Attachment H

Findings and Statement of Overriding Considerations

Comprehensive Groundwater Cleanup Strategies for Historical Chromium Discharges from PG&E's Hinkley Compressor Station

(SCH# 2008011097)

California Regional Water Quality Control Board, Lahontan Region

March 2014

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Foreword

This document contains the Findings required by the California Environmental Quality Act (CEQA) (Pub. Res. Code 21081[a]) and section 15091 of the State CEQA Guidelines (14 Cal. Code Reg. 15091) and the statement of overriding considerations required by section 15093 of the State CEQA Guidelines (14 Cal. Code Reg. 15093). The Findings are contained in Section 1 of the following document. The Statement of Overriding Considerations is contained in Section 2.

Acronyms and Abbreviations

afy	acre-feet per year
ATSF railroad	Atchison, Topkea, and Santa Fe Railroad
BLM	U.S. Bureau of Land Management
CAO	Cleanup and Abatement Order
CCR	California Code of Regulations
CDCA	California Desert Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CRHR	California Register of Historic Resources
DEHP	di2-ethylhexyl) phthalate
DWMA	Desert Wildlife Management Area
EIR	environmental impact report
Findings	findings of fact
FMMP	Farmland Mapping and Monitoring Program
FPA	Free Production Allowance
g/bhp-hr	grams per brake horsepower-hour
GHG	greenhouse gas
gpm	gallons per minute
GVWR	gross vehicle weight rating
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HASP	Health and Safety Plan
IPM	integrated pest management
IRZ	in-situ reduction zones
MCL	maximum contaminant level
MDAQMD	Mojave Desert Air Quality Management District
MLDs	most likely descendants
MWA	Mojave Water Agency
NO_X	nitrogen oxide
O&M	operation and maintenance
PE/PG	Professional Engineer or Professional Geologist

PG&E	Pacific Gas & Electric Company
PM10	PM 10 microns in diameter or less
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
Program	water supply program
RWQCB	Regional Water Quality Control Board
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
Water Board	California Regional Water Quality Control Board, Lahontan Region
WDRs	waste discharge requirements

1. Findings

1.1 Introduction

The Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from Pacific Gas & Electric Company's (PG&E's) Hinkley Compressor Station (proposed project) consists of expanded remediation activities to address the full extent of the chromium contamination in groundwater. The environmental impact report (EIR) evaluates at an equal level of detail six project alternatives, including the no-project alternative. The alternatives utilize different combinations and intensities of the following remediation activities:

- Plume containment by extracting contaminated groundwater at outer edge of plume.
- Plume containment by injecting clean water at the outer edge of plume.
- Groundwater extraction and land treatment (with agricultural reuse), whereby contaminated groundwater is extracted and applied to land where soil microbial action converts soluble hexavalent chromium to insoluble trivalent chromium.
- In-situ (below-ground) treatment, whereby biological and chemical reductants are injected into the contaminated groundwater to promote conversion of soluble hexavalent chromium to insoluble trivalent chromium.
- Ex-situ (above-ground) treatment, whereby contaminated chromium is extracted, treated, and then discharged to either land (agricultural reuse) or injected back into the aquifer.

The project area for the EIR analysis encompasses the current chromium plume area and adjacent areas where the plume may be defined in the future and where monitoring and remedial activities may occur, as well as areas of potential effects due to groundwater pumping from the remediation activities. The project area is located in the Mojave Desert near the town of Hinkley, approximately 6 miles west of the City of Barstow and 1 mile north of the Mojave River, in San Bernardino County, California.

The proposed project was analyzed in the Final EIR, dated May 2013, which was prepared pursuant to CEQA and the State CEQA Guidelines (14 Cal. Code Reg. 15000 et seq.). The Final EIR considered potential construction and operational impacts on the environment that would result from the six project alternatives.

To support a decision on a project for which an EIR is prepared, a lead or responsible agency must prepare written findings of fact (Findings) for each significant environmental impact and each alternative identified in the EIR in accordance with Section 15091 of the CEQA Guidelines. The California Regional Water Quality Control Board, Lahontan Region (Water Board), as the lead agency, has prepared

these Findings for the proposed project. The Findings must be adopted by the Water Board after certification of the Final EIR and at the time of approval of the project.

Section 15091 of the CEQA Guidelines states that no public agency shall approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects of the project, unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

1. Changes or alternatives have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
   [14. Cal. Code Reg. 15091(a)(1)]
2. Such changes or alternatives are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
   [14. Cal. Code Reg. 15091(a)(2)]
3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR.
   [14. Cal. Code Reg. 15091(a)(3)]

The Water Board staff has prepared a Final EIR for the proposed project, and the Water Board certified the Final EIR at its Board meeting on July 17, 2013. The Final EIR identified various significant environmental impacts of the proposed project.

In compliance with CEQA and Section 15091 of the State CEQA Guidelines, the Water Board has prepared the following Findings, which include a finding for each significant environmental impact (Section 1.2) and the project alternatives considered (Section 1.3). For the purposes of these Findings, the impacts and mitigation measures have been summarized and presented by issue area as follows, in the same order presented in the Final EIR and in the Mitigation Monitoring and Reporting Program. The mitigation measures are described in full in the referenced sections of the Final EIR (Volume II) and are hereby incorporated by reference.

- 3.1 Water Resources and Water Quality
- 3.2 Land Use, Agriculture, Population and Housing
- 3.3 Hazards and Hazardous Materials
- 3.4 Geology and Soils
- 3.5 Air Quality and Climate Change
- 3.6 Noise
- 3.7 Biological Resources
- 3.8 Cultural Resources
- 3.9 Utilities and Public Services
- 3.10 Transportation and Traffic
- 3.11 Aesthetics
- 3.12 Socioeconomics

1.2 Findings for Significant Environmental Impacts

1.2.1 Water Resources and Water Quality

Impact WTR-1a: Groundwater Drawdown Effects on the Regional Water Supply (Mojave River Basin, Centro Subarea) (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified as a significant impact that the project would cause groundwater drawdown that could affect regional water supply in the Centro Subarea of the Mojave River Basin. To mitigate this impact, PG&E would need to acquire additional water rights to cover its additional drawdown. The Mojave River Basin is an adjudicated groundwater basin within which the amount of groundwater that can be extracted by all parties is based on a court-determined Production Safe Yield. The limits on water withdrawals under the adjudication maintain proper water balances within each subarea of the basin. The study area within this EIR is located within the Centro subarea of the Mojave Basin Area adjudicated boundary. The Free Production Allowance for the Centro subarea for water year 2010–2011 was 39,519 acre-feet per year (afy) (MWA 2012) with verified production of 21,130 afy, indicating a surplus of 18,389 afy (MWA 2012). The Production Safe Yield for the Centro subarea has been identified as 33,375 afy, indicating a surplus of 12,245 afy over the safe yield in the 2010–2011 water year. A review of production estimates from 1993 indicates that the actual 5-year production averages have been less than the current Free Production Allowance and less than the sustainable yield. Over the last five water years (2006–2011), the verified production has averaged 25,193 afy, indicating a surplus over the Free Production Allowance of 14,329 afy and a surplus over the safe yield of 8,182 afy.

Most of the agricultural water users near the Hinkley Compressor Station are included in the Mojave River Groundwater Basin adjudication agreement. PG&E is a designated water user, owns water rights totaling approximately 2,429 afy and, based on the 2010–2011 Watermaster Annual Report, has a current base annual allowance of 1,944 afy (MWA 2012). The Gorman property (in the middle of the existing plume) was not a party to the adjudication and had been pumping at historical levels of about 250–300 gallons per minute (gpm) until it was purchased by PG&E in 2010. PG&E now owns the former Gorman property for agricultural treatment but pumping now falls under adjudication and is similar to prior levels (approximately 285 gpm).

This impact is deemed significant if PG&E's projected annual water use (or production) exceeds their annual allowance; however, the impact can be mitigated if PG&E increases their allowance by acquiring water rights through purchase or transfer. Total agricultural treatment pumping quantities for each alternative were compared to PG&E's current Free Production Allowance. As noted in the Final EIR, PG&E currently owns 2,429 afy of water rights and has a current Free Production Allowance of 1,944 afy. Although this analysis is conducted based on the current water rights, recent property purchases are likely to gain an additional 729 afy for a total of 3,158 afy (which would increase their Free Production Allowance to 2,526 afy). In order to comply with the Basin Adjudication, PG&E will have to acquire additional water rights in order to maintain the flows estimated in Table 3.1-7 in Chapter 3.1 of the Final EIR. Since there has been a consistent surplus over the Free Production Allowance and the Production Safe Yield that is greater than the maximum amount of water use in Table 3.1-7, there is adequate unused allowance available that PG&E could acquire to achieve the pumping volumes for any of the alternatives. It is feasible to acquire water rights from other owners. A recent example is the

recent large-scale acquisition of water rights and allowances to support new projects. The Abengoa Solar project (now Mojave Solar project) near Lockhart in the Harper Lake Valley acquired water rights of primarily former agricultural land in the amount of approximately 10,500 afy (Free Production Allowance of 8,400 afy).

It is feasible to acquire additional water rights while avoiding regional drawdown because there has been a consistent surplus over the regional Free Production Allowance, and the Production Safe Yield is greater than the maximum amount of water use. (Final EIR, Volume II, Section 3.1.3.3) Additionally, water rights have been acquired from other owners, as exemplified by recent large-scale acquisition of water rights and allowances to support new projects such as the Mojave Solar project. In order to ensure that water will be available, PG&E will be required to demonstrate to the Water Board that it has acquired the necessary water rights before it will be allowed to increase the agricultural treatment.

Mitigation Measure WTR-MM-1: Purchase of New Water Rights to Comply with Basin Adjudication

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new Cleanup and Abatement Order (CAO) and/or associated waste discharge requirements (WDRs) issued to PG&E for the remediation, as follows:

- By January 31 each year, PG&E will document its total water rights and Free Production Allowance (FPA) for groundwater pumping relative to the remedial project to the Water Board.
- By December 31 each year, PG&E will document the expected total amount of net agricultural treatment water use for the following year.
- At all times, PG&E will possess adequate water rights and FPA that meet or exceed the current expected agricultural treatment water use.
- If PG&E fails to acquire adequate water rights and FPA to support proposed agricultural treatment, PG&E will be required to implement above-ground treatment or modify existing remedial activities to compensate for any loss in planned agricultural treatment.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-1b: Groundwater Drawdown Effects on the Local Water Supply (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified as a significant impact that, the project would cause groundwater drawdown that could affect the local water supply (Hinkley Valley Aquifer). As pumping rates are increased for remediation activities, the magnitude and extent of drawdown in local wells is increased. Groundwater drawdown that would be more than 25% of the wetted screen depth of any affected well is considered a substantial effect, and required mitigation is to provide an alternative water supply for those wells. Alternative water supplies could be derived from deeper wells (below the

projected drawdown level), from storage tanks and hauled water, or from water delivered via pipeline from an off-site source, including a community supply. There would be adequate alternative water supplies to provide for the maximum number of domestic wells potentially affected (up to 133 domestic wells partially or fully affected for Alternative 4C-4, which requires the most agricultural land treatment). The PG&E supply wells south of the Compressor Station used to provide water for freshwater injection on the west side of plume are enough water to supply potentially affected water uses, indicating that yields near the Mojave River should be adequate to provide an alternative water supply of community water for all affected residences should an offsite water source be needed. Thus, provision of alternative water supplies is feasible to address this impact.

The Water Board will include the requirements of the following mitigation in the new CAO and/or associated WDRs:

> **Mitigation Measure WTR-MM-2: Water Supply Program for Wells that are Affected by Remedial Activities**
>
> As identified in the Final EIR (Volume II, Section 3.1.9), PG&E will implement a comprehensive water supply program (Program) to determine residences and agricultural land owners whose water supply wells may be adversely affected by remedial actions from chromium plume expansion, remediation byproducts, or groundwater drawdown. The Program will be designed to either expedite remediation before a water supply well becomes affected, or provide reliable water supply for the entire duration of well impairment due to remedial activities.
>
> The Program will determine all "actually affected" and all "potentially affected" wells. If a water supply well is determined to be an "actually affected" well, then PG&E will provide alternative water supply that meets specific requirements. If a water supply well is determined to be "potentially affected" well, then PG&E will either 1) expedite remediation of the conditions causing the well to be potentially affected such that actual impacts do not occur; or 2) provide alternative water supply. If PG&E chooses to remediate the triggering condition, it will provide a feasibility study and plan to the Water Board demonstrating feasible means to avoid actually affecting any domestic or agricultural well. If expedited remediation is not feasible, PG&E will provide alternative water supply to all "potentially affected" wells prior to the wells being actually affected by chromium plume expansion, remedial byproducts or substantial groundwater drawdown. Because the definition of a "potentially affected" well includes any well that is projected to be affected in the next year, this provides adequate advanced warning to feasibly provide the alternative water supply before impacts to supply wells occur.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-2d: Temporary Localized Chromium Plume Expansion ("Bulging") due to Remedial Activities (Significant and Unavoidable for Aquifer and Less than Significant with Mitigation for Water Supply Wells, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified a significant impact for water supply wells and significant and unavoidable impact for the aquifer related to chromium plume expansion ("bulging"). With the implementation of increased agricultural treatment and in-situ remediation, compared to existing conditions, temporary localized spreading ("bulging") of the chromium plume in the upper aquifer could occur. With the implementation of plume containment monitoring, control, and alternative water supply as mitigation measures, this impact would be alleviated to a less-than-significant level for domestic and agricultural water supply wells for all alternatives. However, the impact to the aquifer within the localized plume bulging areas will remain potentially significant and unavoidable until final cleanup of the chromium has returned the entire aquifer to background levels and mitigation measures are no longer needed.

Mitigation Measure WTR-MM-2: Water Supply Program for Wells that are Affected by Remedial Activities

This mitigation measure is described above.

Mitigation Measure WTR-MM-3: Incorporate Measures to Prevent, Reduce and Control Potential Temporary Localized Chromium Plume Bulging Into Overall Plume Control and Monitoring

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E to address potential chromium plume bulging due to remedial activities. These requirements shall be incorporated into the overall plume boundary monitoring and hydraulic capture requirements, and these requirements will be flexible (only as authorized by the Water Board) to allow for expansion and contraction of the plume over time as the entirety of the plume is addressed and remediated. These requirements are included in the detailed mitigation measure WTR-MM-3, but in summary include: monitoring plume boundaries near new remedial injections/withdrawals, maintaining hydraulic control by pumping extraction wells, maintaining/modifying existing extraction wells, use of treated water to assist with inward hydraulic gradient and water balance, and implementing a contingency plan for agricultural treatment. The Water Board shall modify the requirements if alternative measures are determined more effective at control of plume bulging.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

However, the adopted mitigation would not reduce the impact on the aquifer to a less-than-significant level prior to completion of remediation. Therefore, this impact may still be significant with the adopted mitigation. Complete avoidance of any plume bulging is not avoidable if in-situ

remediation methods are used unless injection volumes are highly limited. Due to the economic and social importance in returning beneficial uses of the aquifer as soon as possible, in-situ remediation with increased volumes over that being used at present is a critical element to the remediation strategy. While use of aboveground treatment methods would avoid bulging potential, aboveground treatment would be much slower in remediating the high-concentration portion of the plume. Chapter 2, Table 2-2 of the Final EIR shows that Alternative 4C-5 would take up to 20 years to reduce the plume Cr[VI] concentration to below 50 ppb compared to 3 to 6 years for all other action alternatives, all of which include in-situ remediation. Alternative 4C-5 includes some in-situ remediation in the high concentration zone so it is not the best comparison between an aboveground treatment alternative to alternatives with in-situ remediation. The PG&E 2010 Feasibility Study (PG&E 2010), Table 6-3 shows that 2010 Feasibility Study Alternative 5 (Plume-Wide Pump and Treat) would take an estimated 50 years to reduce the plume Cr[VI] concentration to below 50 ppb. Given the substantially longer times with pump and treat (aka aboveground treatment), and the importance of addressing the high-level plume concentrations for beneficial uses, exclusive use of aboveground treatment for addressing the high concentrations was rejected as an alternative. Aboveground treatment may be used in combination with in-situ remediation as studied in Alternative 4C-3 and 4C-5.

Where the Water Board authorizes expansion of in-situ remediation, it finds there is an overriding consideration in accelerating remediation, especially considering that impacts to affected water wells can be mitigated to a less-than-significant level. The Water Board finds that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(3)]

Impact WTR-2e: Increase in Total Dissolved Solids, Uranium, and Other Radionuclides due to Agricultural Treatment (Temporary Significant and Unavoidable for Aquifer and Less than Significant with Mitigation for Water Supply Wells)

The Final EIR (Volume II, Section 3.1.8) identified a significant impact for water supply wells and significant and unavoidable impact for the aquifer related to agricultural treatment byproducts. Agricultural treatment would result in increased total dissolved solids in the water that infiltrates back to the aquifer below the irrigated land as a result of increased concentrations of total dissolved solids in the root zone due to evaporation. Mitigation is required to control the spread of remedial byproducts and to ultimately return water quality to pre-remedial reference conditions, but temporary degradation of the aquifer water quality is likely unavoidable in some locations in order to facilitate the chromium remediation. Increased groundwater pumping for agricultural treatment could also result in mobilizing naturally-occurring uranium and other radionuclide concentrations in groundwater, but this impact requires further investigation in order to be fully characterized and thus temporary water quality degradation may also occur for these constituents as well.

