

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

RESOLUTION NO. R6V-2006-0053

**APPROVING THE INITIAL STUDY/CHECKLIST
AND CERTIFYING A MITIGATED NEGATIVE DECLARATION
FOR IN-SITU SOURCE AREA REMEDIATION 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 project for long-term remediation of hexavalent chromium in soil and groundwater. The project will inject a solution of food-grade reagents (lactate, whey, emulsified vegetable oil, and, possibly, ethanol) into the groundwater to stimulate bioremediation of mobile hexavalent chromium to essentially immobile trivalent chromium. The project will be built and operated in two phases over at least five years.
3. The Discharger owns the Compressor Station located at 35863 Fairview Road in Hinkley, California (facility), at County Assessor Parcel No. 0488-112-52. The facility is used to transport natural gas along pipelines to farther destinations. The project will take place at the facility and possibly on two western adjacent parcels (Assessor Parcel Numbers 0488-112-56 and 0488-112-58), after obtaining access from the owners. The Discharger also owns land immediately north of the facility (across Community Boulevard), where groundwater monitoring of the chromium plume will occur.

4. Soil and groundwater beneath the facility 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 facility 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. The project will be implemented in the source area of contamination where chromium concentrations are greatest, in the thousands of micrograms per liter.
5. The facility is subject to various Lahontan Regional Water Quality Control Board orders, including the Cleanup and Abatement Order (CAO) 6-01-50, issued in 2001. The Discharger is required to conduct cleanup of chromium in groundwater in a manner that does not threaten to create nuisance conditions.
6. 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.
7. 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.
8. 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. Other metals were also reduced out of the aquifer material to groundwater during the pilot test. The fate and transport of these metals beyond the project boundaries are still being monitored.

9. On June 14, 2006, the Water Board issued Waste Discharge Requirements to the Discharger to conduct a large, field-scale pilot study in the central area of the chromium plume. The Requirements allow the discharge of food-grade reagents to groundwater to evaluate the effectiveness of in-situ remediation cross-gradient to groundwater flow. In addition, whey is added as a reagent in the project since it has properties that are nearly identical to that of lactate. Pilot study results will be used to design and expand remediation into a full-scale project in the future.
10. Under the ROWD described in finding number 2, above, and in the documents referenced in finding number 6, above, 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 facility and in the groundwater plume. At the facility, the Discharger will create a localized reducing condition in groundwater by injecting a solution of food-grade reagents into the subsurface via wells. Downgradient extraction wells and dual-screen wells will create a recirculation effect that will spread reagents in the aquifer. The reagent solution will facilitate bioremediation by reducing hexavalent chromium to trivalent chromium. Groundwater quality monitoring will evaluate the affects of the bioremediation process in the project area.
11. The direction of groundwater flow in the project area is not exactly known but suspected to flow to the north and northwest directions. Groundwater quality within and beyond the project area will be monitored through a Monitoring and Reporting Program Order No. R6V-2006-0054. 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 project boundaries or contingency area beyond at water quality objectives.
12. The injection of a solution of lactate, whey, emulsified vegetable oil, and, possibly, ethanol, in the soil and groundwater is a discharge of waste subject to section 13260 of the CWC. However, the discharge of these reagents 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.

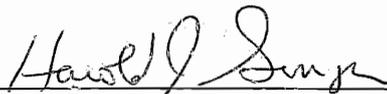
14. The permitted discharge is consistent with the anti-degradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). The discharge may result in some localized mobilization of metals that will be monitored to verify natural attenuation. Lactate, whey, emulsified vegetable oil, and ethanol will degrade to non-regulated products and should have no long-term effect 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. 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 November 8 & 9, 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.
18. The Water Board has reviewed the Initial Study/Checklist and Mitigated Negative Declaration that was 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.
19. The Water Board considered all testimony and evidence at a public hearing held on November 8 & 9, 2006, at Palmdale and Adelanto, California, and good cause was found to approve the Initial Study/Checklist and certify the 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:

1. The draft Initial Study/Mitigated Negative Declaration, and the responses to public comments constitute a complete and technically adequate environmental document in compliance with the California Environmental Quality Act;
2. The Mitigated Negative Declaration is hereby certified, and the Executive Officer is directed to file a Notice of Determination with the State Clearinghouse within 30 days as required by the California Code of Regulations;
3. A copy of this Resolution shall be forwarded to the State Water Resources Control Board and all interested parties;
4. The Executive Officer is directed to sign the Certificate of Fee Exemption and to transmit it to the California Department of Fish and Game (CDFG) in lieu of payment of the CDFG filing fee;
5. The discharge of lactate, whey, emulsified vegetable oil, and, possibly, ethanol into soil and groundwater shall conform to all requirements, conditions, and provisions set forth in the Discharge Prohibitions and Discharge Specifications of Order No. R6V-2006-0054. Groundwater and air monitoring shall conform to the Monitoring and Reporting Program No. R6V-2006-0054.

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 November 9, 2006.



HAROLD J. SINGER
EXECUTIVE OFFICER

Initial Study/Environmental Checklist
***In-Situ* Source Area Remediation Project**
Pacific Gas and Electric Company Compressor Station, Hinkley, California

1. Project title:
In-situ Source Area Remediation Project, Pacific Gas and Electric (PG&E) Company Compressor Station, Hinkley, San Bernardino County, California
2. Lead agency name and address:

California Regional Water Quality Control Board, Lahontan Region (Water Board)
2501 Lake Tahoe Blvd., South Lake Tahoe, California 96150
3. Contact person and phone number:
Chuck Curtis
Telephone: 530/542-5460
4. Project location:

Intersection of Fairview Road and Community Road
Hinkley, San Bernardino County, California 92347
5. Project sponsor's name and address:

Pacific Gas and Electric Company
350 Salem Street
Chico, CA 95926
Contact Person: Eric Johnson
Telephone: 530/520-2959
6. General plan designation: Rural Living
7. Zoning: RL-5
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.)

