of fresh liquid whey, and/or 55,000 gallons of EVO. The actual volume of substrate injected will likely be less than this estimate, and will be adjusted based on site conditions and pilot study monitoring data.

Temporary mobilization of metals (arsenic, manganese, and iron) may occur as a result anaerobic groundwater conditions caused by injecting biological substrates into the aquifer. This mobilization is temporary and any mobilized metals are expected to precipitate once the substrates have been depleted and/or the metals are exposed to background aerobic groundwater conditions.

Tracer Compound

Potassium bromide (tracer compound) will be mixed with the first batch of substrate injected at each Phase 1 injection well during the pilot study. The bromide will be monitored with ion-specific down-hole probes at the extraction well head during recirculation, in order to evaluate groundwater/substrate mixing. Approximately 10 pounds of bromide crystals will be injected during Phase 1. The tracer will be injected into the groundwater at a concentration of approximately 500 mg/L, and diluted in the aquifer during groundwater recirculation.

Mitigation Measures:

No violations of the water quality standards or the Waste Discharge Requirements outside the pilot study boundaries are anticipated to result from this project. Monitoring and Reporting requirements will verify compliance with discharge requirements. The project proponent will record water quality results and notify the Water Board if violations of water quality standards are detected.

Contingency Plan

The contingency plan includes a monitoring plan and mitigation measures to be performed if threshold concentrations of remediation byproducts (unutilized injected substrates, bromide, and mobilized reduced metals) are exceeded at designated sentry monitoring wells within the Cell 3 buffer zone. Mitigation measures will be initiated to prevent remediation byproducts above the threshold concentrations from migrating beyond the pilot study buffer zone, and to protect the water quality at private wells near Cell 3. The nearest private wells within the potential influence of Cell 3 are located approximately 3,000 feet downgradient of the Cell 3 injection/extraction wells. The location of these private wells (26-08, 34-02, and 34-14) are shown on Figure 1 of Attachment A.

A proposed contingency plan describes measures to monitor remediation byproducts outside of the pilot study buffer zone. Mitigation measures will be performed if threshold concentrations of these constituents are exceeded at designated sentry monitoring wells within the Cell 3 buffer zone. Mitigation measures will be initiated to prevent remediation byproducts above the threshold concentrations from migrating beyond the pilot study buffer zone, and to protect the water quality at private wells near Cell 3.

The planned overall mechanism for mitigating remediation byproducts will be natural attenuation because it is known that such constituents are transient in nature. Active air sparging downgradient of the bio-barrier will be initiated if groundwater monitoring indicates that remediation by-products are not attenuating.

In the event that un-utilized reagents, the tracer, and/or reduced metals, other than chromium, are detected at waste discharge requirements trigger concentrations in groundwater in the second row of sentry monitoring locations, located 400 feet from the injection wells, the applicant will implement the Contingency Plan for air sparging within 14 days. Air sparging will restore the aquifer to pre-pilot study oxygenated conditions, off setting the reduced environment created by reagent injections. Such action should restore water quality to levels listed in waste discharge requirements and prevent migration away from the pilot study boundaries.

In the event that remediation byproducts are detected at water quality standards in contingency monitoring wells near the test cell boundaries, the applicant will notify the Water Board within two working days of violations being detected. Within seven days of notification, the applicant will submit a proposal to the Water Board to prevent such migration outside the pilot study boundaries. The proposal shall contain a monitoring plan to adequately monitor groundwater outside the pilot study boundaries downgradient of the area where violations were observed.

The proponent shall maintain a field log noting when and how the Contingency Plan is implemented.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Significance: *No Impact.*

All water extracted by the in-situ pilot system will be reinjected into the aquifer. No net removal of groundwater will occur. A benefit of utilizing in-situ groundwater treatment is that in-situ treatment does not reduce the quantity of water resources in the area, and therefore promotes wise management of water resources. Groundwater levels at the injection and extraction wells at both test cell areas are expected to stabilize to pre-test levels within days following the conclusion of the pilot study.

The injected biological substrates will slightly raise groundwater levels temporarily. Overall, the effect on groundwater volume will be minimal.