Mitigation Measure WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown

This mitigation measure is described above.

Mitigation Measure WTR-MM-4: Restoration of the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E to restore the Hinkley aquifer back to pre-remedial reference conditions (defined as conditions prior to the initiation of remedial actions included in the project defined in the EIR). PG&E will restore the aquifer through direct treatment of water and/or implementing basin-wide approaches to managing agricultural treatment remedial total dissolved solids (TDS) and nitrate byproducts that may avoid the need for post-chromium remediation activities to address these remedial byproducts. No later than 10 years prior to the conclusion of remediation project, PG&E will assess adverse impacts to the Hinkley aquifer from its remedial actions. If the assessment finds the aquifer contains constituents exceeding pre-remedial reference conditions or finds groundwater drawdown due to remedial action, PG&E will propose (and implement as approved by the Water Board or Mojave Water Agency) actions to restore the aquifer for beneficial uses and to pre-remedial reference conditions. Each following year, PG&E will submit a status report of actions to restore the aquifer and provide an updated schedule predicting fulfillment of aquifer restoration. The full mitigation measure includes details for restoration depending on the remedial activity (i.e., agricultural treatment byproducts and in-situ reduction zones [IRZ] byproducts).

Mitigation Measure WTR-MM-5: Investigate and Monitor Total Dissolved Solids, Uranium and Other Radionuclide Levels in Relation to Agricultural Treatment and Take Contingency Actions

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E to investigate and monitor TDS, uranium, and other radionuclides levels in relation to existing agricultural treatment by sampling water used for agricultural treatment and in groundwater upgradient, beneath and downgradient of agricultural treatment units. Within three months of Water Board approval of WDRs allowing new agricultural treatment units, PG&E will submit the investigation plan to the Water Board for approval. Within one year of WDR approval, PG&E will conduct and provide the results of the investigation, along with an analysis of whether agricultural treatment is affecting uranium levels. PG&E will monitor all new agricultural treatment units; and if TDS, uranium, and other radionuclides levels are determined to increase due to remedial treatment, then PG&E will monitor these levels in and adjacent to all agricultural treatment units for the duration of operation and propose remedial methods for Water Board approval to restore the aquifer to pre-remedial reference conditions.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

However, the adopted mitigation may not reduce the impact on the aquifer to a less than significant level. Therefore, this impact may still be significant with the adopted mitigation. The remediation of the contaminated aquifer with agricultural treatment cannot be technically completed without at least some potential temporary increases in localized TDS level and possibly temporary increases in uranium and radionuclide levels. Mitigation would address long-term impacts of TDS, uranium, and radionuclide levels, but may not avoid temporary impacts. Agricultural treatment is effective for long-term remediation of lower level concentration parts of the plume. While aboveground treatment of the areas proposed for agricultural treatment would avoid potential temporary impacts of TDS (and possibly radionuclides and uranium), aboveground treatment would take substantially longer to remediate the plume compared to agricultural treatment for the low-concentration plume. Chapter 2, Section 2.7.1, *2010 Feasibility Study (September 2010)* of the Final EIR describes that Feasibility Study Alternative 5 (Plume-wide pump and treat) would have an estimated time to cleanup to 3.1 ppb Cr[VI] of 140 years. Further, 2010 Feasibility Study Alternative 5 was only designed to treat the plume as it existed in early 2010, not the expanded plume studied in the EIR and thus it may take longer than 140 years to meet the remedial targets, whereas the action alternatives studied in the EIR (all of which contained agricultural treatment), would remediate the plume to 3.1 ppb in 29 to 50 years. Aboveground treatment is also much less cost-effective than agricultural treatment. While aboveground treatment might be used in combination with in-situ remediation and agricultural treatment as studied in Alternatives 4C-3 and 4C-5, exclusive use of aboveground treatment instead of agricultural treatment is rejected due to the lengthy timeframes necessary to remediate the plume and due to issues of cost-effectiveness.

Thus, the Water Board finds that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(3)]

Impact WTR-2f: Change in Nitrate Levels due to Agricultural Treatment (Less than Significant with Mitigation for Water Supply Wells, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified as a significant impact that due to the potential for groundwater to be extracted from an area of higher nitrate concentrations and then discharged in an area with much lower nitrate concentrations, nitrate concentrations could increase in the receiving areas due to percolation. Adversely changing the water quality of the aquifer may be a significant impact if the time of impact was long term or if there is a significant increase or potentially significant increase in nitrate concentrations in a water supply well. However, this potential impact can be addressed with the implementation of mitigation measures that involve monitoring nitrate levels and managing agricultural treatment to avoid increases in nitrate concentration above 10 parts per million (ppm) (as N) by more than significance criteria compared to existing conditions. This may be done by monitoring nitrate levels at agricultural treatment units, managing extraction source water, and or providing alternative water supplies (for affected wells) if necessary.

Mitigation Measure WTR-MM-6: Monitor Nitrate Levels and Manage Agricultural Treatment to Avoid Significant Increases in Nitrate Levels and Provide Alternative Water Supplies As Needed

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E to monitor nitrate levels for one year before creating new agricultural treatment units, monitor at the start of new agricultural treatment, and continue monitoring during implementation of all new agricultural treatment units. If monitoring indicates that nitrate levels exceed 10 ppm (as N) or increase by more than 10% (if current levels are already above 10 ppm as N) or by more than 20% compared to existing levels (if current levels are less than 10 ppm as N), then PG&E will implement a contingency plan for managing nitrate levels. PG&E will manage extraction of source water to avoid increases in nitrate concentration above 10 ppm (as N) by more than significance criteria compared to existing conditions, and/ or provide alternative water supplies (for affected wells) if necessary. Alternatively this mitigation measure may be met through basin-wide approaches described in Mitigation Measure WTR-MM-4.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-2g: Increase in Other Secondary Byproducts (Dissolved Arsenic, Iron and Manganese) due to In-Situ Remediation (Temporarily Potentially Significant and Unavoidable for Aquifer and Less than Significant with Mitigation for Water Supply Wells, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified a significant impact for water supply wells and significant and unavoidable impact for the aquifer related to IRZ byproducts. The project would increase in-situ remediation compared to existing conditions, which could result in increased levels of byproducts such as dissolved arsenic, iron, and manganese in the groundwater compared to current levels. Temporary and localized degradation of the aquifer near carbon amendment injection points is unavoidable if in-situ remediation is to be employed. In addition to measures already being performed to reduce potential impacts, proposed mitigation measures can help further reduce impacts or potential impacts to domestic water supplies. While this impact can be mitigated, limiting the byproduct plume extent through extraction wells or the rate of carbon injections to the aquifer could compromise the pace of chromium plume remediation. Should the Water Board allow temporary aquifer degradation due to byproduct plume generation to achieve more rapid or complete chromium plume remediation, then the aquifer would be temporarily and locally degraded and this would be a significant and unavoidable impact. Prior experience with in-situ remediation has shown that concentrations of remedial byproducts return to pre-injection levels as the injected carbon is consumed by microbial processes and is diluted with downgradient migration. This has occurred within a matter of months with prior pilot studies and prior remediation efforts. Thus, concentrations of iron, manganese, and arsenic are expected to return to pre-injection levels within several months up to two years following the end of carbon injection based on experience with in-situ remediation to date. However, in case any residual effect were to be present near the end of chromium plume remediation activities, PG&E would

be required to restore aquifer water quality conditions to the pre-project condition. This action is necessary to restore beneficial uses of the aquifer to what they were before implementation of the remedial actions included in the proposed project.

Mitigation Measure WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown

This mitigation measure is described above.

Mitigation Measure WTR-MM-4: Restoration of the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses

This mitigation measure is described above.

Mitigation Measure WTR-MM-7: Construction and Operation of Additional Extraction Wells to Control Carbon Amendment In-situ Byproduct Plumes

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E to monitor secondary byproducts in groundwater (as required by Mitigation Measure WTR-MM-2), complete an investigation of manganese and arsenic in the area west of the defined chromium plume (as of Q4/2012), and demonstrate that detection of these constituents in domestic wells is not related to IRZ operations before the Water Board will allow further expansion of IRZ operations. If arsenic, iron, or manganese concentrations at designated monitoring wells increase to more than 20% above the maximum pre-remedial reference monitoring well concentration, PG&E will construct and operate additional extraction wells or implement an equally effective mitigation measure along or upgradient of the IRZ treatment boundary to intercept or reduce reagent concentrations and secondary byproducts to prevent effects to domestic water supply wells. If control of byproduct plumes cannot be achieved without compromising the pace of cleanup, then PG&E will request permission from the Water Board to allow byproduct plume migration with implementation of specific performance standards, as follows: PG&E will provide fate and transport modeling of byproduct plume migration, in absence of complete boundary control, including identification of all affected domestic and agricultural wells. PG&E will demonstrate the duration of byproduct plume impairment of water quality and will identify how/when affected groundwater will return back to pre-remedial reference conditions. PG&E will provide alternative water supplies to all wells proposed to be affected, per Mitigation Measure WTR-2. The Water Board will retain the authority to approve or deny temporary impairment of the aquifer due to byproduct generation and will make determinations on a case by case basis taking into account information on remedial progress, the affected wells and community, the certainty of returning affected groundwater to pre-remedial reference water quality over time and any other relevant considerations.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated

into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

However, the adopted mitigation may not reduce the temporary impact on the aquifer to a less than significant level. Therefore, this impact may still be significant with the adopted mitigation. Complete avoidance of any temporary aquifer increases in byproducts is not avoidable if in-situ remediation methods are used. Due to the economic and social importance in returning beneficial uses of the aquifer as soon as possible, in-situ remediation with increased volumes over that being used at present is a critical element to the remediation strategy. While use of aboveground treatment methods would avoid aquifer byproduct increase potential, aboveground treatment would be much slower in remediating the high-concentration portion of the plume. Chapter 2, Table 2-2 of the Final EIR shows that Alternative 4C-5 would take up to 20 years to reduce the plume Cr[VI] concentration to below 50 ppb compared to 3 to 6 years for all other action alternatives, all of which include in-situ remediation. Alternative 4C-5 includes some in-situ remediation in the high concentration zone so it is not the best comparison between an aboveground treatment alternative to alternatives with in-situ remediation. The PG&E 2010 Feasibility Study (PG&E 2010), Table 6-3 shows that 2010 Feasibility Study Alternative 5 (Plume-Wide Pump and Treat) would take an estimated 50 years to reduce the plume Cr[VI] concentration to below 50 ppb. Given the substantially longer times with pump and treat (aka aboveground treatment), and the importance of addressing the high-level plume concentrations for beneficial uses, exclusive use of aboveground treatment for addressing the high concentrations was rejected as an alternative. Aboveground treatment may be used in combination with in-situ remediation as studied in Alternative 4C-3 and 4C-5.

Where the Water Board authorizes expansion of in-situ remediation, it finds there is an overriding consideration in accelerating remediation, especially considering that impacts to affected water wells can be mitigated to a less than significant level. Thus, the Water Board finds that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(3)]

Impact WTR-2h: Potential Degradation of Water Quality due to Freshwater Injection (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified as a significant impact that the project could potentially degrade water quality from freshwater injection, whereby freshwater is extracted from three supply wells located south of the Compressor Station and injected into five wells along Serra Road (the western plume boundary) to deflect chromium plume migration to the northeast instead of west. One of the three supply wells has concentrations of arsenic up to 60 ppb (far exceeding the Maximum Contaminant Level of 10 parts per billion [ppb]), so the water is filtered through an ion exchange system to remove naturally-occurring arsenic to concentrations below the maximum contaminant level (MCL) prior to injection. All alternatives will include filtration or pretreatment of water for arsenic to ensure that injected water meets drinking water quality. Because the location of the water supply well containing arsenic is in an area with relatively low levels of other constituents (TDS, Nitrate, Manganese) compared to other parts of the Hinkley Valley Aquifer, use of water from the current source would not degrade water quality for these constituents at the injection point. Uranium or other radionuclide levels in water supply wells used for freshwater injection were also tested, and

concentrations are less than the corresponding MCLs. However, given the decades-long duration of remedial activities, it is also possible that future water supply wells may be located in other locations and/or the water quality of the current source water could change due to external factors, thus potentially resulting in water quality degradation.

Mitigation Measure WTR-MM-8: Ensure Freshwater Injection Water Does Not Degrade Water Quality

As identified in the Final EIR (Volume II, Section 3.1.9), the Water Board will include requirements in the new CAO and/or associated WDRs issued to PG&E that require water used for freshwater injection meets applicable water quality standards. PG&E will sample all water sources proposed for use in freshwater injection for all basic water quality parameters, and will specifically monitor for chromium (total and hexavalent chromium), TDS, uranium, other radionuclides (including gross alpha), nitrate, arsenic, manganese, iron and sulfate and provide the data to the Water Board for review. Concentrations of all constituents in freshwater injected for plume control must either be 1) less than the applicable primary or secondary Maximum Contaminant Level or 2) if the concentrations of certain constituents at the injection point already exceed a Maximum Contaminant Level, then the injection water must have concentrations of the constituent equal to or less than that in the ambient groundwater at the injection point. Additionally, PG&E will identify to the Water Board the filtration or pretreatment necessary to meet the water quality levels described above. Once approved for use for freshwater injection, PG&E will sample the treated water at least twice per year to demonstrate that the water source is still acceptable for freshwater injection. If not acceptable, freshwater may need to draw from different area where water quality levels are met.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-2i: Taste and Odor Impacts due to Remedial Activities (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.8) identified as a significant impact that, the taste and/or odor of groundwater could be temporarily affected by the increased amount of biological reductants, such as carbon amendments, or other treatment byproducts from more intense application of in-situ treatment, compared to existing conditions. In most cases, carbon amendments such as ethanol or lactates should dissipate by anaerobic or aerobic microorganisms before reaching domestic water supply wells unless such wells are close to the injection point (experience to date indicates substantially elevated total organic carbon concentrations 400 to 800 feet downgradient of injection wells). The dissipation of added carbon to the groundwater will be monitored in wells surrounding the IRZ areas. Although unlikely, it is possible byproducts could migrate from the treatment zone and temporarily affect the taste or odor of groundwater.

Mitigation Measure WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown

This mitigation measure is described above.

Mitigation Measure WTR-MM-4: Restoration of the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses

This mitigation measure is described above.

Mitigation Measure WTR-MM-7: Construction and Operation of Additional Extraction Wells to Control Carbon Amendment In-situ Byproduct Plumes

This mitigation measure is described above.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-5: Secondary Impacts of Water Supply and Water Quality Mitigation Measures (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.1.10) identified the water quality mitigation measures (WTR-MM-1 to WTR-MM-8) could result in secondary significant impacts as summarized below.

Impact WTR-5a: Secondary Impacts of Water Right Purchase Mitigation (WTR-MM-1).

Mitigation Measure WTR-MM-1 (Purchase of Water Rights to Comply with Basin Adjudication) requires purchase of new water rights to comply with the Mojave Water Agency (MWA) basin adjudication requirements. If PG&E acquires unused allowances through outright purchase or yearly transfer, then this would not result in any displacement of other land uses in the Centro subarea. However, if PG&E were to acquire water allowances in that are in use, such as for current agricultural use, then the acquisition could result in abandonment or displacement of the current supported land use**.**

The Water Board will include the requirements of the following mitigation as conditions to the new CAO and/or associated WDRs:

Mitigation Measure LU-MM-2: Acquire Agricultural Conservation Easements for Important Farmland.

As identified in the Final EIR (Volume II, Section 3.2.7), PG&E will either avoid acquiring water rights from existing agricultural users or will acquire and record an agricultural easement over any important farmland (prime, unique, statewide importance) from which it acquires water rights for remedial purposes, so that the land can be returned to agricultural use at the point that the water allowance is no longer used for remedial purposes.

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-5b: Secondary Impacts of Water Supply Replacement Mitigation (WTR-MM-2).

Mitigation Measure WTR-MM-2 (Water Supply Program for Wells that are Affected by Remedial Activities) requires provision of alternative water supplies where remedial activities significantly affect domestic and agricultural water supply wells. This may include drilling of deeper wells, wellhead treatment systems, storage tanks and trucking of water, and/or creation of a water supply system with wells and pipelines. As described in the Final EIR (Volume II, Section 3.1.10), the construction of alternative water supplies could have physical effects on the environment and result in impacts related to land use, hazards and hazardous materials, air quality/greenhouse gas emissions, noise, biological resources, cultural resources, traffic, and aesthetics.

