CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

RESOLUTION NO. R6V-2004-0040
WDID NO. 6B369701001

CERTIFYING A MITIGATED NEGATIVE DECLARATION FOR PACIFIC GAS & ELECTRIC COMPANY'S IN-SITU REMEDIATION PILOT TEST PROJECT, HINKLEY

San Bernardino County

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

1. It is the responsibility of the Regional Board to regulate the activities and factors that affect the quality of waters of the region, in order to achieve the highest quality of waters of the region consistent with maximum benefit to the people of the state.

2. The Pacific Gas and Electric Company (PG&E) owns the PG&E Compressor Station located at 35863 Fairview Road in Hinkley, California (site). The facility is used to transport natural gas along pipelines to further destinations. The Discharger also owns approximately 30 acres of land north of the facility, called the East Land Treatment Unit (LTU).

3. Soil and groundwater beneath the compressor station is contaminated with hexavalent chromium from untreated cooling tower water discharged under permit to unlined ponds from 1952 to 1964. This contamination has created a plume of chromium in groundwater extending beneath the East LTU and out to distances about 1-1/2 miles northward. Detectable chromium concentrations in the plume exceed the California Maximum Contaminant Level for total chromium in drinking water of 50 micrograms per liter.

4. The site is subject to various Lahontan Regional Water Quality Control Board orders, including the latest cleanup and abatement order, CAO 6-01-50. The Discharger is required to conduct cleanup activities on the site and along the plume length in a manner that does not create or threaten to create a nuisance condition.

5. 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, which could affect the quality of waters of the State, shall file a report of waste discharge (RWD) with the Regional Water Quality Control Board exercising jurisdiction in the area, and that Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes.

6. PG&E (hereinafter Discharger) conducted a laboratory bench-scale pilot study 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 CH2M Hill. 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 has selected two biological reductants, lactate and emulsified vegetable oil (EVO) for use in a field-scale pilot test.

7. PG&E has filed a RWD and applied for Waste Discharge Requirements to implement a field-scale pilot test for evaluating a strategy for long-term groundwater remediation. The pilot test will inject a solution of food-grade reagents (lactate and EVO) into the groundwater for about six months. The injections will stimulate naturally-occurring microbes into creating a reducing environment by consuming oxygen in groundwater. The reducing atmosphere will convert hexavalent chromium to essentially immobile trivalent chromium that adheres to soil matrix. Groundwater quality monitoring will be used to evaluate the affects of the bioremediation process within the treatment area. The project also includes a tracer test that involves up to two injections of potassium bromide and distilled water in each test cell to monitor groundwater flow conditions.

8. Under the RWD described in paragraph three (7) above, in order to partially comply with the enforcement orders described in paragraph six (4) above, the Discharger proposes to conduct a pilot test to evaluate in-situ remediation technology at the site. Field-scale pilot testing will be implemented at two test cells encompassing a combined area of one acre. Information gained from the project will be used to design a full-scale remediation project, which in turn will be designed to achieve groundwater cleanup goals.

9. The direction of groundwater flow is to the north-northeast in the proposed pilot test area. Groundwater quality within the pilot test areas will be monitored through a Monitoring and Reporting Program Order No. R6S-2004-PROPOSED. In addition, groundwater quality across the site and off-site areas will continue to be monitored by a comprehensive groundwater monitoring well network on a bi-monthly and semi-annual basis, depending on well locations.

10. The Discharger has submitted a Sampling and Analysis Plan to monitor the presence and concentration of injected reagent solutions, potential byproducts, tracer constituents, evaluate flow conditions, and any potential for movement of contaminants outside the remediation area. As specified in the Waste Discharge Requirements and the Mitigated Negative Declaration, the Discharger will initiate a contingency plan, if necessary, should contaminants or the injected solution migrate to the contingency area at trigger concentrations.

11. The injection of a lactate solution, EVO, and potassium bromide in the soil and groundwater are discharges of waste subject to Section 13260 of the CWC. However, with the exception of potassium bromide, these discharges are 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 potentially affecting public health and safety.

12. The 1995 Water Quality Control Plan (Basin Plan) for the Lahontan Region designates the beneficial uses of groundwater as municipal and domestic supply, industrial process supply, agricultural supply, freshwater replenishment, and aquaculture.

13. 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 naturally-occurring metals from soil to groundwater that will be monitored and, if present, remediated. Lactate and EVO will degrade to non-regulated products and should have no long-term affect upon beneficial uses. The discharge is intended, and is anticipated, to produce an improvement to groundwater quality by reducing hexavalent chromium and thereby total chromium. The tracer, potassium bromide, should disperse to levels protective of beneficial uses within the test cell boundaries.

14. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations. The Regional Board staff held a public meeting in Hinkley on June 3, 2004, to present the proposed project and to accept public comments. The Regional Board, in a public meeting on October 13, 2004, heard and considered all comments pertaining to the discharge and to the tentative requirements.

