



*Pacific Gas and  
Electric Company®*

**PG&E Topock  
Compressor Station  
Needles, California**

**Basis of Design Report / Pre-Final (90%) Design Submittal  
for the Final Groundwater Remedy**

**Appendix L:  
Operation and Maintenance Manual**

**September 2014**

**CH2MHILL®**

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# Operation and Maintenance Manual Pre-Final (90%) Design Submittal for the Final Groundwater Remedy

## PG&E Topock Compressor Station Needles, California

Prepared for  
**Pacific Gas & Electric Company**

September 2014

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Volume 1: Operation and Maintenance Plan

Volume 2: Sampling and Monitoring Plan

Volume 3: Contingency Plan

Volume 4: Soil Management Plan

Volume 5: Project Health and Safety Plan

# Acronyms and Abbreviations

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µg/L	micrograms per liter
ADEQ	Arizona Department of Environmental Quality
AE	Applied Earthworks
AMM	Avoidance and Minimization Measure
AOC	Area of Concern
APE	Area of Potential Effect
ARARs	applicable or relevant and appropriate requirements
BLM	U.S. Bureau of Land Management
BMP	Best Management Practice
BOD	Basis of Design
BOR	U.S. Bureau of Reclamation
CACA	Corrective Action Consent Agreement
Caltrans	California Department of Transportation
CD	Consent Decree
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CHPMP	Cultural and Historic Properties Management Plan
CIMP	Cultural Impact Mitigation Program
CMI	Corrective Measures Implementation
COPC	constituent of potential concern
Cr(III)	trivalent chromium
Cr(T)	total chromium
Cr(VI)	hexavalent chromium
CRIT	Colorado River Indian Tribes
CTF	Clearinghouse Task Force
CWG	Consultative Working Group
DOI	United States Department of the Interior
DTSC	California Department of Toxic Substances Control
EIR	environmental impact report
EPCRA	Emergency Planning and Community Right-to-Know Act
FCR	Field Contact Representative

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HSP	health and safety plan
HNWR	Havasu National Wildlife Refuge
ICs	institutional controls
IRL	Inner Recirculation Loop
IRZ	In-situ Reactive Zone
MMRP	Mitigation Monitoring and Reporting Program
MNA	monitored natural attenuation
MWD	Metropolitan Water District
NTH	National Trails Highway
O&M	operation and maintenance
OF	Operational and Functional
OPS	Operating Properly and Successfully
PG&E	Pacific Gas and Electric Company
PA	Programmatic Agreement
PBA	Programmatic Biological Assessment
PM	Project Manager
RA	Remedial Action
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
ROD	Record of Decision
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
SWRCB	State Water Resources Control Board
TCS	Topock Compressor Station
TLP	Topock Leadership Partnership
TWG	Technical Working Group
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Services



# Introduction

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This Operation and Maintenance (O&M) Manual is Appendix L of the Basis of Design (BOD) Report/ Pre-Final (90%) Design Submittal. The O&M Manual (or manual) consists of plans for operation and maintenance, sampling and monitoring, and management of contingencies associated with the selected final groundwater remedy at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (TCS, or the Compressor Station) in San Bernardino County, California. In addition, the O&M Manual also includes a Soil Management Plan and a Health and Safety Plan (HSP) for remedy O&M.

The California Department of Toxic Substances Control (DTSC) is the state lead agency overseeing corrective actions at the Compressor Station in accordance with the Resource Conservation and Recovery Act (RCRA) Corrective Action. In February 1996, PG&E and DTSC entered into a Corrective Action Consent Agreement (CACA) pursuant to Section 25187 of the California Health and Safety Code (DTSC 1996). The U.S. Department of the Interior (DOI) is the lead federal agency overseeing response actions on or emanating from land under its jurisdiction, custody, or control near the Compressor Station pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In July 2005, PG&E and the federal agencies (DOI, U.S. Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), and U.S. Bureau of Reclamation [BOR]) entered into an Administrative Consent Agreement (DOI 2005). A Remedial Design/Remedial Action Consent Decree (CD) between the United States and PG&E, on behalf of the DOI, under CERCLA (DOI 2013) was approved by the United States District Court for the Central District of California in November 2013.. In a coordinated effort, DOI and DTSC selected the final groundwater remedy to address chromium in groundwater at Solid Waste Management Unit (SWMU) 1/ Area of Concern (AOC) 1 and AOC 10.