Mitigation Measures

The Water Board will include the requirements of mitigation in the new CAO and/or associated WDRs. As identified in the Final EIR (Volume II), the Water Board will require PG&E to implement relevant mitigation measures as identified in Sections 3.2.7, *Land Use, Agriculture, and Population, and Housing;* Section 3.3.7, *Hazards and Hazardous Materials;* Section 3.5.7, *Air Quality and Climate Change;* Section 3.6.7, *Noise*; Section 3.7.7, *Biological Resources;* Section 3.8.7, *Cultural Resources;* Section 3.10.7, *Transportation and Traffic;* and Section 3.11.7, *Aesthetics*, to reduce impacts to a less than significant level. These measures are listed in Table 1 and are described in subsequent sections below.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Table 1. Summary of Mitigation Measures For Secondary Impacts of Water Quality Mitigation

	WTR-5b	WTR-5d	WTR-5e	WTR-5f
	Water Supply Mitigation	**Agricultural Treatment Byproduct Mitigation**	**IRZ Byproduct Mitigation**	**Freshwater Injection Water Quality Control Mitigation**
3.1 Water Resources and Water Quality				
WTR-MM-1: Purchase of Water Rights to Comply with Basin Adjudication	X			X
WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown		X		
WTR-MM-2a: Mitigation Program for Water Supply Wells Affected by the Chromium Plume Expansion due to Remedial Activities		X		
WTR-MM-2b: Water Supply Program for Water Supply Wells Affected by Remedial Activity Byproducts		X		
WTR-MM-2c: Water Supply Program for Wells Affected by Groundwater Drawdown due to Remedial Activities				
WTR-MM-3: Incorporate Measures to Prevent, Reduce and Control Potential Temporary Localized Chromium Plume Bulging Into Overall Plume Control and Monitoring		X	X	
WTR-MM-4: Mitigation Program for Restoring the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses				
WTR-MM-5: Investigate and Monitor Total Dissolved Solids, Uranium, and Other Radionuclide Levels in relation to Agricultural Treatment and Take Contingency Actions				
WTR-MM-6: Monitor Nitrate Levels and Manage Agricultural Treatment to Avoid Significant Increases in Nitrate Levels and Provide Alternative Water Supplies As Needed				
WTR-MM-7: Construction and Operation of Additional Extraction Wells to Control Carbon Amendment In-situ Byproduct Plumes		X		
WTR-MM-8: Ensure Freshwater Injection Water Does Not Degrade Water Quality				
3.2 Land Use				
LU-MM-1: Obtain Bureau of Land Management Permits in Compliance with California Desert Conservation Area Plan and the West Mojave Plan	X	X	X	X
LU-MM-2: Acquire Agricultural Conservation Easements for any Important Farmland If Water Rights Are Acquired for Remediation	X	X		X

	WTR-5b	WTR-5d	WTR-5e	WTR-5f
	Water Supply Mitigation	**Agricultural Treatment Byproduct Mitigation**	**IRZ Byproduct Mitigation**	**Freshwater Injection Water Quality Control Mitigation**
3.3 Hazards and Hazardous Materials				
HAZ-MM-1: Implement Contingency Actions if Contaminated Soil is Encountered During Ground Disturbance	X	X	X	X
HAZ-MM-2: Implement Spill Prevention, Control, and Countermeasures Plan During Construction	X	X	X	X
HAZ-MM-3: Implement Building Materials Survey and Abatement Practices				
3.4 Geology and Soils				
GEO-MM-1: Land Subsidence Monitoring, Investigation, and Repair (Recommended only)				
GEO-MM-2: Emergency Response Plan for Potential Remedial Pipeline or Storage Tank Rupture		X	X	
3.5 Air Quality and Climate Change				
AIR-MM-1: Utilize Clean Diesel-Powered Equipment during Construction	X	X	X	X
AIR-MM-2: Ensure Fleet Modernization for On-Road Material Delivery and Haul Trucks during Construction	X	X	X	X
AIR-MM-3: Implement Emission-Reduction Measures during Construction	X	X	X	X
AIR-MM-4: Implement Dust Control Measures during Construction and Operations	X	X	X	X
AIR-MM-5: Utilize Clean Diesel-Powered Equipment for Operation of Agricultural Treatment (Alternative 4C-4 only)		X	X	
AIR-MM-6: Implement San Bernardino County GHG Construction Standards during Construction	X	X	X	X
AIR-MM-7: Implement San Bernardino County GHG Operational Standards for Operations	X	X	X	X
AIR-MM-8: Implement San Bernardino County GHG Design Standards	X	X	X	X
3.6 Noise				
NOI-MM-1: Prepare a Noise/Vibration Control Plan and Employ Noise/Vibration-Reducing Construction Practices to Comply with County Noise Standards	X	X	X	X
3.7 Biological Resources				
BIO-MM-1a: Implement Measures to Minimize, Reduce, or Mitigate Impacts on Desert Tortoise during Construction	X	X	X	X
BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats	X	X	X	X

	WTR-5b	WTR-5d	WTR-5e	WTR-5f
	Water Supply Mitigation	**Agricultural Treatment Byproduct Mitigation**	**IRZ Byproduct Mitigation**	**Freshwater Injection Water Quality Control Mitigation**
BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program	X	X	X	X
BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction	X	X	X	X
BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species	X	X	X	X
BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation	X	X	X	X
BIO-MM-1g: Reduction of Project-Related Spread of Invasive Plant Species	X	X	X	X
BIO-MM-1h: Compensate Impacts on Desert Tortoise and Mohave Ground Squirrel Habitat	X	X	X	X
BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units				
BIO-MM-1j: Reduction of Night Light Spillover	X	X	X	
BIO-MM-1k: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Mohave Ground Squirrel	X	X	X	X
BIO-MM-1l: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Burrowing Owl	X	X	X	X
BIO-MM-1m: Minimize Impacts on American Badger and Desert Kit Fox Occupied Dens	X	X	X	X
BIO-MM-1n: Avoid Impacts on Nesting Loggerhead Shrike, Northern Harrier, and Other Migratory Birds (including Raptors and excluding Burrowing Owls)	X	X	X	X
BIO-MM-1o: Implement Measures Required to Minimize, Reduce, or Mitigate Impacts on Special-Status Plants	X	X	X	X
BIO-MM-1p: If Remedial Actions Affect Mojave Fringe-toed Lizard Habitat, than Compensate for Habitat Losses	X	X	X	X
BIO-MM-2: Habitat Compensation for Loss of Sensitive Natural Communities	X	X	X	X
BIO-MM-3: Measures Required to Minimize, Reduce, or Mitigate Impacts on Waters and/or Wetlands under the Jurisdiction of the State	X	X	X	X
BIO-MM-4: Implement West Mojave Plan Measures to Impacts on DWMAs on BLM Land	X	X	X	X
3.8 Cultural Resources				
CUL-MM-1: Determine Presence of Historic Resources as Defined by CEQA	X	X	X	X
CUL-MM-2: Avoid Damage to Historic Resources Located in Project Areas through Project Modification	X	X	X	X

	WTR-5b	WTR-5d	WTR-5e	WTR-5f
	Water Supply Mitigation	**Agricultural Treatment Byproduct Mitigation**	**IRZ Byproduct Mitigation**	**Freshwater Injection Water Quality Control Mitigation**
CUL-MM-3: Record Historic Resources	X	X	X	X
CUL-MM-4: Conduct an Archaeological Resource Survey to Determine if Historical Resources under CEQA or Unique Archaeological Resources under Public Resources Code 21083.2 are Present in Proposed Areas of Disturbance	X	X	X	X
CUL-MM-5: Avoid Damaging Archaeological Resources through Redesign of Specific Project Elements or Project Modification	X	X	X	X
CUL-MM-6: Evaluate Archaeological Resources and, if Necessary, Develop and Implement a Recovery Plan	X	X	X	X
CUL-MM-7: Comply with State and County Procedures for the Treatment of Human Remains Discoveries	X	X	X	X
CUL-MM-8: Conduct Preconstruction Paleontological Resource Evaluation, Monitoring, Resource Recovery, and Curation	X	X	X	X
3.9 Utilities and Public Services				
No mitigation measures required				
3.10 Transportation and Traffic				
TRA-MM-1: Implement Traffic Control Measures during Construction	X	X	X	X
3.11 Aesthetics				
AES-MM-1: Screen Above-Ground Treatment Facilities from Surrounding Areas	X	X	X	X
AES-MM-2: Use Low-Sheen and Non-Reflective Surface Materials on Visible Remediation Facilities and Infrastructure	X	X	X	X
AES-MM-3: Apply Light Reduction Measures for Exterior Lighting	X	X	X	
3.12 Socioeconomics				
SE-MM-1: Manage Vacant Lands, Residences, and Structures to Avoid Physically Blighted Conditions				

[1] Applicable Remedial Action:

ALL – All remedial activities ATF – Above ground treatment facility AU – Agricultural (land) treatment units

FWI – Freshwater injection IRZ – In-situ reduction zones (below ground treatment) MON – Groundwater Monitoring

Impact WTR-5d: Secondary Impacts of Agricultural Treatment Byproduct Mitigation (WTR-MM-4, WTR-MM-5, WTR-MM-6)

Mitigation Measures WTR-MM-4, WTR-MM-5 and WTR-MM-6 require PG&E to address the water quality effects of agricultural treatment byproducts (TDS, nitrate, and potentially uranium and other radionuclides) through remedial flow management, direct water treatment, and/or basin-wide approaches. As described in the Final EIR (Volume II, Section 3.1.10), remedial flow management would not result in additional impacts of agricultural treatment beyond that disclosed elsewhere in the EIR, but there could be potential secondary effects from direct water treatment and/or basin-wide approaches. Direct water treatment of byproducts would be through the use of aboveground treatment or in-situ remediation. In-situ treatment impacts were analyzed in the EIR for analysis of all action alternatives, and aboveground treatment impacts were analyzed in the analysis of Alternatives 4C-3 and 4C-5. The impacts disclosed and mitigation identified for significant impacts are discussed through these findings, and no additional mitigation is required.

Basin-wide approaches would include "Farm Swap Method" (fallowing of other local agricultural fields to reduce TDS levels) and changing farm management practices (using better site management and techniques to lower TDS and nitrate inputs). Basin-wide approaches could result in impacts similar to that discussed elsewhere in the EIR for water quality, land use, hazards and hazardous materials, geology and soils, air quality/greenhouse gas emissions, noise, biological resources, cultural resources, traffic, and aesthetics. Impacts of basin-wide approaches can be summarized as followed based on the EIR analysis:

- **Water Quality and Hydrology:** While basin-wide approaches could lower overall loading of TDS and nitrate into the Hinkley groundwater aquifer, long-term use of agricultural treatment units for chromium treatment may still result in localized increases in TDS and nitrate. If basin-wide approaches are utilized, the Water Board will have to balance potential basin-wide improvements against localized impairments in deciding on WDR and CAO requirements. Fallowed agricultural land would also result in less groundwater pumping, which would likely increase overall groundwater levels in the aquifer as well as reduce TDS loading. Improved dairy management could lower both TDS and nitrate loading into the local aquifer. On a basin-wide scale, these methods could have an overall beneficial impact on the water quality and hydrology of the Hinkley aquifer.
- **Land Use:** The "farm swap" method could involve retiring existing agricultural fields. This could result in the conversion of agricultural land to non-agricultural use (including Farmland Mapping and Monitoring Program [FMMP]-Designated and Williamson Act Lands). Mitigation Measure LU-MM-2 (as modified in the final EIR) would require that PG&E place agricultural conservation easements over important farmland involved in a "farm swap" in the Mojave River basin to prevent the net loss of important farmland in the basin overall. Alternatively, PG&E could place an easement on local agricultural land in the project study area that could be removed after the land is no longer required to be fallowed to implement a basin-wide approach to remediating TDS or Nitrate.
- **Hazards and Hazardous Materials:** Basin-wide approaches may require the fallowing of fields and installation of new irrigation techniques, but no major hazardous materials are expected to be part of the implementation of these programs.

- **Geology and Soils:** Fallowing of agricultural fields, introduction of new irrigation techniques, crop rotation or improved dairy manure management are not expected to result in significant geology or soil impacts.
- **Air Quality/Greenhouse Gas Emissions:** Fallowing of fields and changes in farm or dairy practices are unlikely to result in increased air pollution or greenhouse gas emissions. Depending on methods used, improved manure management may actually reduce methane emissions (which is a greenhouse gas).
- **Noise:** Fallowing of fields and changes in farm practices may involve the use of heavy farm machinery, which would result in limited noise generation similar to existing conditions
- **Biological Resources:** Fallowing of agricultural land could increase its value for rare and common biological species during the period of fallowing. With the "farm swap" method, PG&E could have an opportunity to work with the California Department of Fish and Wildlife to restore fallowed farm land to biological species habitat, such as desert tortoise, which would result in a permanent beneficial impact on biological resources. However, dedication of any restrictive covenants on the retired land for the exclusive protection of species habitat could prevent the resumption of agricultural activities after completion of TDS/nitrate basin remediation. This could result in the loss of important farmland, which could conflict with the implementation of Mitigation Measure LU-MM-2 (see discussion above). In order to manage this potential conflict, Mitigation Measure LU-MM-2 was modified in the Final EIR to allow PG&E to place an agricultural conservation easement on important farmland in other locations outside the project study area, but within the Mojave River basin, to ensure no net loss of important farmland within the basin overall. Changes in farming or dairy practices should have limited to no adverse effects on biological resources.
- **Cultural Resources:** Land retirement or changes in existing agricultural practices should not disturb cultural resources as current agriculture lands have been previously disturbed.
- **Utilities and Public Services:** Land retirement or changes in existing agricultural practices will not disrupt existing utilities or create need for additional public services.
- **Traffic:** Fallowing existing agricultural land would lower traffic levels. Changes in farm practice change would likely not change existing traffic levels.
- **Aesthetics:** Fallowed lands may result in revegetation and restoration of habitat for biological species which would result in a change from an agricultural to a more native land condition. Hinkley is a mix of agricultural and undeveloped land; therefore, this would not result in a visual aesthetic inconsistent with the general local character, especially in light of continued agricultural landscapes with the agricultural treatment units and in continuing other agriculture unaffected by retiring. Changes in farm or dairy practices would not result in changes to visual aesthetics.
- **Physical Effects of Socioeconomic Changes:** The "farm swap" method could allow fallowing of other local agricultural fields without lowering the amount of locally available feed for local dairies, which are a key source of local jobs and economic activity. While fallowing some land would lower employment at that location with the addition of agricultural units, there would be an offset of agricultural employment. Working with dairies to change management practices may also help improve their regulatory compliance which could enhance their long-term viability and reduce their compliance costs, as some of the local dairies are presently under regulatory review by the Water

Board. As a result, the farm swap method should not have an adverse impact on socioeconomics that might contribute to physical blight.

Where significant impacts are identified, they are similar to that discussed elsewhere in the Final EIR, and all relevant project mitigation measures would also apply to these actions. Table 1 lists the mitigation measures applicable to direct treatment and basin-wide approaches if implemented. These measures are discussed throughout these findings.

Mitigation Measures

As identified in the Final EIR (Volume II, Sections 3.1.9 and 3.1.10, *Water Resources and Water Quality*), the Water Board will include the requirements in the new CAO and/or associated WDRs issued to PG&E to implement **Mitigation Measures WTR-MM-2, 2a, 2b, 3, and 7** as described above. Additionally, as identified in the Final EIR, Volume II, the Water Board will require PG&E to implement relevant mitigation measures as identified in Sections 3.2.7, *Land Use, Agriculture, and Population, and Housing;* Section 3.3.7, *Hazards and Hazardous Materials;* Section 3.4.7, *Geology and Soils*; Section 3.5.7, *Air Quality and Climate Change;* Section 3.6.7, *Noise*; Section 3.7.7, *Biological Resources;* Section 3.8.7, *Cultural Resources;* Section 3.10.7, *Transportation and Traffic;* and Section 3.11.7, *Aesthetics,* to reduce impacts to a less than significant level. These measures are listed in Table 1 and described in subsequent sections below.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-5e: Secondary Impacts of IRZ Remediation Byproduct Mitigation (WTR-MM-4 and WTR-MM-7).

Mitigation Measures WTR-MM-4 (Restoration of the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses) and WTR-MM-7 (Construction and Operation of Additional Extraction Wells to Control Carbon Amendment In-situ Byproduct Plumes) include remediation of IRZ byproducts (dissolved arsenic, iron, and manganese) as necessary to restore aquifer beneficial uses. Manganese and iron remediation actions could include extraction and capture of manganese-affected groundwater, aboveground aeration, and/or infiltration galleries, which can also be used to treat iron levels in groundwater. Arsenic remediation actions could include aboveground treatment using precipitation/coprecipitation, ion-exchange units, membrane filtration, or other means determined to be effective by the Water Board. This could result in construction-related impacts (from drilling, excavation and land disturbance for wells, piping and infiltration galleries) and operational impacts (related to energy use, increased pumping rates, injection, and percolation back into the aquifer) to water quality, land use, hazards and hazardous materials, geology and soils, air quality/greenhouse gas emissions, noise, biological resources, cultural resources, traffic, and aesthetics. These impacts are summarized as follows:

- **Water Quality**: Construction of new wells, piping and treatment facilities may result in minor erosion which has the potential for sedimentation of downstream water bodies. However,

compliance with San Bernardino County erosion control requirements and state/federal SWPPP requirements would keep this impact to a less than significant level. Disposal of any treatment by products would need to comply with all applicable disposal requirements. Relevant mitigation measures for construction and operation of wells, piping, and treatment facilities as described in this section above would be able to reduce impacts to less-than-significant level.