Mitigation Measures:

None Required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Significance: *No Impact.*

The in-situ pilot system will not alter existing surface topography, drainage pathways, vegetation, or other features that direct or manage surface water. There are no streams or rivers in the immediate project area. No drainage patterns will be created such that erosion, siltation, or flooding would result on or off the project site.

Mitigation Measures:

None Required.

f) Otherwise substantially degrade water quality?

Significance: *Less than Significant Impact with Mitigation Incorporated.*

The in-situ pilot study project will change the existing water quality in the pilot test areas for a limited time. However, the injection of biological substrates into the groundwater will promote the reduction of Cr(VI) to Cr(III), a form of chromium that is expected to precipitate out of the groundwater, in the

groundwater local to the in-situ test.

Substrate Injection

Biological substrates will be injected through injection wells. The area of groundwater affected will be limited to the treatment zone and the buffer zone monitored downgradient of the treatment zone, and the substrates will biodegrade naturally. Microbes should consume all or nearly all of the substrates as food, and anaerobic conditions will be created. Any remaining substrate in groundwater will degrade naturally to non-detect concentrations. The final degradation products of the biological substrates would typically be microbial biomass (organic matter), carbon dioxide, water, and possibly small amounts of methane and hydrogen sulfide gas can be produced. However, the quantity and nature of these compounds would not adversely impact groundwater conditions. Given the depth to groundwater, methane and hydrogen sulfide gases are not expected to impact surface soils.

Besides chromium, the project has the potential to chemically reduce certain metals existing in soil to a lower oxidation state, such as iron, manganese and arsenic. These reduced metals may become more mobile in the subsurface and migrate with groundwater, and their presence will be monitored during the pilot study. This mobilization is temporary and any mobilized metals are expected to precipitate once the substrates have been depleted and/or the metals are exposed to background aerobic groundwater conditions. The area of groundwater affected will be limited to the treatment zone and the buffer zone monitored downgradient of the treatment zone.

Because no surface water bodies are located in the vicinity of the project, no impacts to surface water quality will occur.

Tracer Compound

Potassium bromide, a salt, will be injected into the groundwater as a tracer compound at a concentration of approximately 500 mg/L. The tracer will be diluted during groundwater recirculation. As the tracer moves with groundwater, it will decrease in concentration with distance from the injection point and should achieve water quality standards within the test cell boundaries. Therefore, the tracer impacts upon water quality will be short term and will not affect beneficial uses outside the test cells during or after the pilot test.

Mitigation Measures:

In the event that water quality parameters are not restored at designated areas to levels listed in the waste discharge requirements, the applicant will implement the proposed Contingency Plan as described in Item a) of this section.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

result of the failure of a levee or dam?

j) Inundation by seiche, tsunami, or mudflow?

Significance: *No Impact.*

The nearest surface water body to the project site is the Mohave River, located approximately 1.5 miles to the south. The project is not located within the 100-year floodplain and would not be subject to flood-related hazards. Due to the distance from any body of water and steep slopes, the proposed project is not subject to risk from seiche, tsunami, or mudflows.

Mitigation Measures:

None Required.

IX. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

Significance: *No Impact.*

The nearest residential community is within the town of Hinkley, located approximately one-half mile from the project site. Implementation of the proposed project would not divide an established community. The in-situ treatment is primarily underground and not visible to the public. There are already many monitoring and extraction wells in the area. The nearest residence is located approximately 2,000 feet west of the proposed Cell 3 location, adjacent to private well 34-05 (see Figure 1 of Attachment A).

The land use designation (zoning) for the project site and surrounding area is RL-5 (Rural Living 5-acre minimum). The project will not require a Temporary or Conditional Use Permit since temporary operations, including installation of wells and operation of the in-situ pilot system, will not affect the existing land uses. Therefore, no conflict with the San Bernardino County General Plan or zoning ordinances would result from implementation of the project.

Because of the limited surface facilities required for project implementation, the project would not conflict with any future land use developed consistent with the existing general plan and zoning for the

site. Therefore, no conflict with the San Bernardino County General Plan or development ordinance would result from project implementation.

The project site does not fall within an adopted habitat conservation plan or natural community conservation plan. The proposed West Mohave Plan, under preparation by the Bureau of Land Management and local state agencies, would apply to the project if adopted. However, project implementation would not conflict with this plan, as proposed.