In conformance with the 1996 CACA (DTSC 1996) and the CD requirements (DOI 2013), this O&M Manual builds on the framework established in the Revised Groundwater Corrective Measures Implementation/Remedial Design (CMI/RD) Work Plan for SWMU 1/ AOC 1 and AOC 10 (CH2M HILL 2011). The Revised CMI/RD Work Plan was approved by the DOI on November 3, 2011 for use in development of the groundwater remedy design documents and associated plans (DOI 2011). The CMI/RD Work Plan and other key project documents may be reviewed on the DTSC's Topock Compressor Station web site: <http://www.dtsc-topock.com>.

The following subsections describe the remedy and the remedial action objectives (RAOs), summarize the applicable or relevant and appropriate requirements (ARARs) and EIR Mitigation Measures, and describe the content and organization of this O&M Manual.

## L1.1 Overview of Groundwater Remedy and Requirements

The final groundwater remedy, its objectives, and its regulatory requirements are described below. The groundwater remedy includes:

- An In-situ Reactive Zone (IRZ) using a line of wells installed along National Trails Highway (NTH) that may be used as both injection and extraction wells to circulate groundwater and distribute an organic carbon source to promote reduction of the hexavalent chromium (Cr[VI]) to trivalent chromium (Cr[III]).
- An Inner Recirculation Loop (IRL) comprised of:
  - River Bank Extraction Wells along the Colorado River to provide hydraulic capture of Cr(VI) groundwater concentrations, accelerate cleanup of the floodplain, enhance the flow of contaminated groundwater through the NTH IRZ line, and control migration of IRZ-generated by-products toward the Colorado River.
  - IRL injection wells to re-inject groundwater extracted from the River Bank Extraction Wells (which may be amended with an organic carbon source) and/or inject fresh water in the upgradient portion of the Cr(VI) plume to flush the plume through the NTH IRZ.

- A TCS Recirculation Loop comprised of:
  - East Ravine Extraction Wells in the eastern (downgradient) end of the East Ravine to provide hydraulic capture of contaminated groundwater in bedrock.
  - TCS injection wells located upgradient of the TCS for the re-injection of groundwater extracted from the East Ravine Extraction Wells and Transwestern Bench Extraction Wells, which will be amended with an organic carbon source to promote reduction of the Cr(VI) to Cr(III) and remove elevated Cr(VI) groundwater concentrations from the alluvial aquifer in the vicinity of the TCS.
- Freshwater injection wells to inject freshwater into wells upgradient of the Cr(VI) plume to flush the plume through the NTH IRZ and to constrain westward spread of carbon-amended water and in-situ byproducts from the Inner Recirculation Loop.
- A monitoring well network that consists of existing site wells and new monitoring wells.
- Institutional controls (ICs) to restrict surface land uses and prevent the use of groundwater.
- Monitored natural attenuation (MNA) as a long-term component to address residual chromium that may remain in recalcitrant portions of the aquifer after enhanced in-situ treatment and optimized system performance.

### **L1.1.1 Remedial Action Objectives, Completion Criteria/Performance Standards, and Short-Term Goals**

The RAOs for the groundwater remedy are to:

1. Prevent ingestion of groundwater as a potable water source having Cr(VI) in excess of the regional background concentration of 32 micrograms per liter ( $\mu\text{g/L}$ ).
2. Prevent or minimize migration of total chromium (Cr[T]) and Cr(VI) in groundwater to ensure concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11  $\mu\text{g/L}$  Cr[VI]).
3. Reduce the mass of Cr(T) and Cr(VI) in groundwater at the site to achieve compliance with ARARs in groundwater. This RAO will be achieved through the cleanup goal of the regional background concentration of 32  $\mu\text{g/L}$  of Cr(VI).
4. Ensure that the geographic location of the target remediation area does not permanently expand following completion of the remedial action.