- **Land Use:** The construction of byproduct treatment facilities would be on existing domestic, agricultural, or remedial lands; therefore, it would not introduce incompatible uses or displace existing land uses due to the small area of these facilities relative to the surrounding area. With compliance with local land use regulations and requirements, it is expected that any such treatment facility would not result in significant land use impacts. Construction of wells and pipelines may temporarily disrupt land uses; but similar to wells and pipelines for remedial actions, this temporary disturbance is not considered significant. Relevant mitigation measures from Section 3.2, *Land Use, Agriculture, and Population, and Housing,* would also apply to construction of byproduct treatment facilities and would reduce impacts to a less-than-significant level.
- **Hazards and Hazardous Materials:** Construction of byproduct treatment facilities would include handling of slurry, bentonite and cement grout, backfill, PVC, silica sand, ion exchange resins, and other materials. Treatment facilities may also handle certain treatment chemicals and would generate wastes (such as ion exchange resin-adsorbed contaminants or sludge accumulation in aeration reaction basins) requiring disposal (such as regeneration water and spent resin containing high levels of arsenic or aeration reaction basin sludge removal). Application of all local, state, and federal regulations for handling and transport of hazardous materials will control the potential for exposure to hazardous materials and thus construction should result less than significant impacts. Relevant mitigation measures from Section 3.3, *Hazards and Hazardous Materials,* would also apply to construction of remediation facilities and would reduce impacts to a less-than-significant level.
- **Geology and Soils:** Ground-disturbing activities such as well, lysimeter, piping, wellhead treatment, aboveground treatment facility and infiltration gallery installations have the potential to result in increased soil erosion or loss of topsoil. However, compliance with San Bernardino County erosion control requirements and state/federal Stormwater Pollution Prevention Plan (SWPPP) requirements would keep this impact to a less than significant level. However, these areas would be minimal compared to the surrounding area, and soils would be replaced and re-stabilized post-construction. Relevant mitigation measures from Section 3.4, *Geology and Soils,* would also apply to construction and operation of byproduct treatment facilities and would reduce impacts to a less-than-significant level.
- **Air Quality/Greenhouse Gas Emissions:** Construction of new byproduct treatment facilities will result in construction emissions of criteria pollutants and greenhouse gases. During operations, pumping and aboveground treatment facilities will also result in electricity emissions. Where trucking of materials or generated wastes for disposal is required, trucking will result in gasoline and/or diesel emissions. Relevant mitigation measures from Section 3.5, *Air Quality and Climate Change,* would also apply to construction and operations of remediation facilities and would reduce impacts to a less than significant level.
- **Noise:** Construction of new byproduct treatment facilities will generate noise from equipment and vehicles similar to construction of remedial facilities. Operations of these facilities will have limited noise generation and would result in less than significant impacts. Relevant mitigation measures

from Section 3.6, *Noise*, would also apply to construction of byproduct treatment facilities and would be able to reduce impacts to a less-than-significant level.

- **Biological Resources:** Construction of new byproduct treatment facilities could disturb habitats and individual special status species, and sensitive vegetation communities. However, the footprint of potential facilities will likely be limited to several acres. Aboveground treatment facilities will likely have a footprint of 1 acre or less, and infiltration galleries for manganese and iron mitigation will likely have a footprint under 0.5 acre. Efforts will be made to locate the facilities in previously disturbed areas. Facilities will be designed to be constructed and operated without resulting in the temporary or permanent loss of threatened and endangered species habitat and the associated need for incidental take permits. However, biological resources surveys would be conducted in proposed areas prior to construction activities. If the construction of treatment facilities were found to result in the permanent and temporary destruction of habitat for species (such as desert tortoise and Mohave ground squirrel), appropriate "incidental take" permits would be obtained from the California Department of Fish and Wildlife and United States Fish and Wildlife Service. Relevant mitigation measures from Section 3.7, *Biological Resources*, would also apply to construction of remediation facilities and would reduce impacts to a less-than-significant level.
- **Cultural Resources:** Construction of new byproduct treatment facilities could disturb cultural and paleontological resource. Operations of byproduct treatment facilities should not disturb cultural resources unless new ground disturbance is necessary for system maintenance and would result in less than significant impacts. Relevant mitigation measures from Section 3.8, *Cultural Resources*, would also apply to byproduct treatment facilities and would reduce impacts to a less-than-significant level.
- **Utilities:** For the most part, construction of new byproduct treatment facilities will not disrupt existing utilities. In some cases, in particular for construction of new pipelines, there could be disturbance of existing utilities. However, local and state regulations require planning for and avoidance of disruption to existing utilities, and thus construction impacts will be less than significant. Operations of byproduct treatment facilities should not disrupt existing utilities or create need for additional public services.
- **Traffic:** Construction of new byproduct treatment facilities will generate traffic similar to construction of chromium remedial facilities. It is possible that construction might affect traffic safety or emergency access, but application of mitigation from Section 3.10, *Transportation and Traffic*, would reduce impacts to a less than significant level. Operations of wells, monitoring or byproduct treatment systems (including waste disposal) will generate minimal new traffic due to the need for maintenance. However, given the uncongested conditions on local roadways, such traffic is not considered to result in any significant traffic conditions.
- **Aesthetics:** Construction of new byproduct treatment facilities will temporarily disturb local aesthetic conditions due to construction noise, dust, and presence of equipment and vehicles. However, these impacts would be limited in scale and extent at any one location and thus less than significant. New aboveground treatment facilities could be anomalous in the rural context of Hinkley and thus would require aesthetic treatments to reduce their impact. Relevant mitigation measures from Section 3.11, *Aesthetics*, would also apply to new treatment facilities and would reduce impacts to a less-than-significant level.

- **Physical Effects of Socioeconomic Changes:** Construction of new byproduct treatment facilities would not be expected to require acquisition of property containing existing residents or other structures and thus would not have the potential for the creation of blighted conditions due to abandoned structures.

Mitigation Measures

As identified in the Final EIR (Volume II), the Water Board will require PG&E to implement relevant mitigation measures as identified in Sections 3.1.9, *Water Resources and Water Quality*, 3.2.7, *Land Use, Agriculture, and Population, and Housing;* Section 3.3.7, *Hazards and Hazardous Materials;* Section 3.4.7, *Geology and Soils*; Section 3.5.7, *Air Quality and Climate Change;* Section 3.6.7, *Noise*; Section 3.7.7, *Biological Resources;* Section 3.8.7, *Cultural Resources;* Section 3.10.7, *Transportation and Traffic;* and Section 3.11.7, *Aesthetics*, to reduce impacts to a less than significant level. These measures will be incorporated as conditions to the CAO and/or applicable WDRs and are summarized in Table 1 and described in this section above and in subsequent sections below.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact WTR-5f: Secondary Impacts of Freshwater Injection Water Quality Control (WTR-MM-8).

Mitigation Measure WTR-MM-8 (Ensure Freshwater Injection Water Does Not Degrade Water Quality) requires that if the current freshwater source is not acceptable for injection, water may be sourced from a different area where water quality levels are met, which could require additional wells and pipelines to be built. As described in the Final EIR (Volume II, Section 3.1.10), impacts associated with additional wells and pipelines that might be necessary are the same as those included in the analysis of chromium remediation alternatives for well and pipeline construction. These impacts can be summarized as follows:

- **Water Quality**: Construction of new wells, piping and treatment facilities may result in minor erosion which has the potential for sedimentation of downstream water bodies. However, compliance with San Bernardino County erosion control requirements and state/federal SWPPP requirements would keep this impact to a less than significant level. Disposal of any treatment byproducts would need to comply with all applicable disposal requirements. Relevant mitigation measures for construction and operation of wells, piping, and treatment facilities (as described in the section above) would be able to reduce impacts to less than significant level.
- **Land Use:** Construction of wells and pipelines may temporarily disrupt land uses, similar to wells and pipelines for remedial actions. In addition, water rights may have to be obtained for new water sources. Relevant mitigation measures from Section 3.2, *Land Use, Agriculture, and Population, and Housing,* would also apply to these new facilities and would reduce impacts to a less than significant level.
- **Hazards and Hazardous Materials:** Construction of new facilities could encounter contaminated soil. Spills of construction materials would also occur. Relevant mitigation measures from Section

3.3, *Hazards and Hazardous Materials,* would also apply to construction of new facilities and would reduce impacts to a less than significant level.

- **Geology and Soils:** Ground-disturbing activities have the potential to result in increased soil erosion or loss of topsoil. However, compliance with San Bernardino County erosion control requirements and state/federal SWPPP requirements would keep this impact to a less than significant level. Construction of new facilities should not result in any other significant impacts related to geology and soils.
- **Air Quality/Greenhouse Gas Emissions:** Construction of new byproduct treatment facilities will result in construction emissions of criteria pollutants and greenhouse gases. During operations, pumping will also result in electricity emissions. Where trucking is required, trucking will result in gasoline and/or diesel emissions. Relevant mitigation measures from Section 3.5, *Air Quality and Climate Change,* would also apply to construction and operations of new facilities and would reduce impacts to a less than significant level.
- **Noise:** Construction of new facilities will generate noise from equipment and vehicles similar to construction of remedial facilities. Operations of these facilities will have limited noise generation and would result in less than significant impacts. Relevant mitigation measures from Section 3.6, *Noise*, would also apply to construction of new facilities and would be able to reduce impacts to a less-than-significant level.
- **Biological Resources:** Construction of new facilities could disturb habitats and individual special status species, and sensitive vegetation communities. However, the footprint of potential facilities will likely be limited to several acres. Relevant mitigation measures from Section 3.7, *Biological Resources*, would also apply to construction of new facilities and would reduce impacts to a less-than-significant level.
- **Cultural Resources:** Construction of new facilities could disturb cultural and paleontological resources. Operations of new facilities should not disturb cultural resources, unless new ground disturbance is necessary for system maintenance, and would result in less than significant impacts. Relevant mitigation measures from Section 3.8, *Cultural Resources*, would also apply to new facilities and would reduce impacts to a less-than-significant level.
- **Utilities:** For the most part, construction of new facilities will not disrupt existing utilities; however in some cases, in particular for construction of new pipelines, there could be disturbance of existing utilities. However, local and state regulations require planning for and avoidance of disruption to existing utilities and thus construction impacts will be less than significant. Operations of new facilities should not disrupt existing utilities or create need for additional public services.
- **Traffic:** Construction of new facilities will generate traffic similar to construction of chromium remedial facilities. It is possible that construction might affect traffic safety or emergency access, but application of mitigation from Section 3.10, *Transportation and Traffic*, would reduce impacts to a less than significant level. Operations of new facilities will generate minimal new traffic due to the need for maintenance. However, given the uncongested conditions on local roadways, such traffic is not considered to result in any significant traffic conditions.
- **Aesthetics:** Construction of new facilities will temporarily disturb local aesthetic conditions due to construction noise, dust, and presence of equipment and vehicles, but these impacts would be limited in scale and extent at any one location and thus less than significant. New aboveground

treatment facilities could be anomalous in the rural context of Hinkley and thus would require aesthetic treatments to reduce their impact. Relevant mitigation measures from Section 3.11, *Aesthetics*, would also apply facilities and would reduce impacts to a less-than-significant level.

- **Physical Effects of Socioeconomic Changes:** Construction of new facilities would not be expected to require acquisition of property containing existing residents or other structures, and thus would not have the potential for the creation of blighted conditions due to abandoned structures.

Mitigation Measures

As identified in the Final EIR (Volume II, Sections 3.1.9 and 3.1.10, *Water Resources and Water Quality*), the Water Board will include the requirements in the new CAO and/or associated WDRs issued to PG&E to implement Mitigation Measures listed in Table 1 as appropriate.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.2 Land Use, Agriculture, Population and Housing

Impact LU-1c: Incompatibility with or Substantial Disruption of Surrounding Land Uses during Operations (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.2.6) identified as a significant impact that, the project would result in groundwater drawdown due to agricultural treatment pumping that could disrupt domestic water supply and agricultural wells, and the loss of water supply could substantially disrupt adjacent residential, commercial or agricultural land uses. Also, agricultural treatment and in-situ treatment could generate remedial byproducts that could affect the water quality for certain domestic, commercial, or agricultural wells, which could also substantially disrupt adjacent land uses.

Mitigation Measures

As identified in the Final EIR (Volume II, Sections 3.1.9 and 3.1.10), the Water Board will include the following mitigation measure in the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown

This mitigation measure is described above.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated

into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact LU-1e: Potential Inconsistency with the California Desert Conservation Plan and/or the West Mojave Plan (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.2.6) identified as a significant impact that, the project would result in potential conflicts with the land management requirements of the California Desert Conservation (CDCA) Plan and/or with the conservation requirements of the West Mojave Plan from future remedial actions (likely monitoring wells, extraction wells, piping and access roads) on U.S. Bureau of Land Management (BLM) lands.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure LU-MM-1: Obtain Bureau of Land Management Permits

As identified in the Final EIR (Volume II, Section 3.2.7, *Land Use, Agriculture, Population and Housing*), PG&E will obtain any required approvals from BLM for any proposed remedial activities on federal land. PG&E will provide copies of BLM submittals and approvals to the Water Board to keep them informed of any proposed remedial activities on federal land.

Mitigation Measure BIO-MM-1a to BIO-MM-1p, and BIO-MM-4

These mitigation measures are described below under "Biological Resources" below.

Finding

The Water Board finds that such mitigation measures (BIO-MM-1a to BIO-MM-1p) are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)] In addition, the Water Board finds that such mitigation measures (BIO-MM-4, LU-MM-1) are within the responsibility and jurisdiction of another public agency (BLM, who issues the BLM permits and oversees implementation of the West Mojave Plan) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

Impact LU-2: Conversion of Agricultural Land to Non-Agricultural Use, Including FMMP-Designated Williamson Act Lands (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.2.6) identified as a significant impact that, the project could indirectly result in disruption of agricultural use (possibly on FMMP-Designated Williamson Act Lands) due to groundwater drawdown or changes in water quality from remedial activities.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure LU-MM-2: Acquire Agricultural Conservation Easements for Important Farmland

This mitigation measure is described above**.**

Mitigation Measure WTR-MM-2: Mitigation Program for Water Supply Wells Affected by Remedial Activities, including Impacts Due to Chromium Plume Expansion, Remediation Byproducts and Groundwater Drawdown

This mitigation measure is described above.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.3 Hazards and Hazardous Materials

Impact HAZ-1a: Potential to Encounter Hazardous Materials in Soil and Groundwater during Construction (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.3.6) identified as a significant impact that, the project would require ground disturbance that has the potential to result in exposure to hazardous materials that currently exist in soils, as well as chromium in groundwater in the source area. Given the long history of rural residential and agricultural use, along with roadways, railroads and other uses, there may be areas of petroleum or other contaminants present in soils. In addition, ground disturbance and extraction of contaminated groundwater in the chromium plume source area could have the potential to encounter chromium at hazardous waste concentrations.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure HAZ-MM-1: Implement Contingency Actions if Contaminated Soil is Encountered During Ground Disturbance

As identified in the Final EIR (Volume II, Section 3.3.7), PG&E will work with an experienced and qualified Professional Engineer or Professional Geologist (PE/PG), who will be available for consultation during soil excavation and grading activities. If potentially contaminated soil is unearthed during excavation as evidenced by discoloration, odor, detection by handheld

instruments, or other signs, the PE/PG will inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and to the Water Board stating the recommended course of action. The PE/PG will have the authority to temporarily suspend further activity at that location for the protection of workers or the public.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact HAZ-1b: Potential Releases of Hazardous Materials or Waste Used or Generated from Construction Activities and during Remedial Operations (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.3.6) identified as a significant impact that, the project would result in potential accidental release of fuel, oils, grease, solvents and other petroleum-based products commonly used in construction, which could contaminate soils, degrade water quality, and expose humans to these chemicals. Project operation (remedial activities) would require storage, use, treatment, and transport of hazardous materials to and from project sites.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure HAZ-MM-2: Implement Spill Prevention, Control, Countermeasures Plan During Construction

As identified in the Final EIR (Volume II, Section 3.3.7), PG&E will prepare a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) or equivalent, if required by the San Bernardino County Fire Department, prior to commencement of construction activities, to prevent accidental spills and contain spills of hazardous substances that might occur.

Mitigation Measure WTR-MM-5: Investigate and Monitor Total Dissolved Solids, Uranium and Other Radionuclide Levels in Relation to Agricultural Treatment and Take Contingency Actions

This mitigation measure is described above.