15. The Regional 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.

16. Copies of the Initial Study/Checklist and proposed Mitigated Negative Declaration were transmitted to the State Clearing House, all agencies and interested parties. The draft Mitigated Negative Declaration was properly noticed in area newspapers and copies of these documents were made available at local locations for public review.

17. The Mitigated Negative Declaration identifies potential impacts on soils, air quality, and water quality. PG&E will incorporate mitigation measures into the project to mitigate the potential effects on soils, air and water quality to less than significant levels.

18. The Regional Board has reviewed the Initial Study/Checklist and Mitigated Negative Declaration concerning this Resolution prepared by staff, in compliance with the California

Environmental Quality Act (Public Resources Code Section 21000 et seq.). The Regional Board concurs with the staff findings that a Negative Declaration should be adopted.

19. The Regional Board considered all testimony and evidence at a public hearing held on October 13, 2004, at Lancaster, California, and good cause was found to approve the Initial Study/Checklist and proposed Mitigated Negative Declaration. The Regional Board finds that there is no substantive evidence in the record that the certification of the Mitigated Negative Declaration for the In-situ Remediation Pilot Test Project, as mitigated, will have any adverse environmental impacts resulting from the proposed discharge.

THEREFORE, BE IT RESOLVED:

1. The draft 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 Regional Board finds, on the basis of the initial study, Mitigated Negative Declaration, comments received and responses thereto that there is no substantial evidence that the project will have a significant effect on the environment.

3. The Mitigated Negative Declaration is hereby certified.

4. The Regional Board hereby adopts a Mitigation Monitoring and Reporting Plan pursuant to Section 21081.6 of the California Public Resources Code and as contained in Attachment ‘A’ that will ensure compliance with mandatory mitigation measures during construction and the life of the project.

5. The Regional Board directs the Executive Officer to file a Notice of Determination with the State Clearinghouse within 30 days of certification, in accordance with Section 15075 of the State CEQA Guidelines.

6. The Regional Board directs that a copy of this Resolution shall be forwarded to the State Water Resources Control Board and all interested parties.

7. The Regional Board directs that the discharges of solutions of lactate and EVO, and potassium bromide into soil and groundwater shall conform with all requirements, conditions, and provisions set forth in A. Discharge Prohibitions and B. “Discharge Specifications” of the Order No. R6S-2004-PROPOSED. Groundwater and air monitoring shall conform to Monitoring and Reporting Program No. R6S-2004-PROPOSED.

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 October 13, 2004.

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HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Mitigation Measures
B. Mitigation Monitoring and Reporting Plan

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ATTACHMENT A

IN-SITU REMEDIATION PILOT TEST 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 constriction activities.

- During construction activities, the applicant shall comply with all applicable rules and requirements of the Mojave Desert Air Quality Management District (MDAQMD), including Rule 403.2 to mitigate the impact of dust and PM10 emission.

Hazards and Hazardous Material – Less Than Significant with Mitigation Incorporation.

- No hazardous materials are involved in the Project. The biological reagents to be used in the pilot test are food-grade and do not require special transportation, handling, or storage. The tracer, potassium bromide, is a salt and also does not require special transportation, handling or storage.

- There is potential for workers to be exposed to groundwater containing hexavalent chromium (Cr(VI)), a toxic chemical, from equipment failure during drilling activities, well development, and the recirculation system during the pilot test. All workers will abide by the "Hinkley Field Work Health and Safety Plan" to prevent and minimize exposure to groundwater containing Cr(VI). All workers shall wear personal protective equipment consisting of a modified Level D for normal field activities. Additional protective equipment will be worn during drilling activities for installation of wells according to that specific health and safety plan. In the event of a release of groundwater containing Cr(VI), all details shall be recorded in the field log and reported to the Regional Board within one working day.

- 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 apart 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.

Hydrology and Water Quality – Less Than Significant with Mitigation Incorporation.

- The proposed project has the beneficial effect of reducing Cr(VI) in the ground water to trivalent chromium Cr(III) that will precipitate out onto soil matrix and become essentially immobile. This action will result in an overall reduction of total chromium in groundwater in the test cell areas.

- 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.

- Project implementation will include monitoring ground water 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. In the event that reduced metals, other than chromium, are detected at trigger concentrations in groundwater, the applicant will implement the Contingency Plan to prevent migration away from the test cells and to restore water quality to background levels.

- In the event that reagents and/or the tracer are detected at trigger concentrations near the test cells boundaries, the applicant will implement the Contingency Plan for capturing groundwater and restoring water quality to levels listed in the waste discharge requirements.