Mitigation Measures:

None required.

X. MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Significance: *No Impact.*

The Test Cell 3 project site is not located within a delineated mineral resource zone (i.e., the site is not included on the County of San Bernardino Mineral Resource Zone Overlay). No loss of, or interference with, mineral resource operations would result from project implementation.

Mitigation Measures:

None required.

XI. NOISE

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance: *No Impact*

Audible noise levels during project operations will be limited to the immediate vicinity of the substrate injection and groundwater recirculation activities. The minimal noise generated by the electric pumps and portable generators will be attenuated by the distance to the nearest receptor. The nearest residence is located approximately 2,000 feet west of the proposed Cell 3 location, adjacent to private well 34-05 (see Figure 1 of Attachment A). No permanent noise-producing generators will be required. The electric pumps and portable generators will be operated only intermittently and during standard business hours. Therefore, no impacts are anticipated.

Mitigation Measures:

None Required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance: *Less than Significant.*

Project construction activities (drill rig) will temporarily increase noise levels at the project site. However, construction noise will be short-term and conducted only during standard daytime business hours. The noise generated by construction will be attenuated by the distance to the nearest receptor and the nearest sensitive noise receptor. The nearest residence is located approximately 2,000 feet west of the proposed Cell 3 location, adjacent to private well 34-05 (see Figure 1 of Attachment A). The nearest sensitive noise receptor is the Hinkley Senior Center located at 35997 Mountain View Road, approximately 3,700 feet southwest from the proposed Cell 3 location.

Mitigation Measures:

The project will be conducted in accordance with the County of San Bernardino's General Plan Noise Element standard for residential development.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Significance: *No Impact.*

The project site is not located within an airport land-use plan or within 2 miles of a public airport. There are no private airstrips in the project vicinity that would be affected by project implementation.

Mitigation Measures:

None Required.

XII. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Significance: *No Impact.*

Project implementation does not involve the construction of new residential or commercial development or infrastructure that could support additional population growth in the project area. Additionally, no housing displacement would result from project implementation, and no residents would be displaced from their existing residence.

Mitigation Measures:

None Required.

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

Significance: *No Impact.*

Project construction and operation activities have the normal potential for accidents involving fire or injury that could require local emergency fire service personnel and equipment. The limited number of personnel (up to eight, but usually two) at the site would not pose a burden upon public services. Therefore, project implementation would not require the expansion of existing emergency services and would not affect current response times.

Project operations would involve operators in attendance approximately monthly for about one week. The operator will commute to the site and live elsewhere. No population growth would result from the project. If an emergency arose, PG&E Compressor Station personnel could also be utilized for assistance. Therefore, no impact to police, schools, parks, or other public facilities is anticipated.

Mitigation Measures:

None Required.

XIV. RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Significance: *No Impact.*

The project would not result in direct or indirect population growth; therefore, project implementation will not increase the use or demand for recreational facilities. The proposed project does not include the construction or expansion of recreational facilities.

Mitigation Measures:

None Required.

XV. TRANSPORTATION/TRAFFIC

Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Significance: *Less than Significant.*

The construction period of the proposed project facilities may result in a minor, temporary increase in traffic volume due to a maximum of eight construction workers travelling to and from the project site, drilling activities, and the delivery of materials and equipment via truck. Based on the scale of construction activities and relatively remote location of the project site, this project would not substantially affect existing roadway capacity. Project operations will require an operator to visit the site approximately monthly for about one week to perform monitoring, operations, and maintenance activities.

Mitigation Measures:

During construction, delivery, and drilling activities, project personnel will prevent vehicles from lining up on County roads that could prevent through traffic.

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance: No Impact.

The transportation of construction materials and equipment will be in accordance with standard safety practices and applicable laws and regulations and would not substantially increase hazards. Truck trips associated with maintenance operations would be compatible with existing roadway infrastructure and surrounding activities. Adequate emergency access to the project site will be provided from Sante Fe Avenue.