Finding

The Water Board finds that such a mitigation measure (WTR-MM-5) is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)] In addition, the Water Board finds that such a mitigation measure (HAZ-MM-2) is feasible and partially within the responsibility and

jurisdiction of another public agency (San Bernardino County Fire Department, who requires and approves the SPCC Plan or equivalent) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

Impact HAZ-1c: Exposure to Hazardous Building Materials during Demolition (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.3.6) identified as a significant impact that, the project would cause potential exposure to hazardous materials, such as lead-based paint and asbestos, if structural demolition is required to construct new wells, agricultural treatment units or above-ground treatment facilities.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure HAZ-MM-3: Implement Building Materials Survey and Abatement Practices

As identified in the Final EIR (Volume II, Section 3.3.7), PG&E will retain a registered environmental assessor or a California-registered professional engineer to perform a hazardous building materials survey prior to demolition or modification activities. If any asbestos-containing materials, lead-containing materials, or hazardous components of building materials are identified, adequate abatement practices, such as containment and/or removal, will be implemented prior to demolition or renovation. Any components containing PCBs, di (2-ethylhexyl) phthalate (DEHP), or mercury will also be removed and disposed of properly.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.4 Geology and Soils

Impact GEO-2b: Increase Risk of Human Exposure due to Seismic Activity (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.4.6) identified as a significant impact that the project would increase the risk of human exposure to seismic activity because there would be additional workers in areas near active faults during construction and operation of remediation facilities. There could be short-term human exposure to volatile chemicals if above-ground chemical (e.g., ethanol) storage tank ruptures from seismic activity.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure GEO-MM-2: Emergency Response Plan for Potential Remedial Pipeline or Storage Tank Rupture

As identified in the Final EIR (Volume II, Section 3.4.7), PG&E will prepare a section in the treatment system operation and maintenance (O&M) manual and/or Health and Safety Plan (HASP) that describes the specific procedures to be followed in a major seismic event, including: shut-down of remedial pumping; visual inspection of project pipelines and above-ground tanks to determine if any leakage has occurred; spill containment and recovery procedures for any chemicals that may have spilled; and pressure test of project pipelines or above-ground storage tanks to determine integrity prior to resuming system operation.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.5 Air Quality and Climate Change

Impact AIR-1b: Exceed MDAQMD Threshold Levels for Criteria Pollutants during Project Construction (Less than Significant with Mitigation, Alternatives 4C-3 and 4C-5 only)

The Final EIR (Volume II, Section 3.5.6) identified as a significant impact that under Alternative 4C-3 or Alternative 4C-5 the project would result in construction-related emissions and dust from construction vehicles/equipment and fugitive dust from ground disturbance. Under Alternatives 4C-3 and 4C-5, the emissions for NO_x would be above the Mojave Desert Air Quality Management District (MDAQMD) threshold of significance. All of the alternatives must comply with MDAQMD Rule 403 for dust control and would therefore all of them have less than significant dust emissions.

Mitigation Measures

The Water Board will include the following mitigation measures as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AIR-MM-1: Utilize Clean Diesel-Powered Construction Equipment during Construction

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or their contractor will ensure that all off-road diesel-powered equipment used during construction will be equipped with an EPA Tier 4 Final or cleaner engine, except for specialized construction equipment in which an EPA Tier 4 engine is not available, to achieve the required emission reductions.

Mitigation Measure AIR-MM-2: Ensure Fleet Modernization for On-Road Material Delivery and Haul Trucks during Construction

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will ensure that all on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating (GVWR) 19,500 pounds or greater, including those for all material deliveries and soil hauling, will comply with EPA 2007 on-road emission standards for PM 10 microns in diameter or less (PM10) and nitrogen oxide (NO_X) (0.01 grams per brake horsepower-hour [g/bhp-hr] and 0.20 g/bhp-hr, respectively).

Mitigation Measure AIR-MM-3: Implement Emission-Reduction Measures during Construction

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will include the following emission-reducing measures in the construction specifications to ensure implementation during construction: Haul and delivery truck idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to less than 3 minutes (greater than that required by the California airborne toxics control measure, 13 California Code of Regulations [CCR] 2485). Clear signage will be provided for construction workers at all access points. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Mitigation Measure AIR-MM-4: Implement Dust Control Measures during Construction and Operations

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will include MDAQMD-required dust control measures per MDAQMD Rule 403.2 in the construction specifications to ensure implementation during construction and in the Operations & Maintenance manual to ensure implementation during operation. Additionally, for projects disturbing more than 100 acres per day, PG&E will prepare a dust control plan that describes all applicable dust control measures that will be implemented at the project for MDAQMD approval. With respect to the proposed project, it was assumed that specific dust control measures would include limiting travel speeds to 15 miles per hour on unpaved roads, watering exposed surfaces three times daily, and applying soil stabilizers to inactive areas.

Finding

The Water Board finds that such mitigation measures (AIR-MM-1, AIR-MM-2, AIR-MM-3) are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)] In addition, the Water Board finds that such a mitigation measure (AIR-MM-4) is within the responsibility and jurisdiction of another public agency (MDAQMD, who requires and approves the dust control plan) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

Impact AIR-2a: Expose Nearby Receptors to Increased Health Risk Associated with Toxic Air Contaminants during Construction (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.5.6) identified as a significant impact that, the project would expose sensitive receptors (residences, schools) to diesel exhaust which has toxic air contaminates from construction equipment and vehicles.

Mitigation Measure

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AIR-MM-1: Utilize Clean Diesel-Powered Construction Equipment during Construction

This mitigation measure is described above.

Mitigation Measure AIR-MM-2: Ensure Fleet Modernization for On-Road Material Delivery and Haul Trucks during Construction

This mitigation measure is described above.

Mitigation Measure AIR-MM-3: Implement Emission-Reduction Measures during Construction

This mitigation measure is described above.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact AIR-2b: Expose Nearby Receptors to Increased Health Risk Associated with Toxic Air Contaminants from Operations (Less than Significant with Mitigation, Alternative 4C-4 only)

The Final EIR (Volume II, Section 3.5.6) identified as a significant impact that under Alternative 4C-4 the project would expose sensitive receptors (residences, schools) to increased health risk associated with toxic air contaminants from diesel emissions associated with diesel-powered equipment used for agricultural treatment.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AIR-MM-5: Utilize Clean Diesel-Powered Equipment for Operation of Agricultural Treatment and Above-Ground Treatment Facilities

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will ensure that all off-road diesel-powered equipment used during operations of the above-ground treatment facility and agricultural land treatment will be equipped with an EPA Tier 4 Interim or Final or cleaner engine, except for specialized construction equipment in which an EPA Tier 4 engine is not available. This will be included in the construction specifications.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact AIR-4a: Generate GHG Emissions, Either Directly or Indirectly, that May Have a Significant Impact on the Environment or Conflict with the Goals of AB 32 (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.5.6) identified as a significant impact that, the project would result in increased greenhouse gas (GHG) emissions during construction and operation. Construction-related emissions would be from fuel combustion in construction equipment and vehicles. Operational emissions would be from periodic agricultural plowing and harvesting, daily worker commutes, material delivery vehicles and electricity consumption.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AIR-MM-6: Implement San Bernardino County GHG Construction Standards during Construction

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will submit a signed letter to San Bernardino County and the Water Board agreeing to include as a condition of all construction contracts/subcontracts the County requirements for reducing GHG emissions and submit documentation of results. PG&E or its contractor will submit for review and obtain approval from County Planning of evidence that all applicable GHG performance standards have been installed and implemented properly, and that specified performance objectives are being met to the satisfaction of the County.

Mitigation Measure AIR-MM-7: Implement San Bernardino County GHG Operational Standards for Operations

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E or its contractor will implement the San Bernardino County GHG Operational Standards for waste stream reduction, landscape equipment, and biodiesel fuel. PG&E will submit for review and obtain approval from the San

Bernardino County Planning Department of evidence that all applicable GHG performance standards are being employed, and that specified performance objectives are being met to the satisfaction of the County.

Mitigation Measure AIR-MM-8: Implement San Bernardino County GHG Design Standards (Alternatives 4C-3 and 4C-5 only)

As identified in the Final EIR (Volume II, Section 3.5.7), PG&E will submit for review and obtain approval from County Planning that the County's GHG Design Standards for Title 24 energy efficiency, plumbing, lighting, building design, landscaping, irrigation and recycling have been incorporated into the design of the project, as applicable. These are intended to reduce potential project GHGs emissions. Proper installation of the approved design features and equipment will be confirmed by County Building and Safety prior to final inspection of each structure.

Finding

The Water Board finds that such mitigation measures are feasible; however, these mitigation measures are within the responsibility and jurisdiction of another public agency (San Bernardino County, who requires and approves GHG performance standards) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

1.2.6 Noise

Impact NOI-1a: Exposure of Noise-Sensitive Land Uses to Excessive Construction Noise (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.6.6) identified as a significant impact that, the project would expose noise-sensitive land uses to excessive construction noise, particularly well drilling and above-ground treatment facility construction.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure NOI-MM-1: Prepare a Noise/Vibration Control Plan and Employ Noise/Vibration-Reducing Construction Practices to Comply with County Noise Standards

As identified in the Final EIR (Volume II, Section 3.6.7), PG&E or its contractor will ensure that noise/vibration-reducing construction practices are implemented so that construction noise does not exceed applicable County standards. As part of the construction specifications, the project contractor will identify feasible measures that can be employed to reduce construction noise/vibration. These may include: conducting noise-generating/vibration activity during daytime hours, using equipment with factory-installed mufflers, locating equipment far from residences, using temporary barriers.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact NOI-1b: Exposure of Noise-Sensitive Land Uses to Excessive Ground Vibration from Construction Activities (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.6.6) identified as a significant impact that, the project would potentially expose noise-sensitive land uses to excessive vibration in excess of County standards. This could occur if PG&E needs to install monitoring wells in close proximity to residences.

Mitigation Measure NOI-MM-1: Prepare a Noise/Vibration Control Plan and Employ Noise/Vibration-Reducing Construction Practices to Comply with County Noise Standards

This mitigation measure is described above.

Finding

The Water Board finds that such a mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.7 Biological Resources

Impact BIO-1a: Disturbance, Mortality, and Loss of Habitat for Desert Tortoise (Less than Significant with Mitigation, All Alternatives; Significant and Unavoidable only for desert tortoise movement impact, All Action Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would remove habitat that supports the federally protected desert tortoise. Desert tortoise habitat is distributed throughout the project area. Both construction-related and operations and maintenance activities could result in the loss of desert tortoise individuals and removal of desert tortoise habitat. Specifically, these impacts to desert tortoise could occur to potentially occupied burrows as a result of collision, crushing, entrapment, and removal of habitat due to human activities during project implementation.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1a: Implement Measures Required to Minimize, Reduce, or Mitigate Impacts on Desert Tortoise during Construction

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will implement specific measures to reduce construction impacts to the desert tortoise in a manner consistent with any incidental

take authorization issued by California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS). Measures include: protocol-level survey prior to construction; preconstruction clearance survey; allowing found desert tortoise to move passively away or be physically relocated by an authorized handler; exclusion fencing around work areas; submit report of all sightings and annual report to USFWS and CDFW; and construction monitoring.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E with an authorized biologist or environmental monitor will confine the area of disturbance to the smallest practical area, considering topography, placement of facilities, location of occupied desert tortoise, Mohave ground squirrel, and burrowing owl habitat, public health and safety, and other limiting factors, and will locate the area of disturbance to previously disturbed areas to the extent possible. In areas where exclusionary fencing can be installed, PG&E will delineate work area boundaries and access roads with flagging or other marking to minimize surface disturbance outside of the approved work area. Special habitat features, such as burrows, identified by the Authorized Biologist will be avoided to the extent possible.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure all employees, subcontractors, and others who work on-site participate in a desert tortoise, Mohave ground squirrel, burrowing owl, American badger, Mojave River vole, desert kit fox, and sensitive plant species awareness program prior to initiation of construction activities. At a minimum, the awareness program will emphasize: distribution on the job site, general behavior and ecology, sensitivity to human activities, legal protection, penalties for violating State or federal laws, reporting requirements, and project protective mitigation measures.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure approved biological monitors approved conduct daily construction monitoring of the desert tortoise exclusion fencing, as well as during clearing and grubbing (initial ground disturbance) of the work area. Biological monitors will be familiar with desert tortoise, Mohave ground squirrel, and burrowing owl, as well as nesting birds. Once clearing and grubbing is complete, a biological monitor will conduct, at minimum, weekly spot checks to document compliance with the mitigation measures presented in this EIR and elsewhere. An on-call desert tortoise handler will be available should desert tortoise be encountered during construction activities.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure no hazards to special-status species, particularly desert tortoise, such as open trenches and holes, will be left overnight without fencing or covering. PG&E will ensure no firearms or pets will be allowed at

the work area (except firearms carried by authorized security and law enforcement personnel). PG&E will ensure dust is controlled and speed limits do not exceed 10 mph on unpaved roads through desert tortoise and Mohave ground squirrel habitat. If water trucks are to be used, pooling of water will be avoided so to minimize the potential to attracting common ravens or potential predators of the desert tortoise.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure litter control measures are implemented, water trucks don't pool water, potential perches and nest substrates for the common raven are reduced to the greatest extent practicable within permanent project facilities, and a raven management plan will be developed. The plan will include establishing a common raven population pre-remedial reference level, ongoing and post-construction monitoring of common raven populations, and triggers for adaptive management actions if ravens are occurring above pre-remedial conditions and observed to be utilizing facilities and structures built as part of this project.

Mitigation Measure BIO-MM-1g: Reduction of Project-Related Spread of Invasive Plant Species

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that if reseeding of temporary disturbance areas or ornamental landscaping is proposed, the proposed seed palette will be reviewed by a biologist to ensure it does not contain plants that are considered invasive in California (based on the California Invasive Plant Inventory Database).

Mitigation Measure BIO-MM-1h: Compensate Impacts on Desert Tortoise and Mohave Ground Squirrel Habitat

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will determine compensatory mitigation for the loss of desert tortoise and Mohave ground squirrel habitat through consultation with CDFW and USFWS. The minimum compensation ratios are 3:1 for moderate to high quality habitat, 1:1 for low quality habitat, and 5:1 for impacts within a Desert Wildlife Management Area (DWMA). Final mitigation ratios and specifications will be determined during consultation with the appropriate resource agency, in accordance with the requirements of a Section 7 or Section 10 permit and/or a Section 2081 permit.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will develop and implement an agricultural unit integrated pest management (IPM) plan for all new (and existing) agricultural units, and will be compliant with the California Statewide IPM year-round program for alfalfa and any other crops that may be proposed for use. The IPM will include restricting the use of herbicides, pesticides, or rodenticides to only new agricultural units if specifically authorized by USFWS and CDFW in the take permits for the desert tortoise and the Mohave ground squirrel. The adaptive management plan will detail the predicted harvest of the agricultural crops and how harvest will be conducted in such a manner to reduce potential impacts to nesting birds,

provide other population monitoring guidelines for predatory species, and outline irrigation control to avoid pooled water.

Mitigation Measure BIO-MM-1j: Reduction of Night Light Spillover

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that exterior light fixtures and standards are designed to be fully shielded, directing light downward below the horizontal plane of the fixture height. A detailed lighting plan will be inspected by a biologist to ensure that the expected light spillover has no potential to impact special-status species.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

However, the adopted mitigation may not reduce the impact on desert tortoise movement to a less than significant level. In order to implement agricultural treatment at a scale necessary to address the diffuse low-concentration chromium plume, there will be a need for extensive new areas of agricultural treatment fields. The Water Board considered whether there would be feasible ways to maintain potential tortoise movement corridors through the areas of new agricultural treatment, and found this was not feasible without large separations between agricultural treatment fields (on the order of a mile or more separation). Separating the agricultural treatment fields would disperse the areas of converted habitat all over the HInkley Valley, instead of clustering them to the extent feasible. This would have the effect of fragmenting large areas of tortoise habitat, which would have a greater adverse effect on the tortoise compared to a more clustered approach to agricultural treatment units, even taking into account some hindrance of tortoise movement in the southern part of Hinkley Valley. As discussed elsewhere, the replacement of agricultural treatment with aboveground treatment for remediation of the diffuse low concentration plume is not considered to be more effective than agricultural treatment and is highly cost-ineffective, limiting its application on a sufficient scale for the long-term. Therefore, this impact may still be significant with the adopted mitigation. The Water Board finds that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(3)]

Impact BIO-1b: Disturbance, Mortality, and Loss of Habitat for Mojave Ground Squirrel (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would potentially infringe on low and moderate to high quality Mohave ground squirrel habitat throughout the entire project area. Mohave ground squirrels are known to inhabit areas near agricultural fields to feed on crops such as alfalfa, which poses a significant adverse risk of loss of individuals and habitat since they construct and use burrows for shelter, which could be removed during land clearing activities. Establishment of new agricultural treatment units may also attract Mohave ground squirrel to a new

food source, increasing the risk of adverse impacts from collision, crushing, and entrapment due to human activities from project implementation.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

This mitigation measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This mitigation measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This mitigation measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

This mitigation measure is described above.

Mitigation Measure BIO-MM-1g: Reduction of Project-Related Spread of Invasive Plant Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1h: Compensate Impacts on Desert Tortoise and Mohave Ground Squirrel Habitat

This mitigation measure is described above.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

This mitigation measure is described above.

Mitigation Measure BIO-MM-1j: Reduction of Night Light Spillover

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that exterior light fixtures and standards are designed to be fully shielded, directing light downward below the horizontal plane of the fixture height. A detailed lighting plan will be inspected by a biologist to ensure that the expected light spillover has no potential to impact special-status species.