See Attached Project Description (Appendix A)
9. Surrounding land uses and setting: Briefly describe the project's surroundings:

Land uses in the project area generally consist of agricultural and rural residential uses. Land uses immediately surrounding the site include farms and scattered residences. A natural gas pipeline compressor station is currently operating on the main parcel where project activities will be implemented.
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. A building permit from San Bernardino County will be required to hook up electrical power, install underground conveyance piping, and install a control building. Temporary construction trailers, if needed, will require a temporary use permit from San Bernardino County. A United States

Environmental Protection Agency (USEPA) UIC form will be completed to identify the injection wells for input into the USEPA database. Authorization under the General Permit for Discharges of Stormwater Associated with Construction Activities will be required if it is determined that construction will result in a disturbance of 1 acre or more. No other agencies are required to provide approval of this project.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

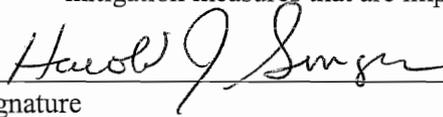
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|--|--|
| <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

Nov 9, 2006
Date

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. 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"/>
<p>Significance: No Impact.</p> <p>(a)-(d) The project site is not located within, or in the vicinity of, a scenic vista, nor are any designated scenic resources, such as trees, rock outcroppings, or historic buildings, located on site. The Hinkley Compressor Station currently occupies a portion of the main parcel on which the project would be implemented. The remainder of the site consists of vacant land, covered with non-native vegetation that includes ruderal (growing on poor land) and exotic species such as weeds, grasses, and thistle.</p> <p>Wells will be installed using a drill rig. Each injection, extraction and monitoring wellhead will be constructed flush with the ground surface. The <i>in-situ</i> system facilities will either be located within the fenced-in area of the site (injection equipment and control building) or will be buried and not visible from the public (buried conveyance piping and electrical conduits). No site grading will be required to install the system and, ultimately, 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. Therefore, the visual character of the site and its surroundings would not be substantially degraded.</p> <p>Beyond temporary construction equipment and a small control building with safety and security lighting, no new sources of light or glare would be generated by the project.</p>				
Mitigation Measures:				
None Required.				

II. AGRICULTURE RESOURCES:

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

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
(1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
Would the project:				
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: No Impact.				
(a)/(b) The proposed <i>in-situ</i> treatment would occur in the aquifer at least 80 feet below ground surface. Due to the small area required for well and piping installations and project implementation, the proposed <i>in-situ</i> treatment would not interfere with ongoing or future surface activities and would be consistent with the existing rural-living land use designation for the site. There would be no change in land use.				
(c) No farmland would be permanently converted to non-agricultural use.				
Mitigation Measures:				
None Required.				