ATTACHMENT B

Mitigation Monitoring and Reporting Plan

Mitigation Measure	Monitoring	Reporting
Air Quality		
1. Comply with all applicable requirements of the MDAQMD.	• The on-site construction manager is responsible to ensure daily logs reflect monitoring compliance with MDAQMD requirements. • Information regarding construction activity shall be recorded in a permanent log book, such as start and end of construction each day and any unusual condition that may have occurred.	Report all violations of MDAQMD rules and requirements to that agency within **one working day**. A summary of the Daily Logs will be submitted to the Regional Board in the quarterly reports as required in the MRP until construction is complete.
Hazards and Hazardous Materials		
2. No hazardous chemicals will be stored onsite.	• The on-site construction manager is responsible for ensuring compliance and that daily logs record all materials and non-hazardous chemicals stored onsite.	A summary of the Daily Logs will be submitted to the Regional Board in the quarterly reports as required in the MRP until construction is complete. This summary will include a Certification that no hazardous chemicals were stored onsite.
3. Identify and abate spills of groundwater containing Cr(VI).	• Provide pertinent information about the spill, such as the cause, duration, volume, average Cr(VI) concentration, area impacted, and how it was stopped.	Report spills to the Regional Board and the County Health Department within **one working day**. Submit a letter report to both agencies **within seven days** describing details of the spill. List repairs that were made and any samples that were collected. Provide a map showing the spill location. Propose corrective actions to mitigate the spill.
4. Scale back or halt reagent injections if air monitoring indicates nuisance conditions.	• Air monitoring shall be conducted according to the Sampling and Analysis Plan to determine if potential nuisance conditions are present from reagent injections. The field log shall contain air sampling and monitoring data for evaluating potential gases, such as methane and hydrogen sulfide, and record mitigation actions taken, if applicable.	A summary of the Daily Logs will be submitted to the Regional Board in the quarterly reports as required in the MRP during project implementation.
Hydrology and Water Quality		
5. Tracer and reagents injected to groundwater.	• Daily logs shall record the chemicals or compounds injected, concentration, volume, duration, and relevant field parameters measured.	As required by the MRP.
6. Extracted groundwater relative to the recirculation system.	• Record volume of water extracted as gallons per minute, extraction location(s), and extraction duration.	As required by the MRP.
7. Extracted groundwater relative to implementation of the Contingency Plan.	• Measured field parameters and laboratory results that prompt implementation of the Contingency Plan. Record volume of water extracted, location, and duration.	As required by the MRP.

Environmental Checklist
PG&E In-situ Remediation Pilot Test Project

1. Project title:

   In-situ Remediation Pilot Test Project, Hinkley, San Bernardino County, California

2. Lead agency name and address:
   California Regional Water Quality Control Board, Lahontan Region (LRWQCB)
   2501 Lake Tahoe Boulevard, South Lake Tahoe, El Dorado County, California 96150

3. Contact person and phone number:

   Lisa Dernbach, Senior Engineering Geologist
   Telephone: (530) 542-5424

4. **Project location:**
   PG&E Compressor Station, 35863 Fairview Road, Hinkley, San Bernardino County, California 92347

5. Project sponsor's name and address:
   Pacific Gas and Electric Company, Environmental Support and Services,
   375 North Wiget Lane, Suite 200, Walnut Creek, California 94598-2412
   Contact: Darrell Klingman (415) 973-0902

6. General plan designation:

   Barstow Sub-regional Planning Area – 32, Rural Living

7. Zoning**:**

   RL-AP (Rural Living - Agricultural Preserve)

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

   The Pacific Gas and Electric Company (PG&E) is proposing to implement a field-scale pilot test (Project) to evaluate in-situ (in-place) remediation technology in soil and groundwater that are contaminated with hexavalent chromium (Cr(VI)). The proponent will use information gained from the Project to design a long-term, full-scale remediation project, which in turn will be designed to achieve groundwater cleanup goals.

   During late-2003 to March 2004, the proponent conducted bench-scale testing in the laboratory to evaluate favorable reagents for the Project. Lactate and emulsified vegetable oil (EVO), were selected for the field-scale pilot study based upon consideration of safety, handling, material properties, delivery and mixing in the aquifer, permitting, and cost.

   The field-scale project will be implemented under site-specific conditions on property owned by PG&E. Reagent injections will take place in the groundwater of the Middle Mojave River Valley Ground Water Basin. The pilot test, to last approximately six months, will use naturally-occurring microbes in the groundwater to treat chromium in place. The proponent will inject food-grade reagents to groundwater to be consumed by the microbes. The stimulated microbes will also consume oxygen in groundwater,

turning the aquifer into an anaerobic environment. This creates reducing conditions that will convert Cr(VI) to trivalent [Cr(III)]. As Cr(III) precipitates and adheres to soil matrix, Cr(VI) (and therefore total chromium Cr(T)) will decrease in concentration in groundwater. This project will determine the number of injections and aerial extent affected by injections needed to reduce Cr(T) concentrations to meet water quality goals.

The project also includes a tracer test using a potassium bromide solution to monitor groundwater flow rates before (and possibly during) the pilot test at each of the two test cells.

Chromium Discharge

The PG&E Compressor Station in Hinkley began operating in 1952. From approximately 1952 to 1965, a Cr(VI)-based corrosion inhibitor was added to the cooling water prior to its use in cooling towers. From 1952 to 1964, untreated cooling tower water from the facility was discharged to unlined ponds. Discharged cooling water percolated to groundwater, approximately 80 feet below. Groundwater beneath the ponds and downgradient of the compressor station exceed the California Maximum Contaminant Level for Cr(VI) of 50 micrograms per liter for drinking water. The unlined ponds have since been closed, covered, and replaced by lined evaporation ponds.