Mitigation Measure BIO-MM-1k: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Mohave Ground Squirrel

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that a Mohave ground squirrel focused protocol survey will be completed prior to construction in the project study area where construction is proposed. For habitat loss of greater than 180 acres, the CDFW requires special survey protocol(s) to be developed through its consultation with either the project proponent or the local lead agency (if appropriate) or both entities. If any Mohave ground squirrels are uncovered or are injured or killed during the course of construction, work must stop in the immediate area and the project biologist will be immediately notified. Only the authorized biologist will handle, and transport injured animal to a qualified veterinarian.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-1c: Disturbance, Mortality, and Loss of Habitat for Burrowing Owl and American Badger, and Mortality of Desert Kit Fox (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would have the potential to infringe on low and moderate to high quality habitat of these species throughout the entire project area. Burrowing owls are known to inhabit active and non-active agricultural lands, have moderate to high potential to occur within the project area, and have been recorded in recent field observations within the central agricultural treatment areas. Agriculture treatment-related activities such as land clearing for crop planting, routine mowing, harvesting, and herbicide/pesticide use may result in potential direct and indirect permanent loss of burrowing owls and their supporting habitat. This impact would be similar for the American badger and kit fox, which also were determined to have moderate to high potential to occur within the project area.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

This mitigation measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This mitigation measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This mitigation measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

This mitigation measure is described above.

Mitigation Measure BIO-MM-1j: Reduction of Night Light Spillover

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that exterior light fixtures and standards are designed to be fully shielded, directing light downward below the horizontal plane of the fixture height. A detailed lighting plan will be inspected by a biologist to ensure that the expected light spillover has no potential to impact special-status species.

Mitigation Measure BIO-MM-1l: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Burrowing Owl

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure a qualified biologist conducts a focused nesting season survey for burrowing owl using the most recent CDFW protocol in all potential disturbance limits, and establishes a minimum 400 feet buffer area prior to construction. PG&E will also ensure preconstruction survey is conducted within 14 days and within 24 hours prior to commencing ground disturbing or construction activities. The limits of this preconstruction survey will include the disturbance area and a 400-foot buffer. Occupied burrows will not be disturbed during the nesting period (February 1–August 31) unless it is verified that the birds have not begun egg-laying, and during the non-breeding season (September 1–January 31) if migratory or non-migratory resident burrowing owls are present. Additionally, PG&E will develop an avian protection plan with CDFW to address burrowing owls if found on site during the focused nesting or preconstruction surveys. The plan will include protection measures. Passive relocation will be avoided to the greatest extent possible.

Mitigation Measure BIO-MM-1m: Minimize Impacts on American Badger and Desert Kit Fox Occupied Dens

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that if there is evidence that a burrow may be occupied by a badger or a kit fox during preconstruction, all construction activities will cease within a 100-foot buffer of the burrow during the natal season (February–

July) unless otherwise authorized by CDFW. Removal of an occupied American badger or desert kit fox burrow at any time of the year will require coordination with CDFW.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-1d: Disturbance, Mortality, and Loss to Loggerhead Shrike and Northern Harrier (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would potentially infringe on and/or remove loggerhead shrike and northern harrier habitat because the majority of the project area is foraging and nesting habitat. Additionally, new agricultural treatment units could attract brown-headed cowbirds which could threaten successful breeding of loggerhead shrike and other breeding birds, because cowbirds will place their eggs in the nests of other birds (this is known as cowbird parasitism).

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

This mitigation measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This mitigation measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This mitigation measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

This mitigation measure is described above.

Mitigation Measure BIO-MM-1i

This measure is described above.

Mitigation Measure BIO-MM-1n: Avoid Impacts on Nesting Loggerhead Shrike, Northern Harrier, and Other Migratory Birds (including Raptors and excluding Burrowing Owls)

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure impacts to bird nests will be avoided pursuant to the federal Migratory Bird Treaty Act and CDFW code. During the nesting season (February 1–August 31), a qualified biologist will conduct a preconstruction survey of the proposed construction site and 250 foot buffer area around the site no more than 7 days prior to the onset of construction (clearing and grubbing and initial ground disturbance). If a nest is observed, an appropriate buffer will be established (50 feet for passerine birds, 250 feet for raptors, or other with approval by CDFW). All no-construction activity buffer areas will be clearly demarcated in the field with stakes and flagging that are visibility to construction personnel.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-1f: Mortality and Loss of Habitat for Mojave Fringe-Toed Lizard (Less than Significant, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a less than significant impact that the project would potentially result in loss of habitat or mortality to Mojave fringe-toed lizard individuals that could inhabit the California joint fir scrub and desert dunes plant communities where there are two existing freshwater wells and new wells and pipelines could be installed in this area to provide alternative water supplies, as well as desert dunes habitat in the northeastern part of the project area.

Mitigation Measures

In order to ensure that future wells and pipelines would not result in a significant effect, the Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

This mitigation measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This mitigation measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This mitigation measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

This mitigation measure is described above.

Mitigation Measure BIO-MM-1g: Reduction of Project-Related Spread of Invasive Plant Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1p: If Remedial Actions Affect Mojave Fringe-toed Lizard Habitat, than Compensate for Habitat Losses

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will consult with CDFW to determine if compensatory mitigation is required for the loss of Mojave fringe-toed lizard habitat. The minimum compensation ratio for Mojave fringe-toed lizard habitat will be 3:1.

Mitigation Measure BIO-MM-2: Habitat Compensation for Loss of Sensitive Natural Communities

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that avoidance of California joint fir scrub, desert dune habitat and dune land soils is the first priority, and encroachment shall only occur if the Lahontan Water Board, USFWS, and CDFW all concur that complete avoidance is infeasible. If new remediation activities result in the permanent removal and loss of sensitive natural communities such as the California joint fir scrub and desert dunes habitat and dune land soils, a compensatory mitigation program or plan will be developed and implemented through consultation with the USFWS, CDFW, and the Lahontan Water Board. Compensatory mitigation may include a fee-based program and/or direct habitat replacement on a minimum 1:1 basis, in accordance with agency recommendations.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-1g: Loss of Other Special-Status Birds (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would cause loss of special-status birds including raptors, who could forage and nest in the project area, if remediation facilities expand into or modify their habitat.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

This impact is described above.

Mitigation Measure BIO-MM-1n: Avoid Impacts on Nesting Loggerhead Shrike, Northern Harrier, and Other Migratory Birds (including Raptors and excluding Burrowing Owls)

This impact is described above.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-1h: Loss of Individual Plants or Disturbance to Special-Status Plants (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would cause permanent loss of special-status plants from construction-related ground disturbance, when installing new remediation facilities in the areas where allscale scrub habitat and where creosote bush scrub habitat occurs.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1g: Reduction of Project-Related Spread of Invasive Plant Species

This mitigation measure is described above.

Mitigation Measure BIO-MM-1o: Reduction of Project-Related Spread of Invasive Plant Species

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will confirm the presence/absence and quantify special-status plant species populations prior to construction, by hiring a qualified biologist to conduct special-status plant surveys within 100 feet of construction activities in allscale, creosote scrub, desert dune, and Mojave River wash habitats. If listed plants are found, the population will be clearly demarcated by protective fencing, lath stakes, or flagging. The CDFW and/or USFWS will be consulted if there's any disturbance to those species. A biological monitor will conduct a tailgate information session.

Finding

The Water Board finds that such mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact BIO-2: Reduction or Loss of Function of Riparian Habitat or Sensitive Natural Communities (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would cause potential loss of California joint fir scrub and desert dunes habitats, both sensitive natural communities listed by CDFW, if new wells and pipelines are installed for alternative water supplies to domestic and agricultural wells.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-2: Habitat Compensation for Loss of Sensitive Natural Communities

This measure is described above.

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]]

Impact BIO-3: Loss or Disturbance of Federal and/or State Jurisdictional Waters Including Wetlands (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project could result in erosion and sedimentation into downgradient surface drainages that are regulated waters, adversely affecting jurisdictional waters and any wildlife species present.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRS issued to PG&E.

Mitigation Measure BIO-MM-3: Measures Required to Minimize, Reduce, or Mitigate Impacts on Waters and/or Wetlands under the Jurisdiction of the State

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E will ensure that construction activities and access roads will be avoided in all drainages, streams, dry lake beds, pools, or other features that could be under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Lahontan Water Board, and/or CDFW, if feasible. If impacts to USACE, Regional Water Quality Control Board (RWQCB), and/or CDFW jurisdiction waters or wetlands are identified, the project applicant will comply with the permitting requirements imposed by USACE, Lahontan Water Board, and/or CDFW, as appropriate. Remedial actions shall avoid encroachment on the Harper Lake playa itself to the maximum extent feasible. If encroachment is necessary, PG&E shall demonstrate the rationale why encroachment is unavoidable to the Water Board and CDFW. If the Water Board and CDFW determine that the encroachment is necessary, PG&E shall mitigate for all temporary or permanent disturbance on a minimum 3:1 ratio (3 acres mitigation to 1 acre impact).

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it; however, this mitigation measure is partially within the responsibility and jurisdiction of another public agency (USACE and CDFW who have jurisdiction over waters and/or wetlands of the state) as well as the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

Impact BIO-4: Conflicts with Wildlife Movement (Less than Significant with Mitigation, All Action Alternatives; Significant and Unavoidable for desert tortoise only)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project would potentially change desert tortoise movement through areas where new agricultural units are located. The project is not expected to significantly affect the movement of Mohave ground squirrel or other wildlife.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1a: Implement Measures Required to Minimize, Reduce, or Mitigate Impacts on Desert Tortoise during Construction

This measure is described above.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-Status Species Habitats

This measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This measure is described above.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

This measure is described above.

Mitigation Measure BIO-MM-1h: Compensate Impacts on Desert Tortoise and Mohave Ground Squirrel Habitat

This measure is described above.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

This measure is described above.

Mitigation Measure BIO-MM-1j: Reduction of Night Light Spillover

This measure is described above.

Mitigation Measure BIO-MM-4: Implement West Mojave Plan Measures to Impacts on DWMAs on BLM Land

As identified in the Final EIR (Volume II, Section 3.7.7), PG&E in consultation with BLM will implement pertinent measures contained within the Final Environmental Impact Report and Statement for the West Mojave Plan to minimize potential impacts to special-status species within conservation areas located on federal land, if and where project activities would infringe

on their suitable habitat. These measures would generally include avoid construction activities when tortoises are most active between February 15 and November 15, conduct preconstruction surveys and monitoring for desert tortoise by authorized biologists, and pay compensatory fee within the Habitat Conservation Areas on BLM land. These measures also include conduct burrowing owl survey, provide workers with information brochure with picture of burrowing owl, and call biologist if seen; and conduct botanical surveys for Desert Cymopterus if disturbance is proposed within Superior Cronese DWMA.

Finding

The Water Board finds that such mitigation measures (BIO-MM-1a to BIO-MM-1f, BIO-MM-1h to BIO-MM-1j) are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1) In addition, the Water Board finds that such a mitigation measure (BIO-MM-4) is feasible and partially within the responsibility and jurisdiction of another public agency (BLM, who is responsible for implementing the West Mojave Plan) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

However, the adopted mitigation may not reduce the impact on desert tortoise movement to a less than significant level. Therefore, this impact may still be significant with the adopted mitigation. In order to implement agricultural treatment at a scale necessary to address the diffuse low-concentration chromium plume, there will be a need for extensive new areas of agricultural treatment fields. The Water Board considered whether there would be feasible ways to maintain potential tortoise movement corridors through the areas of new agricultural treatment, and found this was not feasible without large separations between agricultural treatment fields (on the order of a mile or more separation). Separating the agricultural treatment fields would disperse the areas of converted habitat all over the Hinkley Valley, instead of clustering them to the extent feasible. This would have the effect of fragmenting large areas of tortoise habitat, which would have a greater adverse effect on the tortoise compared to a more clustered approach to agricultural treatment units, even taking into account some hindrance of tortoise movement in the southern part of Hinkley Valley. As discussed elsewhere, the replacement of agricultural treatment with aboveground treatment for remediation of the diffuse low concentration plume is not considered to be more effective than agricultural treatment and is highly cost-ineffective, limiting its application on a sufficient scale for the long-term. Thus, the Water Board finds that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the measures or project alternatives identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(3)]

Impact BIO-6: Conflicts with West Mojave Plan Conservation Requirements on BLM Land (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.7.6) identified as a significant impact that, the project could result in conflicts with the conservation requirements of the West Mojave Plan where remediation activities disturb BLM land that is subject to the requirements of the Plan. For the project portion on BLM land, there are areas designated for habitat conservation for desert tortoise, Mohave ground squirrel,

burrowing owl and four of the special-status plant species (Barstow Woolly sunflower, desert Cymopterus, Mojave monkeyflower, and Parish's Phacelia) by the West Mojave Plan.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure BIO-MM-1a: Implement Measures Required to Minimize, Reduce, or Mitigate Impacts on Desert Tortoise during Construction

This measure is described above.

Mitigation Measure BIO-MM-1b: Limit Footprint of Disturbance Areas within Special-status Species Habitats

This measure is described above.

Mitigation Measure BIO-MM-1c: Implement Pre-Construction and Ongoing Awareness and Training Program

This measure is described above.

Mitigation Measure BIO-MM-1d: Conduct Ongoing Biological Monitoring during Construction

This measure is described above.

Mitigation Measure BIO-MM-1e: Minimize Potential Construction Hazards to Special-Status Species

This measure is described above.

Mitigation Measure BIO-MM-1f: Implement Measures to Minimize and Prevent Attraction of Predators during Construction and Operation

This measure is described above.

Mitigation Measure BIO-MM-1h: Compensate Impacts on Desert Tortoise and Mohave Ground Squirrel Habitat

This measure is described above.

Mitigation Measure BIO-MM-1i: Integrated Pest Management and Adaptive Management Plan for Agricultural Treatment Units

This measure is described above.

Mitigation Measure BIO-MM-1j: Reduction of Night Light Spillover

This measure is described above.

Mitigation Measure BIO-MM-1k: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Mohave Ground Squirrel

This measure is described above.

Mitigation Measure BIO-MM-1l: Implement Other Measures to Minimize, Reduce, or Mitigate Impacts on Burrowing Owl

This measure is described above.

Mitigation Measure BIO-MM-1m: Minimize Impacts on American Badger and Desert Kit Fox Occupied Dens

This measure is described above.

Mitigation Measure BIO-MM-1o: Reduction of Project-Related Spread of Invasive Plant Species

This measure is described above.

Mitigation Measure BIO-MM-4: Implement West Mojave Plan Measures to Impacts on DWMAs on BLM Land

This measure is described above.

Finding

The Water Board finds that these mitigation measures (BIO-MM-1a to BIO-MM-1f, BIO-MM-1h to BIO-MM-1m, BIO-MM-1o) are feasible and hereby agrees to adopt them. In addition, the Water Board finds that such a mitigation measure (BIO-MM-4) is feasible and partially within the responsibility and jurisdiction of another public agency (BLM, who is responsible for implementing the West Mojave Plan) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

1.2.8 Cultural Resources

Impact CUL-1: Change in Significance of Historical Architectural Resources (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.8.6) identified as a significant impact that the project could result in a change in the significance of a historical architectural (built environment) resource. One architectural

property has been recorded in the project area (portion of the Atchison, Topkea, and Santa Fe Railroad [ATSF railroad]), and there are architectural structures over 45 years of age which might be eligible for listing. Two properties (24191 Santa Fe Avenue and 37466 Hinkley Road) have structures with the potential to be considered historic resources and warrant further research.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure CUL-MM-1: Determine Presence of Historical Resources as Defined by CEQA

As identified in the Final EIR (Volume II, Section 3.8.7), PG&E will retain a qualified architectural historian to conduct surveys in areas where construction will occur to determine if historical resources, as definite in State CEQA Guidelines Section 15064.5, exist within the project area. The qualified architectural historian also will evaluate the resources identified during the Architectural Resources Survey and will consult with the Water Board to determine if they are eligible for the California Register of Historic Resources (CRHR) or otherwise meet the definition of a historical resource under CEQA. If so, the architectural historian will determine if the construction or operation of the proposed remediation activities would affect the qualities of the resource that contribute to the eligibility for listing on the CRHR, and will evaluate if the potential change(s) to the resource is considered significant. The evaluation will be documented in a report provided to the Water Board for review prior to construction.

Mitigation Measure CUL-MM-2: Avoid Damage to Historical Resources Located in Project Areas through Project Modification

As identified in the Final EIR (Volume II, Section 3.8.7), if the PG&E-designed remediation elements (including construction and staging) are likely to significantly impact qualities of a historical resource as identified by a professionally qualified architectural historian (per Mitigation Measure CUL-MM-1), PG&E will consult with a qualified architectural historian to redesign, reroute, or relocate the proposed elements in such a way that will not result in significant impacts to the resource. Barrier fencing or another visual cue may be installed around identified resources as required to protect against inadvertent damage during construction. PG&E will document the avoidance measures prior to construction and submit the report to the Water Board (and to the BLM for federal lands if required by BLM).

Mitigation Measure CUL-MM-3: Record Historical Resources

As identified in the Final EIR (Volume II, Section 3.8.7), if historical resources are identified and cannot be avoided through Mitigation Measure CUL-MM-2, PG&E will retain a professionally qualified architectural historian to conduct research and to adequately record the resources to Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) standards. Mitigation of a built environment resource may also take place in the form of preservation or reuse of a building or structure. If the architectural historic resource is eligible for the CRHR under Criteria 1 (association with important events in history), 2 (association with

important people in history), 3 (an important example of historic architecture), or 4 (has yielded or may be likely to yield information important in prehistory or history), PG&E will attempt to physically retain the building or structure. If the building or structure cannot physically be retained, then PG&E, in coordination with a qualified architectural historian, will pursue measures to retain and make easily available the historic memory of the resource.