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 checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<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>Significance: Less than Significant</p> <p>(a)-(c) The Mojave Desert Air Quality Management District (MDAQMD) regulates air quality and emissions in the project region including particulate matter with effective diameter less than 10 microns (PM₁₀). Project construction activities would result in PM₁₀ emissions from construction activities such as trenching, drilling, and construction vehicles driving on unpaved roads, as well as decommissioning facilities at the end of the project. However, at any given time, construction of only a few facilities would be underway. Because of the minor level of construction activities, emissions from other criteria pollutants such as nitrogen oxides (NO_x) and sulfur oxides (SO_x) from construction vehicles themselves would be well below the MDAQMD daily threshold limits. All construction impacts would be temporary and less than significant.</p> <p>Emissions would be limited to the project construction period. Only minimal emissions, associated with infrequent vehicle trips to the site are predicted during project maintenance activities.</p> <p>Mitigation Measures:</p> <p>To minimize emissions, best management practices for PM₁₀ will be implemented during project construction activities, according to rules and requirements of the MDAQMD.</p> <ul style="list-style-type: none"> • Vehicle speeds on unpaved roads will be limited to 25 miles per hour to minimize vehicle-related dust emissions. • All dust-generating activities will be restricted to periods of low winds (less than 15 miles per hour as monitored onsite or from local information representative of the site). • During dust-generating activities, such as drilling or trenching, water application or other dust suppression measures will be implemented as needed. • All construction vehicles and equipment will be checked periodically to ensure that they are in proper working condition and that there is no potential for fugitive emissions of oil or other hazardous products. • Other requirements of the MDAQMD, including Rules 403 (Fugitive Dust) and 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area). 				
<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: No Impact.</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>(d) No sensitive receptors (i.e., schools, hospitals, etc.) are located in the immediate vicinity of the project site. The nearest residence is located approximately 600 feet west of the project site. Hinkley Elementary/Middle School is located at 37600 Hinkley Road, approximately 2 miles to the northwest from the project site. The Hinkley Senior Center is located at 35997 Mountain View Road, approximately 4,000 feet to the northwest of the project site. Other scattered residential development is located on various parcels surrounding the site, and more concentrated residential development is located approximately 2 miles to the northwest from the project site. The groundwater extraction and injection system will be a closed system and will not produce odors or pollutant concentrations beyond the project site.</p> <p>Mitigation Measures: None Required.</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"/>
<p>Significance: Less Than Significant.</p> <p>(e) There may be some minor and temporary odors associated with the injection of biological reagents. In addition, the injection of reagents has the potential to generate small amounts of hydrogen sulfide and methane gas. The presence of any hydrogen sulfide and methane gas generated from the <i>in-situ</i> remediation will be limited to immediate area (within a few feet) of the reagent delivery wellheads, during injection events when the wellheads are open. The project is located approximately 600 feet to the east of the nearest residence. The rural location of the remediation site and the distance to the nearest residences will prevent these potential conditions from affecting a substantial number of people.</p> <p>Mitigation Measures: <i>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.</i></p>				
<p>IV. BIOLOGICAL RESOURCES</p>				
<p>Would the project:</p>				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less Than Significant</p>				
<p>(a) The proposed <i>in-situ</i> treatment system will be located primarily subsurface; there is low potential for</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>exposure of native wildlife in the project vicinity to groundwater containing hexavalent chromium [Cr(VI)] or the amendments to be injected for chromium reduction or from potential by products.</p> <p>All drilling locations will be screened by PGE biologists, and avoidance measures employed as needed such as temporary fencing around drilling locations. This biological monitoring will be an effective avoidance measure for reducing any potential effects to special status species.</p> <p>Initial analyses of potential biological resources in the region using California Natural Diversity Database (CNDDDB) indicated the potential presence of the desert tortoise (<i>Gopherus agassizii</i>). However, the project site does not fall within the United States Fish and Wildlife Service (USFWS) critical habitat designation for the desert tortoise. The Superior-Cronese Desert Tortoise Critical Habitat Unit is located approximately 3 miles northeast of the project site, encompassing areas northeast of Hinkley to Cronese Valley (55 FR 12178-12191).</p> <p>There are no CNDDDB records related to the Mohave ground squirrel (<i>Spermophilus mohavensis</i>) or the Mohave Tui chub (<i>Gila bicolor</i>) within the project vicinity. However, there have been past sightings of the Mohave ground squirrel by PG&E personnel. No other federal or state listed terrestrial species are documented at, or in the vicinity of, the project site.</p> <p>The CNDDDB also indicated the potential presence of three special-status avian species listed as State species of special concern by California Department of Fish and Game: ferruginous hawk (<i>Buteo regalis</i>); loggerhead shrike (<i>Lanius ludovicianus</i>); and prairie falcon (<i>Falco mexicanus</i>). The project site may have marginal foraging habitat for these three special-status species.</p> <p>Environmental set-aside already exists for portions of the Compressor Station on PGE land located about 1.5 miles to the west (APN 48807403). In addition, a field reconnaissance survey and literature review for lands north of the project site was conducted in March 2005 by PG&E and Dr. Phil Leitner (Appendix B). The physical characteristics of the site include extensive cultivation, remnant crops, and presence of exotic vegetation. Due to land disturbances and lack of natural habitat, the site does not provide appropriate conditions for establishment of special-status plant species, nor is the site considered suitable habitat for the desert tortoise. However, this particular site does include marginal habitat to support Mohave ground squirrel. Dr. Leitner, an expert in Mohave ground squirrel ecology, reported that this area has a low potential to support this special-status species.</p> <p>During previous reconnaissance field surveys conducted on PG&E lands about 2 miles to the north that were completed in August 2002 and October 2003 by CH2M HILL, no federal or state special-status plant or wildlife species were detected (Appendices C and D). The survey areas include the Desert View Dairy and the Ranch Land Treatment Area. The physical characteristics of these two sites include disturbed habitats dominated by non-native vegetation including tilled soils, extensive cultivation, and remnant crops. Due to land disturbances and lack of natural habitat, these two sites do not provide appropriate conditions for establishment of special-status plant species, nor are they considered suitable habitat for the desert tortoise, Mohave ground squirrel, or Mohave Tui chub.</p> <p>Based on past survey results from the surrounding areas, project implementation is not anticipated to affect any sensitive plant or wildlife species. However, future biological surveys will be conducted prior to ground disturbances for piping or wells. The following avoidance measure will be implemented</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>during construction and operation of the project:</p> <ul style="list-style-type: none"> • 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 will be implemented for the desert tortoise. • Temporary or permanent fencing will be used for areas that have active burrows. • 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. • 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. • The project area is primarily an active industrial facility. There is a potential that private lands to the east and west of the facility will be used in the future, based on results of Phase 1 onsite activities. Prior to construction activities, the project site will be surveyed by a biologist to identify the best locations for the <i>in-situ</i> project facilities. 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. <p>Mitigation Measures: Prior to commencement of construction activities, the avoidance measures described above will be implemented to ensure no impacts result.</p>				
<p>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</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
California Department of Fish and Game or US Fish and Wildlife Service?				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>(b)/(c) The project area does not support features classified as waters of the United States, including wetlands. Potential impacts to either the United States Army Corps of Engineers jurisdictional areas or the California Department of Fish and Game jurisdictional areas are not expected to occur from the proposed project.</p> <p>Mitigation Measures: None Required.</p>				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>(d) 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.</p> <p>Mitigation Measures: None Required.</p>				
<p>e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>(e)/(f) 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 <i>Dalea spinosa</i> (smoke trees), mature individuals of the genus <i>Prosopis</i> (mesquite trees), all species of the family <i>Agavaceae</i> (century plants, nolin, yuccas), creosote bush (<i>Larrea tridentata</i>) rings (10 feet or greater in diameter), and all Joshua trees (<i>Yucca brevifolia</i>). These species do not exist within the project site.</p> <p>The <i>in-situ</i> 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, construction activities will be located in previously-disturbed sites. 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.</p> <p>The project site is within the United States Department of the Interior Bureau of Land Management 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.</p> <p>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 Bureau of Land Management and its effects on the desert tortoise and its critical habitat. The biological opinion covers lands within the project site and ½ mile of pipeline maintenance activities; therefore, the measures identified within this document are strictly followed.</p> <p>Mitigation Measures: None Required.</p>				
<p>V. CULTURAL RESOURCES</p>				
<p>Would the project:</p>				
<p>a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>d) Disturb any human remains, including those interred outside of formal</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
cemeteries?				
<p>Significance: No Impact.</p> <p>(a)-(d) The project site is located primarily on PG&E's compressor station property south of Community Road between Fairview Road and Summerset Road, with some project activities potentially occurring on two adjacent parcels (APN #'s 048811256 and 048811258). The site is generally highly disturbed, and minimal additional ground disturbance will be required for project implementation. In addition to the compressor station, several industrial ponds and an abandoned recreational area, including a swimming pool, are located on site.</p> <p>A cultural resources survey completed by Albion Environmental, Inc. in June 2005 (Albion Environmental, Inc., <i>Cultural Resources Survey of Six Parcels, Hinkley, California</i>, June, 2005) included the areas immediately north of Frontier Road and east of Fairview Road (see Appendix A). While the project site was not surveyed for the purposes of the April 2005 study, the site is mapped, and the report does indicate the location of a previously-recorded historic site (SBR-6767H) at the southwest corner of the property. This historic scatter site is located on the opposite side of the property to where the proposed project would be implemented. No other previously-recorded sites are located on the property. Nor are any recorded unique paleontological or geologic features located onsite.</p> <p>No siting of Native American artifacts or evidence of human remains has been recorded by locals at the project site.</p> <p>As a precaution, if any paleontological resource or human remains are identified during extraction wells development or conveyance piping trenching, then construction activities would be halted and a qualified archeologist would be consulted.</p> <p>Mitigation Measures: None Required.</p>				