Construction Activities

Construction of the project will include the installation of 17 wells for injection, monitoring, and extraction purposes. Approximately 150 feet of shallow trenching will occur to bury piping between extraction and injection wells and the mixing vessels. The mixing vessels are 1,000-gallon portable tanks. In addition, a temporary equipment trailer will be located at each site and will include 50-feet of trenching for buried electrical conduit. The total disturbed area will be about 6,000 to 7,000 square feet. Existing access roads and disturbed areas will be used as much as possible. The total construction time is expected to last approximately 5 weeks. There will be from 3 to 6 people present during construction activities.

Testing Areas

Both test cells are of similar design, measuring 80 x 40 feet. They consist of an upgradient injection well or wells, and a downgradient extraction well. At least four monitoring wells and several lateral monitoring wells will separate the injection and extraction wells. The two cells will be located approximately 1,000 feet apart, so that there will be no mixing of the two reagents. Lactate will be injected to groundwater near the former unlined ponds, located at the compressor station. EVO will be injected within the East Land Treatment Unit (LTU), 1,000 feet north of the lactate test cell, across Community Boulevard running east and west.

In-situ Remediation Activities

The two pilot studies will take a slightly different approach, due to the nature of the substances used and the way in which each is expected to act in groundwater.

1. *Lactate: The lactate pilot study will use two injection wells and a downgradient extraction well in a "recirculation approach" at the test cell located near the unlined ponds. The sodium lactate solution will be injected in a system where the reagent is mixed with extracted groundwater and injected upgradient. Lactate*

concentration will be targeted at 200 to 250 mg/L in the aquifer for hexavalent chromium reduction. Lactate will be stored on site in a vessel during the study period. It is anticipated that up to 165 gallons of 60% sodium lactate will be injected throughout the duration of the project. Lactate will be consumed as food by microorganisms and degrade to carbon dioxide, water and microbial matter within 8 days.

2. *EVO: EVO is composed of 45% vegetable oil, 45% water, 4% lactate, and 6% food grade emulsifiers (lecithin). The EVO pilot study will use a passive approach for in-situ remediation during the first three months. EVO, which is less soluble and lasts longer than lactate, will be "semi-continuously" injected into the aquifer at the East LTU three times per week. EVO will be consumed as food by microorganisms and degrade to carbon dioxide, water, and microbial matter within 15 days. During the second three months of the pilot study, a recirculation approach will be used to spread EVO in the aquifer by initiated pumping in the downgradient extraction well. The area of influence of EVO in the passive mode will be compared to the area of influence in the recirculation mode. Extracted groundwater will be re-injected upgradient in the injection well. Additional EVO will be added to the injected solution if laboratory analysis detects Cr(VI) concentrations. Over the six-month pilot test duration, it is estimated that 250 gallons of 100% vegetable oil (soy based) will be injected to groundwater.*

Tracer Testing

The field-scale pilot test will also include a tracer test using potassium bromide to monitor groundwater flow rates before and possibly during the pilot test at each of the two test cells. Potassium bromide will be injected to groundwater at an initial concentration of 500 mg/L. The tracer will be diluted to 100 to 150 mg/L in the aquifer by adding distilled water at four times the bromide dose. The proponent will conduct tracer monitoring by using a bromide ion-specific probe and verifying monitoring results by collecting confirmatory water samples for laboratory analysis.

Chromium Reduction

Consumption of biological reagents by microorganisms will create a reducing environment in the saturated zone that will convert Cr(VI) to trivalent chromium [Cr(III)]. As Cr(III) precipitates and adheres to soil matrix, Cr(T) will decrease in concentration in groundwater. The site conditions are favorable towards the reducing reaction due to the slightly alkaline pH and low natural oxidants (manganese oxides) and depth to the water table (approximately 80 feet). Both reagents will degrade to non-regulated products, such as water, carbon dioxide, and carbon as microbial mass.

Operations and Maintenance

The proponent has prepared a Pilot Test Sampling and Analysis Plan for the operation and performance evaluation of the pilot test system. Maintenance will consist of weekly inspections and pump system inspection. Groundwater sampling rounds will be conducted 1) prior to the initial injection, 2) 14 days after the initial injection, and 3) each month until the end of the pilot test at 6 months.

Contingency Plan

The proponent prepared a Contingency Plan should the reagents or reaction byproducts migrate to the test cell boundaries. The Contingency Plan describes triggers that are in place if reagents or byproducts, such as mobilized metals, are detected at or above specific concentrations in outlying monitoring wells. Pumps within the monitoring wells will extract groundwater-containing reagents and/or byproducts, which will be re-injected in upgradient wells to contain migration. If reagent or byproducts continue to be detected in contingency wells, reagent injections may be scaled back or halted altogether.