Finding

The Water Board finds that these mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact CUL-2: Change in Significance of Archaeological Resources (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.8.6) identified as a significant impact that, the project could result in a change in the significance of historic or prehistoric archaeological resource or unique archaeological resources. Over 74 resources have been recorded, including but not limited to 42 historic-period sites with 55 features, mostly refuse scatters or elements of water/irrigation systems; 26 historic-period isolates consisting of 32 irrigation system elements and two miscellaneous features. Since all areas of potential ground disturbance have not been surveyed for cultural resources, some portions of the project area are sensitive for archaeological resources, and there is a potential to encounter heretofore unidentified buried cultural resources, potential ground disturbance from construction and operations and maintenance could result in a significant impact.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure CUL-MM-4: Conduct an Archaeological Resource Survey to Determine if Historical Resources under CEQA or Unique Archaeological Resources under Public Resources Code (PRC) 21083.2 are Present in Proposed Areas of Disturbance

As identified in the Final EIR (Volume II, Section 3.8.7), PG&E will retain qualified archaeologists, prior to the start of construction or future construction activities, to conduct a pedestrian archaeological survey to determine the prehistoric, ethnographic, and historic archaeological resources within areas proposed for disturbance within the project area. The survey and report will be conducted and written according to standards set forth by the Office of Historic Preservation and provided to the Water Board for review prior to construction. If prehistoric, ethnographic, and/or historic archaeological resources are identified within the proposed disturbance areas within the project area, then Mitigation Measures CUL-MM-5, CUL-MM-6, and CUL-MM-7 will be implemented.

Mitigation Measure CUL-MM-5: Avoid Damaging Archaeological Resources through Redesign of Specific Project Elements or Project Modification

As identified in the Final EIR (Volume II, Section 3.8.7), if the PG&E-designed remediation elements disturb prehistoric, ethnographic, or historic-era archaeological resources as identified by the qualified archaeologist (per Mitigation Measure CUL-MM-4), PG&E will consult with a professionally qualified archaeologist to determine if the proposed remediation activities would affect the qualities of the archaeological historical resource that contribute to the eligibility for listing in the CRHR. If the proposed activities are likely to significantly impact those qualities, PG&E will consult with a professionally qualified archaeologist to redesign, reroute or relocate the proposed element in such a way that will not result in significant impacts to the resource, because preservation in place is the preferred manner of mitigating impacts to archaeological sites under CEQA. Barrier fencing or another visual cue will be installed around identified resources to protect against inadvertent damage during construction.

Mitigation Measure CUL-MM-6: Evaluate Archaeological Resources and, if Necessary, Develop and Implement a Recovery Plan

As identified in the Final EIR (Volume II, Section 3.8.7), if archaeological resources cannot be avoided (per Mitigation Measure CUL-MM-5), PG&E will retain a professionally qualified archaeologist to evaluate the resource for its eligibility on the NRHP and CRHR. Evaluation will likely consist of historical research and/or physical excavations of the site to determine site content and integrity, and will be documented in a written report. If the resource is determined to be a historical resource, a data recovery plan will be developed and implemented. Mitigation will capture the history of a resource and share it with the. If the archaeological site cannot physically be retained, then PG&E, in coordination with a qualified archaeologist, will pursue ways that the memory of the resource is retained and made easily available. If the archaeological resource qualifies as a unique archaeological site but does not qualify as a historical resource under CEQA, the site will be treated in accordance with the provisions of Section 21083.2. Other than avoidance, mitigation measures will include deeding archaeological sites into permanent conservation easements, capping or covering archaeological sites with a layer of soil before building on the sites, or planning parks or other open space to incorporate archaeological sites.

Finding

The Water Board finds that these mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact CUL-3: Potential Disturbance of Buried Human Remains (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.8.6) identified as a significant impact that the project area could have the potential to uncover as-yet undiscovered human remains because there could be ground-disturbing activities in areas of cultural sensitivity (e.g., areas of OU3 have not been surveyed and are located in the vicinity of areas identified as having potential for human remains).

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure CUL-MM-7: Comply with State and County Procedures for the Treatment of Human Remains Discoveries

As identified in the Final EIR (Volume II, Section 3.8.7), PG&E will notify the Water Board, a qualified archaeologist, and the San Bernardino County Coroner (and BLM if on federal land) if human remains are found as a result of ground disturbance, in a project location other than a dedicated cemetery. If human remains are discovered, further disturbances and activities will cease in the area and nearby areas, and the County Coroner will be contacted immediately. If the coroner determines that the remains are of Native American origin, the coroner must contact the NAHC within 24 hours, and the NAHC will identify and notify the most likely descendants (MLDs).

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact CUL-4: Direct or Indirect Destruction of a Unique Paleontological Resource (Less than Significant with Mitigation, All Alternatives)

The Final EIR (Volume II, Section 3.8.6) identified as a significant impact that the project could disturb significant paleontological resources from construction-related ground disturbance for agricultural treatment units, installation of wells, pipelines, and above-ground treatment facilities that occur within geological deposits which are highly sensitive for paleontological resources.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure CUL-MM-8: Conduct Preconstruction Paleontological Resource Evaluation, Monitoring, Resource Recovery, and Curation

As identified in the Final EIR (Volume II, Section 3.8.7), prior to construction and future construction activities, PG&E will confirm all geologic units potentially affected by each segment of the project, including Quaternary and bedrock units. This information will be used to guide mitigation requirements on a site-specific basis during construction and during maintenance activities that require ground disturbance. All ground-disturbing construction and maintenance activities will require: a) Further Evaluation of Geologic Units with "Undetermined" Sensitivity, b) Evaluation of Site-Specific Impact Potential in Areas of Holocene Substrate, c)

Preconstruction Meeting and Worker Awareness Training, d) Paleontological Monitoring, e) Stop Work Requirement, and f) Fossil Recovery and Curation.

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.9 Transportation and Traffic

Impact TRA-1a: Increase in Traffic Volumes or Roadway Congestion from Construction (Less than Significant with Mitigation)

The Final EIR (Volume II, Section 3.10.6) identified as a significant impact that construction of wells, agricultural treatment units, above-ground treatment facilities, and all associated infrastructure would generate temporary increases in traffic. Such increases would be associated with construction workers traveling to construction sites and materials and equipment being delivered to the project area. The additional vehicular trips (approximately 40), when considered with existing traffic in the project area, would constitute only an incremental increase in traffic on local roads and State Route (SR) 58 and would not degrade level of service. Although there would be only incremental increases in traffic, increases in construction-related truck traffic over the course of project build out has the potential to worsen traffic operations and increase congestion because of slow-moving trucks. The increase in traffic volumes would be minor, spread over time, and in relatively remote locations, affecting streets with low traffic volumes. However, because of the speed of vehicular traffic and unprotected turning movements on SR 58, there is the potential for significant impacts to occur as a result of increased congestion from construction-related truck traffic on SR 58.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure TRA-MM-1: Implement Traffic Control Measures during Construction

As identified in the Final EIR (Volume II, Section 3.10.7), PG&E will ensure that construction contractors implement the following traffic control measures during construction of the remediation facilities and associated infrastructure. These measures include: 1) re-routing delivery trucks with materials or equipment to use the signalized intersection at Lenwood Road to access project area roads from and to SR 58 wherever feasible; 2) notifying emergency personnel, including the San Bernardino County Sheriff-Coroner's Department (Barstow Station) and the San Bernardino County Fire Department (North Desert Division), of the construction schedule when it involves vehicles that could slow or block traffic; and 3) using personnel as necessary to direct traffic and prevent vehicles from lining up on county roads and highways during construction.

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)] In addition, this mitigation measure is partially within the responsibility and jurisdiction of another public agency (San Bernardino County Public Works for County roads and Caltrans for the State highway) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

Impact TRA-2a: Create Significant Roadway Hazards from Construction Truck Traffic (Less than Significant with Mitigation)

The Final EIR (Volume II, Section 3.10.6) identified as a significant impact that, construction-related truck traffic making turns from SR 58 could create a safety hazard and increase the risk of accidents, particularly during morning or afternoon peak traffic periods.

Mitigation Measure

The Water Board will include the following mitigation measure as a condition to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure TRA-MM-1: Implement Traffic Control Measures during Construction

This measure is described above.

Finding

The Water Board finds that this mitigation measure is feasible and hereby agrees to adopt it. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)] In addition, this mitigation measure is partially within the responsibility and jurisdiction of another public agency (San Bernardino County Public Works for County roads and Caltrans for the State highway) and not the Water Board. Such changes have been adopted by such other agency or can and should be adopted by such other agency. [14. Cal. Code Reg. 15091(a)(2)]

1.2.10 Aesthetics

Impact AES-1c: Permanent Degradation of Visual Character or Quality from Above-ground Treatment Facility (Less than Significant with Mitigation, Alternatives 4C-3 and 4C-5; No Impact, All Other Alternatives unless Ex-Situ Treatment used as Contingency)

The Final EIR (Volume II, Section 3.11.6) identified as a significant impact that, the above-ground treatment facilities proposed under Alternatives 4C-3 and 4C-5 would potentially degrade the visual character or quality. Visible features of facilities would a 35-foot tall process building, aerial utility lines, and the 12-foot high security fencing around the compound. The treatment facilities are considered a

new quasi-industrial development feature that could be considered out of character with the existing rural residential and agricultural setting.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AES-MM-1: Screen Above-Ground Treatment Facilities from Surrounding Areas

As identified in the Final EIR (Volume II, Section 3.10.7), PG&E will install security fencing with privacy slats, as currently proposed, and/or landscaping around the major above-ground treatment facilities, included as part of Alternatives 4C-3 and 4C-5 and as a contingency for all alternatives. The privacy slates will be neutral shades of brown to minimize landscape intrusion from remediation infrastructure. Any landscaping would be drought-tolerant, native and in adequate abundance to screen the facility from distant views. Additionally, PG&E will design structures to include architectural features that reduce the bulk and scale.

Mitigation Measure AES-MM-2: Use Low-Sheen and Non-Reflective Surface Materials on Visible Remediation Facilities and Infrastructure

As identified in the Final EIR (Volume II, Section 3.10.7), PG&E will ensure that visible, above-ground remediation facilities and infrastructure (e.g., a 35-foot tall process building) will be designed and constructed to use a low-sheen and non-reflective surface material. Wall finishes will have low-sheen and non-reflective surfaces to reduce potential for glare. The use of smooth-trowelled surfaces and glossy paint will be avoided. At a minimum, infrastructure materials will be non-reflective, such as earth-toned concrete or galvanized steel that would naturally oxidize a short time after installation and would not cause reflective daytime glare. The paint type will have a dull, flat, or satin finish only and will ensure long-term durability of the painted surfaces to the extent practicable. The paint color will be two to three shades darker than the general surrounding area, and PG&E will maintain it over time.

Finding

The Water Board finds that these mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

Impact AES-2: Create a New Source of Light and Glare (Less than Significant with Mitigation)

The Final EIR (Volume II, Section 3.11.6) identified as a significant impact that, the above-ground treatment facilities proposed under Alternatives 4C-3 and 4C-5 would include exterior floodlighting of all buildings to accommodate the 24-hour-a-day operation of these facilities, which would have the greatest potential to generate new sources of light and glare due to the size of new structures that would be constructed on the compounds. Alternatives 4B, 4C-2, and 4C-4 would have intensive impacts, but

they would occur over a much larger area occurring under existing conditions than would the impacts of Alternatives 4C-3 and 4C-5.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure AES-MM-1: Screen Above-Ground Treatment Facilities from Surrounding Areas

This measure is described above.

Mitigation Measure AES-MM-2: Use Low-Sheen and Non-Reflective Surface Materials on Visible Remediation Facilities and Infrastructure

This measure is described above.

Mitigation Measure AES-MM-3: Apply Light Reduction Measures for Exterior Lighting

As identified in the Final EIR (Volume II, Section 3.10.7), PG&E will install exterior lights at the lowest allowable height and will use the low-pressure sodium lamps with the lowest allowable wattage (less than 2,000 lumens [150 watts]), and the exterior lights will be shielded and directed downward. The amount and duration of nighttime light use will be minimized to the greatest degree possible (i.e., minimal amount needed to provide required security).

Finding

The Water Board finds that these mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.2.11 Socioeconomics

Impact SE-1: Secondary Physical Impacts due to Project-Related Socioeconomic Effects (Less than Significant with Mitigation, All Action Alternatives)

The Final EIR (Volume II, Section 3.11.6) identified as a significant impact that the project could indirectly create blighted conditions that could result in secondary physical impacts due to the land and water rights acquisitions necessary to remedial actions. The project could also disrupt, hinder or otherwise discourage existing residential and other land use due to effects of groundwater drawdown and water quality changes from remedial actions that might result in private individuals deciding to leave the project area and leave vacated property and structures. If not properly secured and maintained, remnant structures on vacant land could deteriorate over time, and potentially attracting vandalism, illegal occupation, and other criminal activity. Unsecured or unmaintained structures could result in physical hazards to individuals who might access such structures and be exposed to unsafe construction, lead-based paint, asbestos, or other physical hazards.

Mitigation Measures

The Water Board will include the following mitigation measures as conditions to the new CAO and/or associated WDRs issued to PG&E.

Mitigation Measure SE-MM-1: Manage Vacant Lands, Residences, and Structures to Avoid Physically Blighted Conditions

As identified in the Final EIR (Volume II, Section 3.12.7), if properties are acquired, PG&E will ensure that existing buildings on these properties will be razed or maintained along with other properties in the project area as part of the normal operations and maintenance activities. Retained structures will be secured to prevent unauthorized access. Litter and debris will be removed from vacant properties acquired by PG&E. PG&E will monitor structures to ensure that they are not used by trespassers or wildlife. Prior to proposed demolition of structures, PG&E will assess the structures for cultural resource significance and follow all procedures for protection of significant cultural resources accordingly. For demolitions, PG&E will follow all state and federal requirements for addressing lead-based paint, asbestos, or other hazardous materials, including proper containment and disposal. PG&E will work with property sellers to ensure that all pets are removed from the property upon acquisition; and if pets are abandoned, PG&E will work with San Bernardino County Animal Care & Control to remove the animals.

Mitigation Measure WTR-MM-2: Water Supply Program for Wells that are Affected by Remedial Activities

This mitigation measure is described above.

Mitigation Measure WTR-MM-3: Incorporate Measures to Prevent, Reduce and Control Potential Temporary Localized Chromium Plume Bulging Into Overall Plume Control and Monitoring

This mitigation measure is described above.

Mitigation Measure WTR-MM-4: Restoration of the Hinkley Aquifer Affected by Remedial Activities for Beneficial Uses

This mitigation measure is described above.

Mitigation Measure WTR-MM-5: Investigate and Monitor Total Dissolved Solids, Uranium and Other Radionuclide Levels in Relation to Agricultural Treatment and Take Contingency Actions

This mitigation measure is described above.

Mitigation Measure WTR-MM-6: Monitor Nitrate Levels and Manage Agricultural Treatment to Avoid Significant Increases in Nitrate Levels and Provide Alternative Water Supplies As Needed

This mitigation measure is described above.

Mitigation Measure WTR-MM-6: Monitor Nitrate Levels and Manage Agricultural Treatment to Avoid Significant Increases in Nitrate Levels and Provide Alternative Water Supplies As Needed

This mitigation measure is described above.

Mitigation Measure WTR-MM-7: Construction and Operation of Additional Extraction Wells to Control Carbon Amendment In-situ Byproduct Plumes

This mitigation measure is described above.

Mitigation Measure WTR-MM-8: Ensure Freshwater Injection Water Does Not Degrade Water Quality

This mitigation measure is described above.

Finding

The Water Board finds that these mitigation measures are feasible and hereby agrees to adopt them. Therefore, the Water Board finds that changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect on water supply wells as identified in the Final EIR. [14. Cal. Code Reg. 15091(a)(1)]

1.3 Findings for Alternatives

1.3.1 Preface

As described in Section 1.1, *Introduction*, above, the Final EIR evaluates at an equal level of detail six project alternatives, each with different combinations and intensities of the following remediation activities:

- Plume containment by extracting contaminated groundwater at outer edge of plume.
- Plume containment by injecting clean water at the outer edge of plume.
- Groundwater extraction and land treatment (with agricultural reuse), whereby contaminated groundwater is extracted and applied to land where soil microbial action converts the chromium.
- In-situ (below-ground) treatment, whereby biological and chemical reductants are injected into the contaminated groundwater to promote conversion of chromium.
- Ex-situ (above-ground) treatment, whereby contaminated chromium is extracted, treated, and then discharged to either land (agricultural reuse) or injected back into the aquifer.