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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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: No Impact.</p> <p>(a)-(e) 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 400 feet west of the site. No known faults traverse the project site. The project does not include plans to build any structures on site, nor would the project require grading such that risks associated with unstable soils (i.e., expansive soils, liquefaction, landslides, lateral spreading, or subsidence) would be created.</p> <p>PG&E has a detailed emergency preparedness plan for the Compressor Station that describes the specific procedures to be followed in the event of earthquake-induced damage.</p> <p>The project would not result in erosion onsite. The project does not include installation of septic tanks or alternative wastewater disposal systems.</p> <p>Groundwater conveyance lines will be buried and constructed of double-contained pipe. Any spillage of groundwater outside of the primary conveyance pipe will be detected by leak detection sensors placed within the secondary containment pipe and well vaults, which will trigger the system to shut off.</p> <p>Mitigation Measures:</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
None Required.				

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 checked="" type="checkbox"/>	<input 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"/>
Significance: Less Than Significant Impact				
<p>(a)/(b) Groundwater under the project site is being remediated to reduce chromium levels. In the core of the plume, total chromium [Cr(T)] concentrations exceed the maximum contaminant level (MCL) of 50 micrograms per liter (µg/L), a portion of the plume surrounding the core has a Cr(T) concentration below 50 µg/L. The MCL is the water quality objective set by the Water Board for groundwater used as a drinking water source. When extracted, chromium-containing groundwater greater than the interim plume delineation levels is considered by the Water Board to be a liquid designated waste under Section 20210 of Title 27 of the California Code of Regulations (CCR). None of the groundwater at Hinkley exceeds hazardous waste criteria of CCR Title 22 Section 66261.24(a)(1)(B) of 5 parts per million. The closed recirculation system associated with <i>in-situ</i> groundwater treatment does not create a hazard to the public because it is a closed system with little chance for public access to or contact with the water.</p> <p><i>In-situ</i> treatment technology entails injection of a food-grade biological reagent into groundwater to promote naturally-occurring microorganism growth in the aquifer that results in reduced Cr(VI) in the groundwater. It is anticipated that the reagents used would be either sodium-lactate, whey, ethanol, or an emulsified vegetable oil (EVO). Because the biological reagents to be injected into the groundwater are food-grade materials, they would naturally biodegrade to water, carbon dioxide, and microbial mass.</p> <p>The only materials stored onsite for this project are the biological food-grade reagents listed above. Small quantities of fuel or other materials (e.g., pipe glue, spray paint) may be on stored onsite temporarily to be used during project construction.</p> <p>Project operations should not result in potential hazards to the public or the environment due to the addition of <i>in-situ</i> groundwater treatment biological reagents. Following injection of the reagents, natural microbial processes would create anaerobic groundwater conditions causing the Cr(VI) to reduce to trivalent chromium [Cr(III)]. As a result of anaerobic groundwater conditions, temporary mobilization of other metals (arsenic, manganese, and iron) may also occur. This mobilization should be temporary, and any mobilized metals should precipitate once the reagents have been depleted and/or the metals are exposed to background aerobic groundwater conditions. Prevailing groundwater geochemical conditions would return to pre-treatment conditions following completion of the project.</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>No hazards to the environment or to the public are expected to occur from project implementation.</p> <p>Mitigation Measures: The following best management practices will be put in place to prevent hazards to the public and environment (e.g., releases of hazardous materials or untreated groundwater):</p> <ul style="list-style-type: none"> • Although the reagents are food-grade, they will be included in the Hazardous Materials Business Plan applicable to the project. • Addition of reagent to the groundwater will be conducted either using chemical metering pumps designed to add very small doses or will be injected directly into the aquifer in larger quantities under the oversight of field personnel. • A treatment system operations manual will be maintained at the site. System operators will be trained regarding system operation, maintenance, and emergency procedures. • System operators will maintain a log of all operations, injections, and problems that may occur. • Extraction well pumps and plant operations will shut down in the event of a process failure and/or mechanical damage. • Small quantities of fuel or other materials (e.g., pipe glue, spray paint) that are temporarily stored onsite during project construction will be handled and stored in a manner that prevents unintended releases. All spills will be recorded in the daily log. <p>Further, all workers would be required to abide by the <i>Hinkley Field Work Health and Safety Plan</i> to prevent and minimize exposure to groundwater containing Cr(VI). Personal protective equipment, consisting of a modified Level D, will be worn during construction work and drilling activities for installation of wells. The San Bernardino County Division issuing the drilling and trenching permit would ensure that personnel are abiding by the Health and Safety Plan. Accidental spills of chromium-containing groundwater having concentrations of equal to or greater than 50 micrograms per liter will be recorded in the field log and reported to the Water Board and San Bernardino County within one working day.</p>				
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"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
<p>Significance: No Impact.</p> <p>(c) The project site is not located within 0.25 mile of an existing or proposed school. The nearest school is Hinkley Elementary/Middle School, located approximately 2 miles west of the Ranch LTU (37600 Hinkley Road).</p> <p>(d) The project site is not listed on the state's list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.</p> <p>(e),(f) The project site is not located within an airport land-use plan or is within 2 miles of a public airport. The site does not fall within an existing airport land-use plan and is not within 2 miles of a public or private airport.</p> <p>(g) Project implementation will not impair or physically interfere with an adopted emergency response or emergency evacuation plans for the project site and vicinity. The Hazardous Materials Business Plan that will be developed for the project will address evacuation routes for site personnel in the case of a release</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>of hazardous materials, fire, etc.</p> <p>(h) The project site contains no wildlands and is surrounded by fallow agricultural fields and/or irrigated farmland. There is no potential for impacts related to wildland fires.</p> <p>Mitigation Measures: None Required.</p>				

VIII. HYDROLOGY AND WATER QUALITY

Would the project:

- a) Violate any water quality standards or waste discharge requirements?