Project Duration

The anticipated duration of the project is six months. However, the project time may be extended for up to six months more if groundwater movement or reagent reaction is slower than expected. The field-scale results will be presented to the Regional Board in a report following testing conclusion.

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

The local setting is primarily rural and agricultural; the project test areas will be in the area of the evaporation ponds at the compressor station and at the East LTU. The project site is bound by the industrial uses at the PG&E Compressor Station property to the south, Fairview Road to the west, Summerset Road to the east, and an agricultural area to the north. Community Boulevard runs east/west and separates the two test areas to the north and south.

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

San Bernardino County will require a permit for well and piping installation. Also, the County Fire Department requires a hazardous material business plan. The County will not require a Conditional Use Permit for 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.

☐ Aesthetics	☐ Agriculture Resources	☑ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☑ Hazards & Hazardous Materials	☑ Hydrology / Water Quality	☐ Land Use / Planning
☐ Mineral Resources	☐ Noise	☐ Population / Housing
☐ Public Services	☐ Recreation	☐ Transportation /

Traffic

☐ Utilities / Service Systems ☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☑ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____ _____

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 that 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?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑
Significance – *No Impact.* *The project site is not located within, or in the vicinity of, a scenic vista or any designated scenic resources. The visibility of the temporary equipment to the public would be limited due the small nature of the proposed equipment and the remote location of the project site.* **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 (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?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Significance – *No Impact.* *No farmland would be converted to a 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?	☐	☐	☐	☑
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☑	☐
Significance – *Less than Significant with Mitigation Incorporation.* *The Mojave Desert Air Quality Management District (MDAQMD) regulates air quality and emissions in the project region. Project construction activities, such as drilling and trenching, may result in emissions that violate the pollutant criteria for particulate matter under 10 microns (PM10). However, emissions will be temporary during the five-week project construction period. No emissions are predicted during project maintenance activities.* **Mitigation Measures** *Project construction activities will comply with applicable rules and requirements of the MDAQMD.*				
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)?	☐	☐	☐	☑
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑
Significance – No impact. *No sensitive receptors (i.e., schools, hospitals, etc.) are located in the vicinity of the project site. Hinkley Elementary/Middle School is located approximately 1 mile to the west of the project site. The nearest residential development in the community of Hinkley is located approximately*				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
one-half mile from the project site. The groundwater extraction and injection system will be a closed system that will not produce odors beyond the project site. **Mitigation Measures** *None required.*				
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
Significance – *Less Than Significant.* *There may be some odors associated with the injection of lactate and EVO. In addition, the injection of both reagents has the potential to generate hydrogen sulfide gas and methane. However, the rural location of the project site and the one-half mile distance to the nearest residence will prevent these potential conditions from affecting a substantial number of people.* **Mitigation Measures** *None required.*				
IV. BIOLOGICAL RESOURCES Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
Significance - *No Impact.* *Project implementation is small in area (two cells of 80 ft by 40 ft) and will not affect any sensitive plant or wildlife species. The test cells are located on land previously graded and used for agriculture.* **Mitigation Measures** *No mitigation measures are required.*				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
Significance – *No Impact.* *The proposed project site and immediate surrounding areas do not support any waters of the United States, including wetlands. There are no natural drainage features, such as creeks or streams, supporting riparian habitat. No impacts to either the United States Army Corps of Engineers jurisdictional areas or the California Department of Fish and Game jurisdictional areas would occur from the proposed project.* **Mitigation Measures** *None Required.*				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
Significance – *No Impact.* *Because of the limited size of the test cells and the limited wildlife in the project vicinity, no impact to wildlife movement would result from the project.* **Mitigation Measures** *None Required.*				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑
Significance – *No Impact.* *The in-situ project is primarily underground. The project site lies within the County's Biological Resources Overlay, which indicates the potential presence of the desert tortoise and Mojave ground squirrel. Because the project size is small in area (two cells of 80 ft by 40 ft) and located on previously-disturbed sites, not much wildlife is expected. As a precaution, a*				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
biologist will help to select the exact test cell locations and will be available, if needed, during construction to prevent activities from affecting these species. **Mitigation Measures** *None required.*				
V. CULTURAL RESOURCES Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☑
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☑
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☑
Significance – *No Impact.* *Based on a review of the project site and vicinity provided by County of San Bernardino staff (S. Hall, 2003), the project does not fall within the County's cultural or paleontologic resource overlay maps. No impact to historic, archaeological, or paleontological resources is anticipated to result from project implementation.* *However, should archaeological resources be discovered during project construction, the proponent shall make provisions to identify and evaluate such resources using a certified archeologist and a culturally affiliated Native American. The proponent shall promptly notify the California Native American Heritage Commission for the deposition of recovered artifacts and to report an accidental discovery of human remains. In the latter instance, the proponent shall comply with Health and Safety Code §7050.5, CEQA §15064.5, and Public Resources Code §5097.98.* **Mitigation Measures** *None Required.*				
VI. GEOLOGY AND SOILS Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
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?	☐	☐	☐	☑
Significance – *No Impact.* *The nearest fault to the project site is the Lenwood-Lockhart-Old Woman Springs Fault, located approximately 0.4 mile from the site. No known faults traverse the project site. The project does not include plans to build any structures in the project area.* **Mitigation Measures** *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?	☐	☐	☐	☑
b) Create a significant hazard to the public or the environment through reasonably	☐	☐	☑	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				
Significance – *Less Than Significant Impact with Mitigation Incorporated.* ***No hazardous materials are involved in the project. The biologic reagents to be used in the pilot test are food-grade and do not require special transportation, handling, or storage.*** *There is potential for workers to be exposed to groundwater containing Cr(VI), a toxic chemical, should there be a mechanical or piping failure during the recirculation process at each test cell area.* **Mitigation Measures** *All workers will abide by the "Hinkley Field Work Health and Safety Plan" to prevent and minimize exposure to groundwater containing Cr(VI). Personal protective equipment consisting of a modified Level D, will be worn by all workers for normal field activities. Additional protective equipment will be worn during drilling activities for installation of wells. San Bernardino County issuing the drilling and trenching permit will ensure that personnel are abiding by the Health and Safety Plan. Accidental spills of chromium-containing groundwater shall be recorded in the field log and reported to the Regional Water Board and San Bernardino County within one working day.*				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				