The negligible increase in traffic generated by project operations from an operator visiting the site approximately monthly for one week would not affect existing levels of service on surrounding roadways in the vicinity of the project. Project operations would not generate parking demand that would exceed capacity. No effect on transportation policy, plans, or programs would result from project implementation, including those involving alternative transportation. Project implementation does not

involve any change to the design of existing roadway configurations.

The project site is not located within the nearby vicinity of an airport or airfield; the proposed project improvements and operations would have no effect on existing air traffic patterns or safety.

Mitigation Measures:

None Required.

XVI. UTILITIES AND SERVICE SYSTEMS

Would the project

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance: *No Impact.*

Potential impacts associated with the proposed groundwater injection and extraction wells are discussed throughout this initial study; no significant impacts are anticipated from project

implementation.

Groundwater used to mix and dilute biological substrates will be obtained from the extraction wells.

Since no surface water will be generated during the proposed project, implementation does not require additional stormwater drainage facilities. Groundwater extracted for project operations will be reinjected into the aquifer.

During the project construction, workers will use the existing septic facilities at the DVD and compressor station. No demand will be placed on the regional wastewater treatment facilities serving the area. The nominal volume of solid waste generated by the proposed project will be disposed of in accordance with all applicable laws and regulations.

During the project operations, workers will use the existing septic facilities at the DVD and compressor station. No demand will be placed on the regional wastewater treatment facilities serving the area. The nominal volume of solid waste generated by the proposed project will be disposed of in accordance with all applicable laws and regulations.

Mitigation Measures:

None Required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Significance: *Less than Significant.*

No significant habitat would be impacted by the project. Areas that will be disturbed by the project (well installation and trenching) will be located in areas already disturbed by agricultural operations, access roads, or other improvements/disturbances. No natural water features or fish species are located within the vicinity of the project site. As discussed in Section 5, the project will not eliminate important examples of major periods of California history or pre-history due to the low level of disturbance.

The potential for occurrence of wildlife species in these areas is considered very limited due to the highly disturbed nature of the project site. No special-status wildlife species were detected during field surveys. A field reconnaissance survey and literature review of the Hinkley Compressor Station site was conducted in March 2005. The physical characteristics of the project site include tilled soils, extensive cultivation, remnant crops, and presence of exotic vegetation. Due to land disturbances and lack of natural habitat, the project site does not provide appropriate conditions for establishment of special-status plant species, nor is the project site considered suitable habitat for the desert tortoise. The site does include habitat with a low potential to support Mohave ground squirrel.

Project implementation is not anticipated to affect any sensitive plant or wildlife species. However, the following avoidance measure will be implemented during construction and operation of the project:

Environmental awareness training for all construction personnel in identifying sensitive biological resources will be provided, using the current PG&E training program. Measures required to minimize project impacts during the construction and operation phase will be identified. Workers will be required to report the occurrence of any special-status species observed on the project site to the project biologist, who would then implement species protection measures. Measures identified within the PG&E biological opinion, such as temporary fencing and avoidance of burrows, will be implemented for the desert tortoise.

Nesting birds (occurring generally February to August for most birds) protected under the Migratory Bird Treaty Act will be avoided. All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests. Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas will be prohibited.

Pesticides, herbicides, fertilizers, dust suppressants, or other potentially harmful materials will be applied within the construction area in accordance with relevant state and federal regulations.

All vehicle traffic will adhere to a speed limit of 25 miles per hour during construction and maintenance to ensure avoidance of impacts to sensitive biological resources on access roads. All construction vehicles and equipment will be periodically checked to ensure that they are in proper working condition and that there is no potential for fugitive emissions of oil or other hazardous products.

Prior to construction activities, the test plots will be surveyed by a biologist to identify the best locations for the in-situ project facilities (wells). The field survey will take into account any areas required for equipment operation, material staging, vehicle access, and vehicle turning. To the maximum extent practicable, the selected well locations will be restricted to barren areas, such as access roads, that have been disturbed previously and cleared for use by the biologist.

Mitigation Measures:

When the precautions and measures mentioned above are implemented during the project, potential impacts will be effectively mitigated. Therefore, no adverse cumulative impact for degrading the quality of the environment is anticipated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).