Significance: Less than Significant Impact.

The proposed project is designed to be compatible with the Water Board's *Water Quality Control Plan for the Lahontan Region* (Basin Plan). Specifically, the project will be consistent with Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. Resolution 68-16 states that existing high quality waters will be maintained unless it can be demonstrated that any change is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses and will not result 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 materials that will temporarily degrade water quality in a limited area. The temporary degradation from the injected materials will result in the ultimate restoration of the groundwater to meet water quality standards. Therefore, the project meets the requirements of Resolution No. 68-16 in that the temporary change in water quality will ultimately restore the beneficial uses of the water that are currently not met, adverse effects will be limited in areal extent and duration and will ultimately restore the beneficial uses that are currently not being achieved due to the chromium contamination, and will restore water quality to that prescribed in the policies.

The groundwater to be treated contains Cr(T) at concentrations above the California MCL of 50 µg/L (0.05 milligrams per liter [mg/L]). Most of the Cr(T) present is in the form of Cr(VI). The objective of the project 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 reagents will result in temporary adverse changes in water quality in an anticipated limited area with a net improvement in water quality with respect to the constituents of concern (i.e., Cr(VI) and Cr(T)).

Biological Reagents

Biological reagents will be injected during the project to stimulate naturally-occurring microbes to consume oxygen in groundwater, creating an anaerobic environment for reducing Cr(VI). Temporary degradation to water quality will contain increases in volatile fatty acids and total organic carbon and decreases in total dissolved oxygen. Bioremediation end-products are carbon dioxide, water, and carbon as microbial biomass.

Total Substrate Volume for Full Expansion Over a Five-year Operations Period - The estimated

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>performance period for the full expansion of the project is at least 5 years. The maximum volume of each biological substrate to be injected at the site is 50,000 gallons of lactate, 120,000 pounds of powder whey, 300,000 gallons of fresh liquid whey, 70,000 gallons of EVO, and/or possible 15,000 gallons of ethanol. This volume is based on estimates for Phase 1 multiplied by the number of two phases for full project expansion as presented on Figure 2. The actual volume of substrate injected will likely be less than this estimate, and will be adjusted based on site conditions and monitoring data.</p> <p>Temporary mobilization of metals (arsenic, manganese, and iron) may occur as a result anaerobic groundwater conditions caused by injecting biological reagents into the aquifer. While the duration of mobilization is unknown, mobilized metals are expected to precipitate once the reagents have been depleted and/or the metals are exposed to background aerobic groundwater conditions. And while the distance that byproducts may migrate from the treatment zone is unknown, byproducts should precipitate before reaching receptors, such as domestic and agricultural wells.</p> <p>Mitigation Measures: Violations of the water quality standards or the Waste Discharge Requirements outside the project boundaries may temporarily result from this project. Monitoring and Reporting requirements are extensive and should verify compliance with discharge requirements and mitigation measures. The project proponent will record water quality results and notify the Water Board if violations of water quality standards are detected.</p> <p>Contingency Plan The contingency plan includes a monitoring plan and mitigation measures to be performed if threshold concentrations of remediation byproducts (unutilized injected substrates and mobilized reduced metals) are exceeded at designated sentry monitoring wells within the project recovery zone, located south of Community Boulevard. Mitigation measures (described below and on Attachment A) will be initiated to prevent remediation byproducts above the threshold concentrations from migrating beyond the recovery zone, and to protect the water quality at nearby private wells. The nearest private well (02-02A) within the potential influence of the project is located approximately 600 feet cross-gradient of the injection/extraction wells. The locations of private wells (01-02, 02-02A, and 35-05) are shown on Figure 1 of Appendix A.</p> <p>A proposed contingency plan describes measures to monitor remediation byproducts within and outside of the project area. Mitigation measures will be performed if threshold concentrations of these constituents are exceeded at designated sentry monitoring wells located south of Community Boulevard. Mitigation measures will be initiated to prevent remediation byproducts above the threshold concentrations from migrating beyond the recovery zone, and to protect the water quality at nearby private wells.</p> <p>The planned overall mechanism for mitigating remediation byproducts will be natural attenuation because it is known that such constituents are transient in nature (injected substrates will ultimately be consumed by microorganisms, and reduced metals (particularly iron and manganese) will re-oxidize once they encounter oxidized groundwater). If natural attenuation processes are not effective enough, reagent injection will be scaled back or shut off. If groundwater monitoring indicates that remediation byproducts are not attenuating within the project boundaries, active remediation measures, such as air sparging or groundwater extraction, will be initiated to prevent migration to the contingency zone. Byproducts detected above threshold concentrations in the contingency zone, will be in violation of the</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
waste discharge requirements and will trigger aggressive implementation of active remedial measures within a strict timeframe.				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>All water extracted by the <i>in-situ</i> source area remediation system will be reinjected into the aquifer. No net removal of groundwater will occur. A benefit of using <i>in-situ</i> groundwater treatment is that <i>in-situ</i> treatment does not reduce the quantity of water resources in the area and, therefore, promotes wise management of water resources. Groundwater modeling indicates that up to three feet of mounding will occur in the injection well area at the compressor station. And at least one foot of groundwater drawdown will occur in the extraction well area and north of Community Boulevard. Modeling does not show drawdown affecting nearby domestic wells. 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 completion of this work.</p> <p>Mitigation Measures: None Required.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</p>				
<p>Significance: No Impact.</p> <p>The <i>in-situ</i> source area remediation 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.</p> <p>Mitigation Measures: None Required.</p>				
<p>f) Otherwise substantially degrade water quality?</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less than Significant Impact with Mitigation Incorporated.</p> <p>The <i>in-situ</i> source area remediation project will reduce the oxidation-reduction potential of groundwater in the project area for a period of time, but will be restored through natural attenuation processes. As a result of this temporary adverse effect, the injection of biological reagents into the groundwater will promote the reduction of Cr(VI) to Cr(III), a form of chromium that will precipitate out of the groundwater and become bound in the subsurface soils. This process will improve overall water quality.</p> <p>The nearest private well within the potential influence of the Project treatment cell (Well 02-02A) is located approximately 1,000 feet west and cross-gradient of the reagent delivery well gallery. Another private well (Well 01-02) is located approximately 500 feet southeast and upgradient of the reagent delivery well gallery. Both private wells are domestic supply wells. The locations of these wells are shown on Figure 1 of the attached Project Description (Appendix A). The distance between these wells and the Project should minimize any potential for remediation byproducts to affect water quality at these wells. There are no active private wells within 2,500 feet downgradient of the Project.</p> <p>Reagent Injection Biological reagents will be injected into the aquifer through reagent delivery and injection wells. The area of groundwater affected will be limited to:</p> <ul style="list-style-type: none"> • The treatment zone (the zone of high microbial activity and Cr(VI)-reducing conditions within tens of feet downgradient of reagent injection points), located between injection and extraction wells; and • The recovery zone (where groundwater geochemical conditions recover to background levels), which is monitored several hundred feet downgradient of the treatment zone and south of Community Boulevard. <p>Based on bench-scale tests and pilot tests on the PG&E facility, it is expected that microbes will consume the reagents as a food source and multiply in population. As a result, the microbes will consume the dissolved oxygen in the groundwater and create an anaerobic or reductive condition. Once the reagent has been consumed, the microbe population will decrease, leaving microbial biomass</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>(organic matter), carbon dioxide, water, and possibly small amounts of methane and hydrogen sulfide gas. However, based on pilot test results, the quantity and nature of these compounds are not expected to adversely impact groundwater.</p> <p>Besides chromium, the project has the potential to chemically reduce certain metals contained in soil to a lower oxidation state, such as iron, manganese and arsenic. These reduced metals may become more mobile in the subsurface and dissolve into groundwater. This mobilization of metals should be temporary because the metals should precipitate out of the groundwater once the metals are exposed to aerobic groundwater conditions outside the treatment zone. The area of groundwater that may be affected with remediation byproducts should be limited to the treatment zone and recovery zone and will be verified through the Monitoring and Reporting Program.</p> <p>Because no surface water bodies are located in the vicinity of the project, no impacts to surface water quality will occur.</p> <p>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.</p>				
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 result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>The nearest surface water body to the project site is the Mojave 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.</p> <p>Mitigation Measures:</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
None Required.				