The completion criteria or performance standards for the groundwater remedy are mainly driven by RAO #3, reducing Cr(VI) concentrations throughout the plume to concentrations of 32  $\mu\text{g/L}$  or less. Attainment of the completion criteria or achievement of performance standards (Cr[VI] concentrations of 32  $\mu\text{g/L}$  or less) is intended to be applied throughout the area of contaminated groundwater. In establishing this criterion, the following are recognized:

- Attaining the cleanup criterion of 32  $\mu\text{g/L}$  Cr(VI) in groundwater may be achieved through active remediation or through natural attenuation.
- Different areas of the plume may reach the cleanup criterion of 32  $\mu\text{g/L}$  Cr(VI) in groundwater at different times.

Additional discussions about the Corrective Measures/Remedial Action Completion Criteria are included in Section L4.



In addition to the RAOs, short-term goals and criteria are being developed in coordination with DTSC and DOI to facilitate future evaluations of remedy performance including assessments of whether the remedy is Operational and Functional (OF) and Operating Properly and Successfully (OPS).

Pursuant to CERCLA, 40 CFR § 300.435(f)(2), the groundwater remedy becomes OF either one year after construction is complete, or when the groundwater remedy is determined concurrently by DOI and DTSC to be functioning properly and is performing as designed, whichever is earlier. DOI may grant extensions to the one-year period, as appropriate. This period is often referred to as “commissioning” or “shakedown,” when the construction contractor(s) make minor adjustments as necessary to ensure the remedy is operating as designed.

Pursuant to Exhibit A to the Settlement Agreement between DTSC and the FMIT (DTSC 2012), the groundwater remedy is considered to be OPS when a) the remedy is operating as designed, b) the information obtained from remedy operation indicates that the remedy is protective of human health and the environment, and c) the remedy is likely to be able to achieve the cleanup levels or performance goals delineated in the DTSC’s Statement of Basis (DTSC 2011a) and the DOI’s Record of Decision (ROD; DOI 2010) for the groundwater remedy at the PG&E Topock Site. In general, OPS is expected within 1 to 2 years of the beginning of remedy start-up.

### **L1.1.2 Incorporation of ARARs and EIR Mitigation Measures into Operation and Maintenance**

CERCLA remedial actions are required to comply with the substantive requirements of identified ARARs. Therefore, the operation and maintenance as well as sampling and monitoring of the final groundwater remedy incorporates the requirements of ARARs documented in the ROD (DOI 2010). These ARARs include federal, California, and Arizona chemical-specific, location-specific, and action-specific ARARs. The chemical-specific ARARs have already been incorporated into the RAOs, ensuring that compliance with these ARARs will be attained when the remedy is complete (defined by attainment of the RAOs).

In conformance with the California Environmental Quality Act (CEQA), DTSC prepared and certified the Final Environmental Impact Report (EIR) (DTSC 2011b), and adopted a Mitigation Monitoring and Reporting Program (MMRP) for the groundwater remedy. The MMRP includes mitigation measures for various resources, including aesthetic, air quality, cultural, biological, geology and soils, hazardous materials, hydrology and water quality, noise, and water supply resources.

Identification and demonstration of how the identified EIR mitigation measures and ARARs are being incorporated into the design and remedy O&M are summarized and discussed in tables presented in Section 6 of the 90% BOD Report; copies of these tables are presented as Tables L1.1-1 and L1.1-3, respectively, at the end of this volume (for the reader’s convenience).<sup>1</sup> In addition, a summary of compliance with applicable Cultural Impact Mitigation Program (CIMP; PG&E 2014) protocols, Programmatic Agreement (PA; BLM 2010) stipulations, and Cultural and Historic Properties Management Plan (CHPMP; BLM 2012) provisions<sup>2</sup> are included in Tables L1.1-2, L1.1-4, and L1.1-5, respectively.

## **L1.2 Organization and Content of O&M Manual**

In conformance with the 1996 CACA and the 2013 CD requirements, this O&M Manual is organized into the following sections:

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<sup>1</sup> The compliance tables in this O&M Manual are copied directly from Section 6 of the Basis of Design Report to which this O&M Manual is an appendix. The table numbers have been changed, but the contents of the tables are unchanged. This includes the reference citations, which correspond to the References List (Section 9) of the BOD Report, not the References List in this O&M Manual. Please refer to Section 9 of the BOD Report to identify the sources cited in these tables in the O&M Manual. References within the tables to Tables 6.1-1, 6.1-2, 6.2-1, 6.2-1A, 6.2-2, and 6.2-3 of the BOD Report correspond to Tables L1.1-1, L1.1-2, L1.1-3, L1.1-3A, L1.1-4, and L1.1-5, respectively, in this document.