Significance: *Less than Significant.*

The project site is surrounded primarily by land designated Rural-Living. Project operations require extraction and re-injection of groundwater from the Mohave Basin with no net removal of water.

Construction activities may temporarily contribute to the PM10 air quality issue in the region. Implementation of measures developed by the MDAQMD will ensure this impact is minimized.

The injection of 800,000 pounds of powder whey and 2,280,000 total gallons of lactate, whey, and EVO have the potential to degrade water quality if there is no consumption by naturally occurring bacteria in groundwater. The three reagents also have the potential to produce nuisance gases and odor if applied too quickly. The tracer test consisting of potassium bromide could potentially adversely impact water quality if too much is added or it does not dilute within the pilot study areas.

The completed pilot test at the East LTU and the former unlined pond areas indicate that naturally-occurring microbes would readily consume substrates injected to groundwater without creating adverse conditions. Mobilized reduced metals and bromide should attenuate to water quality standards within the boundaries of the pilot study. Monitoring activities listed in the Sampling and Analysis Plan will verify that no adverse conditions are created by project implementation. The proponent will conduct all construction activities during normal business hours, and thereby ensure that noise impacts are minimal.

No adverse cumulative impact to groundwater levels is anticipated.

Mitigation Measures:

As noted previously, the groundwater and air monitoring plans will effectively determine whether water degradation or nuisance air emissions are occurring. The contingency plans in place will ensure that potential impacts are identified and, if so, effectively mitigated. Therefore, no adverse cumulative impact to ground water levels is anticipated.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Significance: *Less Than Significant Impact.*

Project implementation is not anticipated to result in any adverse environmental impacts and would not cause any substantial adverse effects to human beings. The final degradation products of the biological nutrients would typically be microbial biomass (organic matter), carbon dioxide, water, and possibly low concentrations of methane and hydrogen sulfide under anaerobic conditions. These degradation products are not expected to significantly effect water quality. Cr(VI) will be converted to Cr(III), which will primarily precipitate as chromium oxide/hydroxide. Therefore, this project will have a positive effect by reducing the concentration of Cr(VI) in groundwater with no significant net removal of water.

The pilot test project will result in significant environmental benefits that are consistent with the Basin Plan and beneficial uses of waters of the State of California, and the project will provide field data that will be used to select a long-term remediation alternative for the PG&E Hinkley Compressor Station site.

Mitigation Measures:

The contingency plans in place will ensure that potential impacts are identified and, if so, effectively mitigated. Therefore, no adverse cumulative impact to water quality or the environment is anticipated.

CENTRAL AREA IN-SITU REMEDIATION PILOT STUDY PROJECT

MITIGATION MEASURES

Mitigation measures are incorporated into the project as follows:

Air Quality Less Than Significant with Mitigation Incorporated. Project construction activities may temporarily contribute to the existing PM10 air quality issue in the region during construction activities.

- During construction activities, the applicant shall comply with all applicable rules and requirements of the Mojave Desert Air Quality Management District (MDAQMD), including Rule 403.2 to mitigate the impact of dust and PM10 emission.
- The project has the potential for producing odors. An air monitoring program will evaluate whether odors, methane, and hydrogen sulfide gas levels are detected outside the pilot study boundaries. If high levels of nuisance air constituents are detected, a contingency plan to scale back or shut down injections will be implemented and to ventilate monitoring wells.

Personnel shall maintain a record of air monitoring results in the field log and note when mitigation measures are implemented.

Biological Resources – Less Than Significant with Mitigation Incorporation.

- Prior to commencement of construction activities, the following avoidance measures will be implemented to ensure no impacts result.
 1. Environmental awareness training for all construction personnel in identifying sensitive biological resources will be provided, using PG&E's current training program. Workers will be required to report the occurrence of any special-status species observed on the project site to the project biologist, who would then implement species protection measures. Measures identified within the PG&E biological opinion, such as temporary fencing and avoidance of burrows, will be implemented for the desert tortoise.
 2. To the maximum extent practicable, the selected well locations will be restricted to barren areas, such as access roads, that have been disturbed previously and cleared for use by the biologist.
 3. All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests.

4. All vehicle traffic will adhere to a speed limit of 25 miles per hour during construction and maintenance to ensure avoidance of impacts to sensitive biological resources on access roads.
5. Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas will be prohibited.