IX. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance: No Impact.

(a)/(b)The nearest community to the project site is within the town of Hinkley, which is primarily comprised of scattered residential, agricultural, and former agricultural uses. The site is located at the southeastern edge of Hinkley. The nearest residence is located approximately 1,500 feet to the east of the project site location. Implementation of the proposed project would not divide an established community.

The General Plan land-use and zoning designation for the project site and surrounding area is RL-5 (Rural Living 5-acre minimum). The current land use in the project area is industrial. Some of the area is vacant and scattered with non-native vegetation. Land uses adjacent to the site consist of fallow farmland and livestock cultivation. A number of monitoring and extraction wells are located onsite and on adjacent properties in the area.

The proposed *in-situ* treatment is primarily underground and would not be visible to the public. Limited surface facilities would be required for project implementation. Project-related activities, including installation of wells and operation of the *in-situ* system, would not affect the existing land uses, nor would it conflict with any future land use developed consistent with the existing General Plan and zoning for the site. The project would not require a Conditional Use Permit. For these reasons, no conflict with the San Bernardino County General Plan or zoning ordinances would result from implementation of the project.

(c) The project site does not fall within an adopted habitat conservation plan or natural community conservation plan. The proposed West Mojave Plan, under preparation by the Bureau of Land Management and local state agencies, would apply to the project if adopted. However, as no changes in

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>land use onsite or activities that would impact adjacent land uses are proposed, project implementation would not conflict with this plan.</p> <p>Mitigation Measures: None Required.</p>				

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Significance: No Impact.

The project site is located within an area designated by the County General Plan as Mineral Resource Zone 4 (MRZ 4). MRZ-4 is defined by the General Plan as an area where available information is inadequate for assignment to any other MRZ. The General Plan policies associated with this designation relate to the permitting, mining, and processing of mineral resources and are not applicable to the proposed project.

No mineral resource extraction would occur as part of the proposed project, and 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) A substantial permanent increase in ambient noise levels in the project vicinity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
above levels existing without the project?				
<p>Significance: No Impact</p> <p>The County of San Bernardino’s General Plan Noise Element standard for residential land use are a community noise equivalent level of 60 decibels (dBA) and an equivalent steady-state sound level [L_{eq}(h)] of 55 dBA between 7:00 a.m. and 10:00 p.m. and 45 dBA between 10:00 p.m. and 7:00 a.m.</p> <p>(a)-(c) Audible noise levels during project operations will be limited to the immediate vicinity of the reagent injection and groundwater recirculation activities. The minimal noise generated by the electric pumps reagent delivery equipment will be attenuated by the distance to the nearest receptor. The nearest residence is located approximately 1,500 feet to the east of the proposed source area <i>in-situ</i> project. No permanent noise-producing generators will be required. Therefore, no impacts are anticipated.</p> <p>Mitigation Measures: None Required.</p>				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less than Significant.</p> <p>Project construction activities (drill rig, trenching equipment) would temporarily increase noise levels at the project site. However, construction noise will be short term and will be 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 1,500 feet east of the proposed source area <i>in-situ</i> project location. The nearest sensitive noise receptor is the Hinkley Senior Center located at 35997 Mountain View Road, approximately 4,000 feet west of the proposed project site.</p> <p>Mitigation Measures: <i>The project will be conducted in accordance with the County of San Bernardino’s General Plan Noise Element standard for residential development.</i></p>				
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?	<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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Significance: No Impact.				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>(e)/(f) 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.</p> <p>Mitigation Measures: None Required.</p>				