A wide range of alternatives were considered by the Water Board, and development of these alternatives is described in detail in the Final EIR (Volume II, Chapter 2, Section 2.7). Of this range, the Water Board selected the most promising five feasible action alternatives to analyze in this EIR at an equal level of detail based on review of the Feasibility Study (and addenda) (PG&E 2010, 2011a, 2011b< 2011c, and 2011d), input from U.S. Environmental Protection Agency and California Department of

Toxic Substances Control, public comment and review of remediation experiences of prior pilot tests and remediation activities at the site to date. The Water Board also analyzed the No Project alternative as required by CEQA. Thus, the following six project alternatives were analyzed in the Final EIR:

- No Project
- Alternative 4B
- Alternative 4C-2
- Alternative 4C-3
- Alternative 4C-4
- Alternative 4C-5

The project objectives are intended to reduce chromium concentrations in groundwater to the cleanup targets and contain the groundwater plume (Final EIR, Volume II, Chapter 2, Section 2.6). Development of these objectives takes into consideration the available technologies, recovery of beneficial uses, short-term effectiveness, long-term effectiveness, and community concerns. The specific objectives are to:

- Contain the contaminated groundwater plume from migrating immediately and continuously from the area described in the amended CAO No R6V-2008-0002A3.
- Contain the contaminated groundwater plume overall.
- Reduce maximum groundwater concentrations to 3.2 ppb Cr[T] and 3.1 ppb Cr[VI], as described in CAO No. R6V-2008-0002A1.
- Reduce average groundwater concentrations to 1.2 ppb Cr[VI] and 1.5 ppb Cr[T], as described in CAO No. R6V-2008-0002A1.
- Restore beneficial uses of the groundwater by achieving the cleanup levels noted above in the minimum time feasible.
- Limit or mitigate environmental impacts associated with the cleanup activities.

Together, these interrelated objectives are intended to achieve the underlying purpose of the project, which is to restore groundwater quality to background levels of chromium for beneficial uses of the aquifer, in the minimum amount of time practicable, while limiting or mitigating environmental impacts associated with clean-up activities.

The Water Board cannot, by state law, specify how PG&E complies with the Water Board's Cleanup and Abatement Order or Waste Discharge Requirements. Therefore, PG&E could employ any of the action alternatives (or a mix and match). While the five action approaches are termed "alternatives," they are really a range of potential project actions. All of the five action alternatives meet the project objectives and all are considered to be feasible. The Water Board will apply the mitigation measures described in this document and the certified EIR as conditions to the CAO and/or WDRs that will be issued for the remediation approach selected by PG&E. PG&E can choose remediation approaches and methods as long as they fit within the range of impacts identified in the EIR for the action alternatives. Should PG&E select remediation approaches, methods, or locations that would be different than those addressed in the EIR, then the Water Board would have to analyze whether any additional environmental effects

would occur due to the changes and prepare appropriate CEQA documentation (addendum, supplemental or subsequent document).

The No-Project alternative is the only of the six alternatives examined in the Final EIR in detail that is rejected. The reasons for its rejection as infeasible are described below. Other alternatives were considered in the EIR but dismissed from further detailed analysis for the reasons disclosed in the EIR (refer to Final EIR, Volume II, Section 2.11, "Other Alternatives Considered but Dismissed from Further Analysis".

1.3.2 No Project Alternative

Under the No Project Alternative, no additional or expanded remedial actions would be implemented. Prior authorizations would continue to be used for cleanup activities, and the Water Board would not adopt a new CAO (and associated site-wide WDRs). The current remediation activities that would continue to be implemented under the No Project Alternative are described below.

- **Plume Containment.** Plume containment would continue via freshwater injection and agricultural treatment. Freshwater would be pumped from the three existing PG&E supply wells located south of the Compressor Station and piped to the five injection wells located northwest of the plume at the currently authorized volumes and rates (80 gpm). Land treatment via the Desert View Dairy and four agricultural units (described below) would continue as under existing conditions.
- **Land Treatment at the Desert View Dairy and Four Adjacent Parcels.** Extraction of low concentration Cr[VI] groundwater and land application at the Desert View Dairy and the four agricultural units (on the Gorman [north and south], Cottrell, and Ranch properties) within OU1/OU2 would continue at the current volumes and rates (1,100 gpm).
- **In-Situ Treatment.** In-situ treatment within the Source, Central, and South Central IRZ areas near the southern portions of the plume using injection of reductants into the contaminated aquifer to convert dissolved Cr[VI] to solid Cr[III] would continue. In-situ operations would continue via pumping groundwater from extraction wells, mixing groundwater and reagents in mixing tanks, and injection of the mixture into injection wells. Biological (i.e., carbon-amended) and chemical reductants are injected by manual or semi-automated recirculation systems, or manually direct injection methods. There are currently two IRZ compounds that include equipment, tanks, utilities, and wells, with footprint of no more than 100 by 200 feet in area and 20 feet in height surrounded by fences up to 12 feet high. Additionally, there are almost 30 smaller above-ground compounds (with approximately 20 by 20 feet footprint) for extraction wells, and 5 similar small compounds for injection wells dealing with the western bulge. All compounds have approximately 12-foot high fences with brown-colored slats. Also included are conveyance pipelines for in-situ treatment.
- **Monitoring Activities.** Monitoring wells and sampling of chromium and by-product concentrations would continue to occur as under existing conditions; these activities would not be limited to a specific OU area and could be implemented throughout the project study area.
- The No Project Alternative does not include remedial actions to address the expanded plume and thus would not actively remediate all of the existing (or potential future expanded) plume. As a result, the time to remediate chromium contamination within the entire plume would be closer to 1,000 years for areas outside the first quarter 2010 plume. The No Project Alternative does not

include a contingency plan in the event that agricultural units cannot be operated due to crop disease, extended storms, or other events.

- The No Project Alternative fails to meet most of the project objectives. This is because the current activities are not and were not intended to be the program necessary to meet the project objectives. As discussed in Section 2.6 of the Final EIR, CAO No. R6V-2008-0002 required PG&E to submit a Feasibility Study by September 1, 2010 that assessed remediation strategies for chromium and proposed a final groundwater remediation proposal to achieve compliance with State Water Resources Control Board (SWRCB) Resolution 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304" (Resolution 92-49). The action alternatives are derived from that Feasibility Study and its addenda and reflect the additional activities that are necessary to achieve remediation.
- Contain the contaminated groundwater plume from migrating immediately and continuously from the area described in the amended CAO No R6V-2008-0002A3. The No Project Alternative will not fully stop the migration of the plume. The plume has expanded despite the ongoing remediation efforts (see Sections 2.3 and 2.8 of the Final EIR and Addendum #3 of the Feasibility Study), hence the need for the current proposal. The No-Project Alternative will not meet this objective.
- **Contain the contaminated groundwater plume overall.** The No-Project Alternative will not fully contain the groundwater plume. It is limited to addressing the plume as it was identified in 2008–2010. The extent of the plume is greater as of late 2012 than as of 2008 or 2010 (see Section 2.4, Existing Conditions and Figure 2-2b of the Final EIR) and limited remediation will not contain the overall plume. The No-Project Alternative will not meet this objective.
- **Reduce maximum groundwater concentrations to 3.2 ppb Cr[T] and 3.1 ppb Cr[VI], as described in CAO No. R6V-2008-0002A1.** The No Project Alternative is limited to addressing the plume as it was identified in 2008–2010. Although it may reduce maximum groundwater concentrations, it will do so for only a portion of the groundwater plume. Therefore, the No-Project Alternative will not meet this objective.
- **Reduce average groundwater concentrations to 1.2 ppb Cr[VI] and 1.5 ppb Cr[T], as described in CAO No. R6V-2008-0002A1.** The No Project Alternative is limited to addressing the plume as it was identified in 2008–2010. Although it may reduce maximum groundwater concentrations, it will do so for only a portion of the groundwater plume. Therefore, the No-Project Alternative will not meet this objective.
- **Restore beneficial uses of the groundwater by achieving the cleanup levels noted above in the minimum time feasible.** The No Project Alternative is limited to addressing the plume as it was identified in 2008–2010. Therefore, it will restore beneficial uses for only a portion of the area affected by the groundwater plume. As a result, the No-Project Alternative will not meet this objective.
- **Limit or mitigate environmental impacts associated with the cleanup activities.** The No-Project Alternative is subject to mitigation measures intended to limit or mitigate the environmental impacts associated with cleanup. The remedial activities currently underway are allowed under existing WDRs whose potential environmental impacts were previously evaluated in mitigated negative declarations.

Finding

The Water Board finds that No Project does not achieve the project objectives to contain and treat existing chromium contamination in the project area and is therefore rejected.

2. Statement of Overriding Considerations

2.1 Introduction

After considering the Final EIR in conjunction with making the Findings, the lead agency must not approve the project for which the EIR was prepared unless the project as approved will not have a significant effect on the environment; or all avoidable significant effects on the environment have been eliminated or substantially lessened, and the agency finds that "specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment." (Public Resources Code Section 21081[b])

This document contains a Statement of Overriding Considerations as required by CEQA (Public Resources Code Section 21081[b]) and CEQA Guidelines Section 15093 (14 Cal. Code Reg. 15093). Specifically, section 15093 (a) of the CEQA Guidelines, requires decision-makers "to balance, as applicable, the economic, legal, social, technological, or other benefits [] of a proposed project against its unavoidable environmental risks when determining whether to approve a project." (14 Cal. Code Reg. 15093[a]) When the specific economic, legal, social, technological, or other benefits of the project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable (State CEQA Guidelines 15093[a]). In this case, the lead agency must state in writing the specific reasons to support its action. This statement of overriding considerations shall be supported by substantial evidence in the record, shall be included in the record of the project approval, and should be mentioned in the notice of determination.

2.2 Significant Unavoidable Environmental Impacts

Based on the Final EIR and other information on the record, the Water Board has determined that implementation of the proposed project may result in the following significant, unavoidable environmental impacts:

- Water Resources–Temporary Localized Chromium Plume Expansion ("Bulging") Due to Remedial Activities (Final EIR, Volume II, Section 3.1, Impact WTR-2d)
- Water Resources–Increase in Total Dissolved Solids, Uranium, and Other Radionuclides due to Agricultural Treatment (Final EIR, Volume II, Section 3.1, Impact WTR-2e)
- Water Resources–Increase in other Secondary Byproducts (Dissolved Arsenic, Iron and Manganese) due to In-Situ Remediation (Final EIR, Volume II, Section 3.1, Impact WTR-2g)

- Biological Resources–Disturbance, Mortality, and Loss of Habitat for Desert Tortoise (Desert Tortoise only) (Final EIR, Volume II, Section 3.7, Impact BIO-1a)
- Biological Resources–Conflicts with Wildlife Movement (Desert Tortoise only) (Final EIR, Volume II, Section 3.7, Impact BIO-4)

The Water Board has further determined that while mitigation measures identified in the Final EIR would be effective in reducing the impacts described above, some of those impacts would not be reduced to less than significant levels even with such mitigation, and the selected alternative would still generate significant unmitigated environmental impacts. Therefore, pursuant to Section 15093 of the CEQA Guidelines, the following Statement of Overriding Considerations has been prepared for the project.

2.3 Overriding Considerations

Historical chromium discharges from the Hinkley Compressor Station have contaminated groundwater beneath the community of Hinkley. The Compressor Station facility is used to transport natural gas along pipelines from Texas to California. Between 1952 and 1964, cooling tower water was treated with a compound containing chromium to prevent corrosion, and the water was then discharged to unlined ponds which resulted in contamination of the soil and groundwater beneath the site with total and hexavalent chromium (Cr[T] and Cr[VI], respectively). As of 2008, this contamination created a plume of chromium in groundwater extending about two miles to the north of the Compressor Station and about 1.3 miles wide (Lahontan Regional Water Quality Control Board Water Board 2008). As of late 2012, the plume was much larger than in 2008 and was approximately 7 miles in length and 2 to 2.5 miles wide at its widest point. The Water Board has required PG&E to take remedial actions to clean up the chromium contamination in the soil, and to slow and stop the plume of contamination in the groundwater from spreading (also referred to as containing the plume). Soil contamination has been addressed and the project is focused on new regulatory actions to contain the groundwater plume.

Why the concern over the presence of chromium? The California Department of Public Health's "Chromium-6 Fact Sheet" (March 30, 2012) states that:

> Chromium is a heavy metal that occurs throughout the environment. The trivalent form is a required nutrient and has very low toxicity. The hexavalent form, also commonly known as "chromium 6," is more toxic and has been known to cause cancer when inhaled. In recent scientific studies in laboratory animals, hexavalent chromium has also been linked to cancer when ingested.

The project objectives are intended to reduce chromium concentrations in groundwater to the cleanup targets and contain the groundwater plume. Development of these objectives takes into consideration the available technologies, recovery of beneficial uses, short-term effectiveness, long-term effectiveness, and community concerns. The specific project objectives are to:

- Contain the contaminated groundwater plume from migrating immediately and continuously from the area described in the amended CAO No R6V-2008-0002A3.
- Contain the contaminated groundwater plume overall.
- Reduce maximum groundwater concentrations to 3.2 ppb Cr[T] and 3.1 ppb Cr[VI] as described in CAO No. R6V-2008-0002A1.

- Reduce average groundwater concentrations to 1.2 ppb Cr[VI] and 1.5 ppb Cr[T], as described in CAO No. R6V-2008-0002A1.
- Restore beneficial uses of the groundwater by achieving the cleanup levels noted above in the minimum time feasible.
- Limit or mitigate environmental impacts associated with the cleanup activities.

Implementation of Alternative 4B, 4C-2, 4C-3, 4C-4 or 4C-5 or an appropriate combination thereof would meet the project objectives described above. Implementation of the project will, through adoption of a site-wide General Permit specifying the operating, discharge, and monitoring requirements for comprehensive clean-up of chromium in groundwater to meet the requirements set by the new CAO, reduce the levels of chromium in groundwater beneath the site to background levels. The reduction will provide two specific environmental and economic benefits.

1. It will restore beneficial uses of the aquifer. The site is located within the Harper Valley groundwater basin (groundwater basin 6-47 in the current "Water Quality Control Plan for the Lahontan Region"). The current "Water Quality Control Plan for the Lahontan Region" (adopted 1995, and subsequently amended) defines the following as beneficial uses within this basin: Municipal (uses of waters used for community, military, or individual water supply systems including, but not limited to, drinking water supply); Agricultural (uses of waters used for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, and harvesting of aquatic plants and animals for human consumption or bait purposes); Industrial Service Supply (uses of waters used for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, geothermal energy production, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization); and Freshwater Replenishment (uses of waters used for natural or artificial maintenance of surface water quantity or quality [e.g., salinity]). The project will allow the groundwater beneath Hinkley to once again be used for these beneficial purposes.
2. Restoring beneficial uses of the aquifer will have a beneficial social and economic effect on the area. The presence of contamination is a major concern of the Hinkley residents due to concerns about potential health risks associated with past and present groundwater contamination from the PG&E release. In addition, the restriction on water available to farms and the recent economic recession together with the concern surrounding chromium contamination may have affected property values of homes and businesses in Hinkley in and adjacent to the plume, and might have also affected certain business activities such as agricultural crop sales and the ability to obtain commercial loans and insurance. Health concerns about chromium combined with local economic effects and the PG&E land purchase program have resulted in some individuals choosing to move away from Hinkley, thus changing the character of the community. The reduction of local school-age population may have affected the recent closing of the public Hinkley School. Restoring the beneficial uses of the aquifer will reduce local public health concerns about chromium contamination and eliminate one source of economic constraint on the area, potentially allowing this area to become economically viable again (if other non-contamination related economic conditions are favorable), which would be a long-term benefit of the project.

The Water Board concludes, based upon the whole record, that the economic, social, technical and environmental benefits of meeting these objectives outweigh the unavoidable environmental impacts

associated with its construction and operation and determines that said benefits override the significance of their associated adverse impacts.

3. Citations

Lahontan Regional Water Quality Control Board. 2008. Board Order No. R6V-2008-0014. WDID No. 6B3691 07001. General Waste Discharge Requirements for Pacific Gas and Electric Company General Site-Wide Groundwater Remediation Project. April. San Bernardino County.

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Pacific Gas and Electric Company (PG&E). 2010. Feasibility Study, Pacific Gas and Electric Company (PG&E) Hinkley Compressor Station, Hinkley, California. Main report prepared by Haley & Aldrich, appendices prepared by Haley & Aldrich, CH2MHill, and Arcadis. August 30. CA. Available:<http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/index.shtml>.

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Pacific Gas and Electric Company (PG&E). 2011b. Addendum #2 to the Feasibility Study, Pacific Gas and Electric Company Compressor Station, Hinkley, California. March 3. Main report prepared by Haley & Aldrich. Appendices prepared by Haley & Aldrich and Arcadis. Available: <http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/index.shtml>.

Pacific Gas and Electric Company (PG&E). 2011c. Addendum #3 to the Feasibility Study, Pacific Gas and Electric Company Compressor Station, Hinkley, California. September 15. Main report prepared by Haley & Aldrich. Appendices prepared by Haley & Aldrich, Arcadis, and CH2MHill. Available: <http://www.swrcb.ca.gov/rwqcb6/water_issues/projects/pge/index.shtml>.

Pacific Gas and Electric Company (PG&E). 2011d. Construction and Operation Data for Air Quality Analysis. Excel Spreadsheet. Prepared by Haley & Aldrich and CH2MHill. March 10.