Significance – *No Impact.*

The nearest school to the project site is Hinkley Elementary/Middle School, located approximately 1 mile west of the project site at 37600 Hinkley Road. The project site does not fall within an existing airport land-use plan and is not within 2 miles of a public or private airport. There is no potential for impacts related to wildland fires since the test cell areas are located on previously graded land at the compressor station and on fallow land at the East LTU.

Mitigation Measures
None Required.

VIII. HYDROLOGY AND WATER QUALITY
Would the project:

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

Significance – *Less than Significant with Mitigation Incorporated.*

Existing Groundwater Conditions
The groundwater below the test cell areas contains total chromium at concentrations that exceed the California Maximum Contaminant Level of 50 micrograms per liter (0.05 milligrams per liter [mg/L]). At the compressor station and the East LTU, total chromium (Cr(T)) concentrations in groundwater range from less than 0.005 mg/L to a maximum of 4.91 mg/L. Hexavalent chromium (Cr(VI))concentrations in groundwater range from less than 0.0005 mg/L to a maximum of 3.75 mg/L.

Biological Reagents
Approximately 165 gallons of 60% sodium lactate and 250 gallons of 100% vegetable oil (soy based) are proposed for injection to groundwater. These reagents will stimulate naturally-occurring microbes to consume oxygen in groundwater, creating an anearobic environment for reducing Cr(VI). Lactate will be mixed with extracted water from the test cell containing chromium to a concentration of 200 to 250 mg/L. EVO will be injected passively as a 4 to 5% solution at the test cell at the East LTU. Bioremediation end-products are carbon dioxide, water, and carbon as microbial biomass.

Tracer Test
A tracer test will be conducted to monitor groundwater flow rates both before the start of the pilot test and simultaneously with the pilot test. The tracer, potassium bromide, will be injected into the groundwater at a concentration of 500 mg/L and diluted to a concentration of 100 to 150 mg/L by adding distilled water at four times the bromide dose. As the tracer moves with groundwater, it will decrease in concentration with distance from the injection point to non-detect concentrations at the test cell boundaries. Bromide impacts to water quality will be short-term during the pilot test. Bromide is potentially toxic and has a water quality standard of 2,300 micrograms per liter (Federal Suggested No-Adverse-Response Level).

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Mitigation Measures *Draft Waste Discharge Requirements will be considered for adoption for this project at the October 13-14, 2004 Regional Water Board meeting. No violations of the water quality standards or the Draft Waste Discharge Requirements are anticipated to results from the project. Monitoring and Reporting requirements will verify compliance with discharge requirements. The proponent will record water quality results and notify the Regional Water Board if violations of water quality standards are detected.* *If violations of water quality standards are detected at contingency wells, the proponent will implement the Contingency Plan to control contaminant migration. The Contingency Plan states that groundwater will be pumped at extraction wells and will be re-injected to the aquifer at upgradient injection wells until water quality standards are restored. Reagent injection will be scaled back or halted to minimize additional violations. The proponent shall maintain a field log noting when and how the Contingency Plan is implemented.*				
b) Substantially deplete ground water supplies or interfere substantially with ground water recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
Significance – *No impact.* *At the compressor station, approximately 165 gallons of sodium lactate will be injected over a six-month period, slightly raising groundwater levels. Dissolved lactate will be captured downgradient at diluted concentrations by extraction wells, resulting in a slight decrease in groundwater level. Since dissolved lactate will move in a recirculation loop from injection wells to extraction wells and be piped back to the injection wells, there is no net affect in groundwater volume.* *The proposed project would inject approximately 550 gallons of EVO during the entire six-month period of the pilot test at the East LTU. The injected volume will slightly raise groundwater levels temporarily. When extraction wells are turned on during the last three months of the project, groundwater levels will be slightly lowered beneath the north end of the East LTU. Overall, the effect upon groundwater volume will be minimal.* *Groundwater levels at the injection and extraction wells at both test cell areas will stabilize to pre-test levels within days following the conclusion of the pilot study.* **Mitigation Measures** *None required.*				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☑
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑