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>Project implementation does not involve or cause 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.</p> <p>Mitigation Measures: None Required.</p>				

XIII. PUBLIC SERVICES				
<p>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:</p>				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>(a)-(e) Project implementation would not require the expansion of existing emergency services and would not affect current response times.</p> <p>Project operations would involve a range of one or two full-time operators, and no population growth would result from the project. Therefore, no impact to police, schools, parks, or other public facilities is anticipated.</p> <p>Project operations would involve operators in attendance approximately weekly to biweekly for one to two days. The operator would 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 assist. Therefore, no impact to police, schools, parks, or other public facilities is anticipated.</p> <p>Mitigation Measures: None Required.</p>				
<p>XIV. RECREATION</p>				
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>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?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>Significance: No Impact.</p> <p>(a)/(b) 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, nor would project implementation result in the interruption of access to or the elimination of existing facilities.</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less than Significant.</p> <p>(a) 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 traveling to and from the project site 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 weekly to biweekly to perform monitoring, operations, and maintenance activities.</p> <p>Mitigation Measures: During construction, delivery, and drilling activities, project personnel will prevent vehicles from lining up on County roads that could impede through traffic.</p>				
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"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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"/>
<p>Significance: No Impact.</p> <p>(b)-(g) The transportation of construction materials and equipment would occur 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 Community Boulevard.</p> <p>The negligible increase in traffic generated by project operations from an operator visiting the site approximately weekly to biweekly 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.</p> <p>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.</p> <p>Mitigation Measures: None Required.</p>				

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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
entitlements and resources, or are new or expanded entitlements needed?				
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"/>
<p>Significance: No Impact.</p> <p>(a)-(g) Potential impacts associated with the proposed groundwater injection and extraction wells are discussed throughout this initial study, and no significant impacts are anticipated from project implementation.</p> <p>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.</p> <p>During the project construction, workers will use the existing septic facilities at the 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.</p> <p>Mitigation Measures: None Required.</p>				

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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>examples of the major periods of California history or prehistory?</p>				
<p>Significance: Less than Significant Impact</p> <p>No significant habitat would be impacted by the project. Project activities (e.g., well installation) 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 V, the project will not eliminate important examples of major periods of California history or pre-history due to the low level of disturbance.</p> <p>The potential for occurrence of wildlife species in these areas is considered very limited due to the highly disturbed nature of the project site. There are no CNDDDB records related to the Mohave ground squirrel (<i>Spermophilus mohavensis</i>) within the project vicinity. No other federal- or state-listed terrestrial species are documented at, or in the vicinity of the project site. 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:</p> <ul style="list-style-type: none"> • 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 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. • 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 checked periodically 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 project area will be surveyed by a biologist to identify the best locations for <i>in-situ</i> project facilities. 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 and piping locations will be in previously disturbed areas, such as access roads. . <p>Mitigation Measures:</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>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.</p>				
<p>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).</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less than Significant.</p> <p>The project site is surrounded primarily by land designated Rural-Living. Project operations require extraction and re-injection of groundwater from the Mojave Basin with no net removal of water.</p> <p>Construction activities may temporarily contribute to the PM₁₀ air quality issue in the region. Implementation of measures developed by the MDAQMD will ensure that this impact is minimized. In addition, the proponent will conduct all construction activities during normal business hours, thereby ensuring that noise impacts are minimal.</p> <p>The injection of 120,000 pounds of powder whey and 435,000 total gallons of lactate, whey, EVO, and, possibly, ethanol have the potential to degrade water quality if there is no consumption by naturally occurring bacteria in groundwater. The four reagents also have the potential to produce nuisance gases and odor if applied too quickly.</p> <p>The 2005 pilot test at the East Land Treatment Unit and the former unlined pond areas indicate that naturally-occurring microbes would readily consume reagents injected to groundwater and create reducing conditions. The duration that reduced conditions will remain in groundwater is unknown but is expected to not be long term. The fate and transport of mobilized reduced metals produced in the pilot test are unknown and still being monitored. Monitoring activities listed in the Hinkley Sampling and Analysis Plan and required in the Monitoring and Reporting Program for the project will verify whether adverse conditions are created by project implementation. If so, the proponent will be required to implement the Contingency Plan to prevent migration of mobilized metals and impacts to beneficial uses.</p> <p>No adverse cumulative impact to groundwater levels is anticipated.</p> <p>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.</p>				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>Significance: Less Than Significant Impact.</p> <p>This project will have a positive effect by reducing the concentration of Cr(VI) in groundwater with no significant net removal of water. Project implementation is not anticipated to result in overall adverse environmental impacts and should not cause adverse effects to human beings. The final degradation products of the biological reagents would typically be microbial biomass (organic matter), carbon dioxide, water, and possibly low concentrations of methane and hydrogen sulfide under anaerobic conditions. Temporary mobilization of metals (arsenic, manganese, and iron) may occur in a limited area as a result anaerobic groundwater conditions caused by injecting biological substrates into the aquifer. Cr(VI) will be converted to Cr(III), which will primarily precipitate as chromium oxide/hydroxide. Overall, the project will result in significant environmental benefits that are consistent with the Basin Plan and beneficial uses of waters of the State of California.</p> <p>Mitigation Measures: The contingency plan in place will ensure that potential impacts are identified and, if so, effectively mitigated. Therefore, no long-term adverse cumulative impact to water quality or the environment is anticipated.</p>				