<sup>2</sup> Per DOI’s comment #511 DOI-190 on the 60% BOD Report, “It should be noted that additional CHPMP measures may be identified during ongoing consultation meetings with the Tribes, and the CHPMP will be modified accordingly.”

- Section 1 describes the groundwater remedy and the RAOs, summarizes how the plans included herein have complied and will continue to comply with the ARARs and EIR MMRP, and describes the organization and content of this O&M Manual.
- Section 2 describes the levels of authority and responsibility (including organization chart), lines of communication, and the qualifications /training of personnel who will operate and maintain the corrective measure.
- Section 3 describes the framework for the evaluation of analytical data and field measurements, along with the documentation, management, and maintenance of information. Details are presented in Volume 2 of the manual.
- Section 4 discusses the process and criteria for determining when the corrective measure/remedial action may cease. This section also describes the process and criteria for determining when maintenance and monitoring may cease.
- Section 5 provides reference information for the works cited in this report.

This O&M Manual also includes the following five volumes consisting of related project plans:

- **Volume 1 (Operation and Maintenance Plan)** describes the main remedy system and its supporting systems, discusses procedures for O&M including start-up/shutdown and replacement schedule for equipment and system alarms, describes means and methods for well and pipeline maintenance, and describes waste management practices and other site management practices such as road maintenance, stormwater pollution prevention, and hazardous material management. Detailed standard operating procedures (SOPs) for O&M tasks are included in this volume.
- **Volume 2 (Sampling and Monitoring Plan)** presents the goals and data quality objectives for sampling and monitoring of groundwater, surface water, and process water, along with details (i.e., sampling locations, analytes, and sampling frequencies) for various monitoring programs including remedy compliance monitoring, in-situ remediation performance monitoring (including monitoring of the upland injected water quality), monitoring for other constituents of potential concern (COPCs) (selenium, molybdenum, and nitrate), monitoring of freshwater source, process control monitoring for the remedy-produced water management system, and domestic/private well monitoring. This volume also includes sampling methods and procedures as well as data management, documentation, and reporting.
- **Volume 3 (Contingency Plan)** presents contingency planning and procedures to address potential operational problems, equipment failures, failures due to “acts of god,” etc.
- **Volume 4 (Soil Management Plan)** presents sampling protocols and analysis for soil and the plan for managing soils during O&M, consistent with the established displaced material handling protocols. Also presented are a sampling and analysis plan to document baseline soil conditions prior to remedy implementation, and a plan to implement Best Management Practices (BMPs) to prevent or reduce storm water pollution related to soil storage activities during remedy construction and O&M.
- **Volume 5 (Project Health and Safety Plan)** presents the Project HSP which provides a framework for safe operation and maintenance of the remedy and includes procedures that will apply to PG&E employees who may operate and maintain the remedy. Any contractor who may be involved in the operation and maintenance of the remedy will be required to prepare its own site-specific HSP in conformance with this Project HSP that addresses their specific scope of work. Contractor personnel will be required to sign a form acknowledging that they understand and will fully comply with their own HSP.

# Project Management, Communication Framework, and Workers Training

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As required by the 1996 CACA and 2013 CD (DTSC 1996; DOI 2013), this section describes the management approach for this project, including levels of authority and responsibility, lines of communication, and qualifications of key personnel who will operate and maintain the remedy. In addition, this section also describes training for O&M personnel and presents a framework for communication during the O&M phase of the project.

## L2.1 Project Management

PG&E is committed to implementing the design and remedial action in an effective manner that is safe, sustainable, and respectful to the sacredness and sensitivity of the cultural, historical, and biological resources at or near the Topock site, while complying fully with all regulatory mandates.

PG&E has chartered an implementation team with the accountability to ensure that the above commitment is fulfilled. Exhibit L2.1-1 presents the overall PG&E Topock Groundwater Remedy Implementation Project Team organization chart. This project organization is intended to be a “living” element throughout the remedy implementation, meaning that it can be updated as new information becomes available as the project proceeds or as site circumstances change.