Personnel shall note in the field log when sensitive biological resources are observed and when mitigation measures are implemented.

Hazards and Hazardous Material Less Than Significant with Mitigation Incorporation.

- No hazardous materials are involved in the Project. The biological reagents to be used in the pilot test are food-grade and do not require special transportation, handling, or storage. The tracer, potassium bromide, is a salt and also does not require special transportation, handling or storage.
- There is potential for workers to be exposed to groundwater containing hexavalent chromium (Cr(VI)), a toxic chemical, from equipment failure during drilling activities, well development, and the recirculation system during the pilot test. All workers will abide by the "Hinkley Field Work Health and Safety Plan" to prevent and minimize exposure to groundwater containing Cr(VI). All workers shall wear personal protective equipment consisting of a modified Level D for normal field activities. Additional protective equipment will be worn during drilling activities for installation of wells according to that specific health and safety plan. In the event of a release of groundwater containing Cr(VI), all details shall be recorded in the field log and reported to the Water Board within two working days.
- The Project has the potential for producing gases, such as methane and hydrogen sulfide, from anaerobic reducing conditions. The applicant will adhere to the Sampling and Analysis Plan for determining the presence of such gases around wells used in the Project. If air monitoring indicates that gases are present, personnel shall wear appropriate personal protective equipment. Also, if air monitoring indicates that gases exist at action levels inside well casings, the affected wells will be vented. There are no other structures that are a part of the Project where gases could become trapped and pose a threat to humans. Personnel shall maintain a record of air monitoring results in the field log and note when mitigation measures are implemented.

Hydrology and Water Quality Less Than Significant with Mitigation Incorporation.

- The proposed project has the beneficial effect of reducing Cr(VI) in the groundwater to trivalent chromium Cr(III) that will precipitate out onto soil material and become essentially immobile. This action will result in an overall reduction of total chromium in groundwater in the test cell area.
- Management methods will be used to mitigate any potential adverse effects from in-situ injection of reagents. The applicant will adhere to the procedures described in the Sampling and Analysis Plan for all aspects of project implementation. Reagents will be added to the aquifer at the proposed balanced-injection rates to minimize the likelihood of creating conditions that could produce gases and odors. Spills exceeding 5 gallons onto ground surface shall be noted in the field log along with implemented mitigation measures.
- Project implementation will include monitoring groundwater and air for biological indicators to demonstrate that Cr(VI) is being effectively reduced and whether potential byproducts, such as gases and mobilized metals/metalloids, are generated. If gases are generated, the applicant will comply with mitigation measures described in the Air Quality section above. The proponent will record water quality results and notify the Water Board within five working days if violations of water quality standards are detected.
- In the event that reduced metals, other than chromium, are detected at trigger concentrations in waste discharge requirements in groundwater at the second row of sentry monitoring locations, located 400 feet from the injection wells, the applicant will implement the Contingency Plan within 14 days. Contingency Plan implementation shall prevent contaminant migration from the downgradient boundary of the study area and to restore water quality to levels listed in the waste discharge requirements. Implemented mitigation measures and associated activities shall be recorded in the field log.
- In the event that reagents, the tracer, and/or byproducts are detected at trigger concentrations in contingency monitoring wells near the test cell boundaries, the applicant will notify the Water Board within five working days. Within seven days of notification, the applicant will submit a proposal to the Water Board to prevent such migration outside the pilot study boundaries. The proposal shall contain a monitoring plan to adequately monitor groundwater outside the pilot study boundaries downgradient of the area where violations were observed.

Noise Less Than Significant with Mitigation Incorporation.

- The project will be conducted in accordance with the County of San Bernardino's General Plan Noise Element standard for residential development. If violations occur, personnel will note in the field log when appropriate mitigation measures are implemented to reduce noise.

Transportation/Traffic -- Less Than Significant with Mitigation Incorporation.

- During construction, delivery, and drilling activities, project personnel will prevent vehicles from lining up on County roads that could prevent through traffic. If traffic congestion occurs from the project, mitigation actions taken by personnel, such as re-directing project traffic, shall be recorded in the field log.