Attachment:

A Mitigation Measures

Appendix:

A Project Description

IN-SITU SOURCE AREA REMEDIATION 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 and 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 project are food-grade and do 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 project. 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) at or greater than concentrations of 50 micrograms per liter, all details must 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 sentry monitoring wells, located between extraction wells and Community Boulevard, the applicant will implement the Contingency Plan within 5 days. Contingency Plan implementation shall prevent contaminant migration beyond the project boundaries and restore water quality to levels listed in the waste discharge requirements. Implemented mitigation measures and associated activities must be recorded in the field log.
- In the event that reagents and/or byproducts are detected at trigger concentrations in contingency monitoring wells located beyond the project boundaries, the applicant will notify the Water Board within two working days. Within 14 days of notification, the applicant will submit a proposal to the Water Board for active remediation to prevent further migration beyond contingency wells and to restore water quality. The proposal shall also contain a monitoring plan to expand groundwater monitoring in the contingency zone, downgradient of the area where violations were observed. Active remediation must begin operating

within 90 days of notification. All contingency actions must be recorded in the field log.

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.

APPENDIX A

IN-SITU SOURCE AREA REMEDIATION PROJECT PG&E HINKLEY COMPRESSOR STATION

PROJECT DESCRIPTION

The proposed In-situ Source Area Remediation Project (Project) is located on the Pacific Gas and Electric Company (PG&E) Compressor Station property at 35863 Fairview Road, Hinkley, California (Figures 1 and 2), at the intersection with Community Boulevard. The purpose of this project is to implement full-scale, in-situ remediation for reducing hexavalent chromium in groundwater to trivalent chromium for achieving water quality standards. The project will be built and operated in two phases over at least five years. Implementation will take place in the groundwaters of the Middle Mojave River Valley Ground Water Basin. The project area is approximately 2,400 feet long and 1,400 feet wide. PG&E owns the land on which the compressor station and project are located

The groundwater below the Facility contains chromium from the PG&E compressor station plume and naturally occurring constituents. The most significant constituent is hexavalent chromium [Cr(VI)], a toxic, soluble metal. At the Facility, groundwater quality, based on 2006 data from monitoring wells, has total chromium [Cr(T)] concentration ranging from 136 to 4240 micrograms per liter ($\mu\text{g/L}$) and hexavalent chromium concentration ranging from 135 to 3610 $\mu\text{g/L}$. Chromium has been detected at the water table at 80 feet below ground surface (bgs) and in the saturated zone to 135 feet bgs. Chromium contamination resulted from discharge of untreated cooling tower water to unlined ponds between 1952 and 1964.

The maximum contaminant level (MCL) for a municipal water source for these constituents is 50 $\mu\text{g/L}$ for Cr(T). Therefore, groundwater at the Facility does not presently support the beneficial use of a municipal and domestic supply. There is no standard for hexavalent chromium.

The proposed project includes two major elements: 1) injection of food-grade, biological reagents to ground water and 2) extraction of ground water to spread the reagents downgradient of the injection point. Two reagents, lactate and emulsified vegetable oil (EVO), were selected for the project following a 2005 small-scale pilot test. In addition, whey is being added as a reagent since it has properties that are nearly identical to that of lactate. Following successful pilot testing at the Facility, ethanol will be added to the suite of reagents used for injection. Over a five year period, a maximum volume of the listed reagents will be used: 50,000 gallons of 60% sodium lactate solution, 120,000 pounds of whey powder or 300,000 gallons in whey liquid solution, 70,000 gallons of 100% vegetable oil (soy based), and 15,000 gallons of ethanol.

When injected into the aquifer, naturally-occurring microbes will consume the reagents. The microbes in turn will consume oxygen in groundwater, creating an anaerobic environment. This condition will prompt Cr(VI) to reduce to trivalent

chromium [Cr(III)]. As Cr(VI) is reduced and as Cr(III) precipitates and adheres to soil material, Cr(VI) and total chromium [Cr(T)] will decrease in concentration in groundwater.

At least 80 additional injection, extraction and monitoring wells will be constructed over the entire project area and on adjacent parcels. Operation activities will consist of pumping groundwater from extraction wells, mixing of groundwater and reagents in the mixing tanks, and injection of the mixture into the injection wells. The extraction wells and recirculation wells will spread reagents downgradient of the injection wells, forming a treatment zone or "biobarrier". Reagents will be consumed by microbes as food or will degrade to water, carbon dioxide, and carbon matter within approximately 8 to 30 days. Reducing conditions will convert some or all Cr(VI) to Cr(III). Limited quantities of reagents will be stored on site in vessels during the study period.

The direction of groundwater flow in the project area is not exactly known, according to the final results of the 2005 pilot test, but is believed to flow north and northwest. Thus, groundwater monitoring for remediation byproducts will occur in an extensive grid of monitoring wells to be located in the recovery zone of the project area and in the contingency zone beyond the project boundaries. A Monitoring and Reporting Plan describes sampling procedures and monitoring details to evaluate in-situ reactions in groundwater and results of the project.

The 2005 pilot test results also indicate that reduced conditions remain more than one year following cessation of reagent injection. The fate and transport of remediation byproducts, reduced metals, formed during the pilot test is unknown and still being monitored. Thus, a comprehensive Contingency Plan has been developed for the Source Area project to protect water quality should reagents or mobilized metals (arsenic, iron, and manganese) migrate to sentry or contingency monitoring wells.

The anticipated operation of the project is at least five years. Following completion of the project, the aquifer is expected to return to pre-treatment aerobic and geochemical conditions, with the exception of trivalent chromium, which is expected to stay in a solid and immobile form in the pore space of the aquifer materials. Estimated cleanup time for the Source Area is about 6 to 10 years, including verification monitoring following cessation of injection wells. Post-project monitoring will verify restoration of water quality and protection to beneficial uses.