Exhibit L2.1-2 summarizes the qualifications and project roles of key personnel, as well as their levels of authority and responsibility and lines of communication.

The primary remedial design contractors (CH2M HILL, Alisto, ARCADIS, and AECOM) report to Ms. Yvonne Meeks, the PG&E Project Manager, and are responsible for preparation of the design documents as required by the CACA and CD, as well as the O&M Plan and the Construction/Remedial Action Work Plan (CH2M HILL 2014a). Again, this is intended to be a living element of the remedy implementation that can be updated as project circumstances change. Note that in addition to CH2M HILL, Applied Earthworks (AE), and ARCADIS, other qualified contractors may also be utilized to prepare select documents to comply with ARARs and mitigation measures.

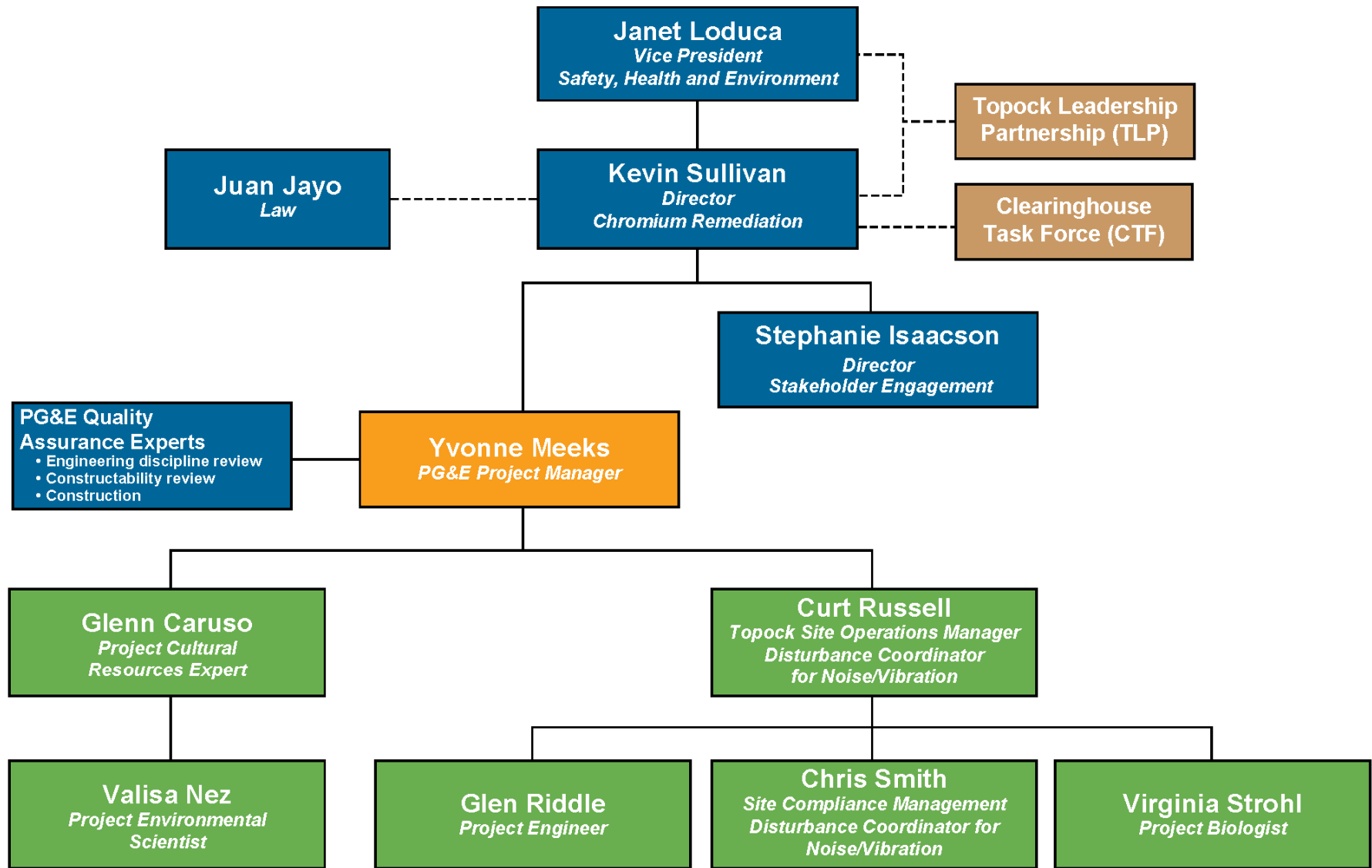
At the time of the preparation of this O&M Manual, contractor(s) for the construction and O&M of the groundwater remedy have not been identified.