Significance – *No Impact.*

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

Mitigation Measures
None Required.

f) Otherwise substantially degrade water quality?	☐	☐	☑	☐

Significance – *Less than Significant with Mitigation Incorporated.*

Reagent Injection
The addition of lactate and EVO to groundwater will change the existing water quality in the pilot test areas for a limited time during the project. However, groundwater in the area is contaminated with hexavalent chromium, a highly toxic form of chromium. Injecting the reagents into the groundwater will promote reduction of Cr(VI) to Cr(III), a less toxic form of chromium that is expected to precipitate out and bind to soil particles. Microbes should consume all or nearly all of the reagents as food. Any remaining reagent in groundwater will degrade naturally to non-detect concentrations or will be captured by extraction wells. 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. The nearest receptor, a residential drinking water well located approximately 0.5 miles to the east, is outside the influence of the test cells and will not be affected during or after the pilot test.

Besides chromium, the proposed project has the potential to chemically reduce certain metals existing in soil, such as iron, manganese, and arsenic, to a lower oxidation state. These reduced metals may become mobile in the subsurface and migrate with groundwater. While such metals could reach toxic levels, this potential impact to water quality was not detected in laboratory bench-scale studies. Nevertheless, metal/metalloids will be monitored for during the pilot study.

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

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Tracer Test *Potassium bromide, a salt, will be injected into the groundwater at a concentration of 500 mg/L and diluted to a concentration of 100 to 150 mg/L by adding distilled water at four times the bromide dose. As the tracer moves with groundwater, it should decrease in concentration with distance from the injection point and achieve water quality standards within the test cell boundaries. Therefore, the tracer impacts upon water quality will be short term and will not affect beneficial uses outside the test cells during and after the pilot test.* **Mitigation Measures** **Reagents** *If either of the reagents is detected at trigger concentrations in contingency wells at the test cell boundaries, groundwater extraction will be implemented to prevent further movement downgradient. These actions shall be recorded in the field log. The project proponent may also scale back or even halt reagent injections altogether.* **Metals/Metalloids** *In the event that reduced metals are detected at trigger concentrations in groundwater during normal groundwater monitoring, the proponent will implement the Contingency Plan and conduct groundwater extraction for restoring water quality to background levels. These actions shall be recorded in the field log.* **Tracer** *During normal groundwater monitoring, if potassium bromide concentrations reach trigger concentrations at the end of the test cell area, groundwater extraction will be initiated to restore water quality. The proponent will use a bromide ion-specific probe to monitor bromide levels in water. Monitoring results will be recorded in a field log. If concentrations exceed water quality standards (2,300 micrograms per liter), the proponent will implement the Contingency Plan and initiate groundwater extraction. These actions shall be recorded in the field log.*				
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?	☐	☐	☐	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑
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?	☐	☐	☐	☑
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑
Significance – *No Impact.* *The nearest surface water body to the project site is the Mojave River, located approximately 1.3 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 significant body of water and steep slopes, the proposed project is not subject to risk from seiche, tsunami, or mudflows.*				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Mitigation Measures *None Required.*				
IX. LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑
Significance – *No Impact.* *The nearest residential community is within the town of Hinkley, located approximately one-half mile from the project site. Implementation of the proposed project would not divide an established community.* *The project site is designated RL-AG (Rural Living-Agricultural Preserve) by the County General Plan. According to San Bernardino County, the project will not require a Temporary or Conditional Use Permit since temporary operations will not affect the existing land uses. Therefore, no conflict with the County General Plan or zoning ordinances would result from project implementation.* *The project site does not fall within an adopted habitat conservation plan or natural community conservation plan. The proposed West Mojave Plan, under preparation by the Bureau of Land Management and local state agencies, would apply to the project if adopted. However, project implementation would not conflict with this plan as proposed.* **Mitigation Measures** *None required.*				
X. MINERAL RESOURCES Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
recovery site delineated on a local general plan, specific plan or other land use plan?				

Significance – *No Impact*

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

Mitigation Measures
None required.

XI. NOISE

Would the project result in:

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

Significance – *Less than Significant.*

The County of San Bernardino's General Plan Noise Element standard for residential development is 60 dB exterior noise level. Project construction activities will temporarily increase noise levels at the project site. However, construction noise would be short-term, limited to the approximately 5-week construction period. Construction noise, most of which will be from a drilling rig, would be substantially attenuated by the approximately one-half mile distance from the project site to the nearest sensitive noise receptors in the community of Hinkley. Construction activities would be limited to normal daytime business hours. Therefore, no long-term impacts are anticipated.

Mitigation Measures
None required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Significance – *Less than Significant.* *Project construction activities will temporarily increase noise levels at the project site. However, construction noise would be short-term, limited to the approximately 5-week construction period. Construction noise would be substantially attenuated by the approximately one-half mile distance from the project site to the nearest sensitive noise receptors in the community of Hinkley. Construction activities would be limited to normal daytime business hours.* **Mitigation Measures** *None required.*				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
Significance – *No Impact.* *The project site is not located within an airport land-use plan or within 2 miles of a public airport. There are no private airstrips in the project vicinity that would be affected by project implementation.* **Mitigation Measures** *None Required.*				
XII. POPULATION AND HOUSING Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Significance – *No Impact.* *Project implementation does not involve the construction of new residential or commercial development or infrastructure that could support additional population growth in the project area. Additionally, no housing displacement would result from project implementation, and no residents would be displaced from their existing residence.* **Mitigation Measures** *None Required.*				
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑
Significance – *No Impact.* *Project construction and operation activities have the potential for accidents involving fire or injury that could require local emergency fire service personnel and equipment. The temporary nature of the project (six months) and the limited number of personnel (up to five, but usually two) at the site would not pose a burden upon public services. Therefore, project implementation would not require the expansion of existing emergency services and would not affect current response times.* *Project operations would involve an operator in attendance approximately once per week for a few hours. The operator will commute to the site and live elsewhere. No population growth would result from the project. If an emergency arose, PG&E Compressor Station personnel could also be utilized for assistance. Therefore, no impact to police, schools, parks, or other public facilities is anticipated.* **Mitigation Measures** *None Required.*				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑
Significance – *No Impact.* *The project would not result in direct or indirect population growth; therefore, project implementation will not increase the use or demand for recreational facilities. The proposed project does not include the construction or expansion of recreational facilities.* **Mitigation Measures** *None Required.*				
XV. TRANSPORTATION/TRAFFIC				
Would the project:				
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☑	☐
Significance – *Less than Significant.* *The estimated 5-week construction time period of the proposed project facilities (well installation and trenching) will result in a minor, temporary increase in traffic volume due to a maximum of six 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, limited construction time, 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 once per week for a few hours to check system operation, collect samples, and perform maintenance activities.* **Mitigation Measures** *None required.*				
b) Exceed, either individually or cumulatively, a level of service standard	☐	☐	☐	☑

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
established by the county congestion management agency for designated roads or highways?				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Result in inadequate parking capacity?	☐	☐	☐	☑
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☑

Significance – *No Impact.*

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

The negligible increase in traffic generated by project operations from less than one full-time equivalent employee and occasional maintenance-related truck trips 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 design changes of existing roadway configurations.

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

Mitigation Measures
None required.

XVI. UTILITIES AND SERVICE SYSTEMS Would the project				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing 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?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

Significance – *No Impact.*

Potential impacts associated with the proposed ground water injection and extraction wells, and tracer tests are discussed throughout this initial study; no significant impacts are anticipated from project implementation.

About 900 gallons of water will be needed to mix with EVO for injection at Test Cell 2. This water will be obtained from the compressor station where drinking water is available.

Since no surface water will be generated during the proposed project, implementation does not require additional stormwater drainage facilities.

During the 6 to 12 month project, workers will use the existing on-site septic system at the compressor station, in accordance with existing wastewater treatment requirements; no demand will be placed on the regional wastewater treatment facilities serving the area. The nominal amount of solid waste generated during project construction will be taken off site for disposal.

Mitigation Measures
None required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

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

Significance – *No Impact.*

No significant habitat would be impacted by the project. Areas that will be disturbed by the project (well installation and trenching) will be located in areas already disturbed by agricultural operations, access roads, or other improvements /disturbances. As discussed in Section 5, the project would not eliminate important examples of major periods of California history and prehistory.

Mitigation Measures
None required.

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

Significance – *Less than significant when mitigated.*

The project site is surrounded primarily by agricultural development. Project operations require the withdrawal and reinjection of groundwater from the Mojave Basin with no net removal of water.

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

Bench-scale studies indicated that naturally-occurring microbes would readily consume reagents injected to groundwater without creating adverse conditions. The tracer, potassium bromide should attenuate to water quality standards with the test cell boundaries. Monitoring activities listed in the Sampling and Analysis Plan will verify that no adverse conditions are created by project implementation. The proponent will conduct all construction activities during normal business hours, and thereby ensure that noise impacts are minimal.

Mitigation Measures
None required.

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

Significance – *No Impact.*

Project implementation is not anticipated to result in any adverse environmental impacts and would not cause any substantial adverse effects to human beings. The final degradation products of the biological nutrients would typically be microbial biomass (organic matter), carbon dioxide, water, and possibly low concentrations of methane and hydrogen sulfide under anaerobic conditions. These degradation products are not expected to significantly effect water quality. Cr(VI) will be converted to Cr(III), which will primarily precipitate as chromium oxide/hydroxide.

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.

Mitigation Measures
None required.