## L2.2 Summary of Communication Procedures and Protocols

This section presents a summary of communication procedures and protocols to be used during the operation and maintenance of the project, and is intended to be used by PG&E to inform, seek inputs, seek approval (from agencies), resolve issues, and/or comply with requirements. This summary is a compilation of the communication procedures and protocols specified in various project directives and agreements (e.g., the CACA, CD, EIR mitigation measures, PA, Programmatic Biological Assessment (PBA), CHPMP, CIMP, HMBP, and Section 1600 Avoidance and Minimization Measures) and relevant state and federal requirements (e.g., those related to reporting of releases of fuels or hazardous materials). This communication framework is intended to be a dynamic “living” element throughout the remedy implementation, meaning that it can be updated as new information becomes available as the project proceeds or as site circumstances change.

In general, project communications occurs in two forms -- routine (regular periodic communication) and non-routine (communication when the project experiences unexpected changes during O&M). Communication could be spoken, written, or both. Examples of routine communication include quarterly Consultative Working Group (CWG) meetings and quarterly progress reports. Examples of non-routine communication include notification of a pipeline leak or unplanned system shutdown. Exhibit L2.2-1 identifies triggering events, party or parties initiating communication, party or parties receiving communication, and general communication protocols and procedures.





**EXHIBIT L2.1-1**  
Project Team Organization Chart  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California



EXHIBIT L2.1-2

**Key Project Personnel, Qualifications, Levels of Authority and Responsibility, and Lines of Communication**  
*Groundwater Remedy Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Key Personnel	Project Role, Summary of Qualifications, and Lines of Communication
<b>Janet Loduca</b>	<b>PG&amp;E Vice President Safety, Health, and Environmental</b> Ms. Loduca is the executive sponsor of the project and represents PG&E at the executive level on the Topock Leadership Partnership (TLP). Ms. Loduca has served in this role since 2011.
<b>Kevin Sullivan</b>	<b>PG&amp;E Director of Chromium Remediation</b> Mr. Sullivan reports to Ms. Loduca; he has the overall responsibility for the project direction and implementation, and represents PG&E at the executive level on the Clearinghouse Task Force (CTF). Mr. Sullivan has served in this role since June 2014.
<b>Stephanie Isaacson</b>	<b>PG&amp;E Director of Stakeholder Engagement</b> Ms. Isaacson has the overall responsibility for community relations, outreach programs, and stakeholder engagement. Ms. Isaacson has served in this role since 2011.
<b>Juan Jayo</b>	<b>Legal</b> Mr. Jayo has the overall responsibility for the legal aspects of the project and reports to the General Counsel of PG&E. Mr. Jayo has served in this role since 2005.
<b>Yvonne Meeks</b>	<b>PG&amp;E Project Manager</b> Ms. Meeks reports to Mr. Sullivan; she is responsible for the technical direction and the day-to-day execution of the project. Ms. Meeks has served in this role since 2004.
<b>Curt Russell</b>	<b>PG&amp;E Topock Site Operations Manager</b> Mr. Russell reports to Ms. Meeks; he is responsible for all aspects of Topock site/local operations related to the project. Mr. Russell has served in this role since 2005. For the groundwater remedy implementation, Mr. Russell is also a designated disturbance coordinator for noise/vibration.
<b>Glenn Caruso</b>	<b>PG&amp;E Project Cultural Resources Expert</b> Mr. Caruso reports to Ms. Meeks; he is the project liaison for issues related to cultural resources and historic properties. Mr. Caruso has served in this role since 2004.
<b>Virginia Strohl</b>	<b>PG&amp;E Project Biologist</b> Ms. Strohl reports to Mr. Russell; she is the project liaison for issues related to biological resources. Ms. Strohl has served in this role since June 2012.
<b>Chris Smith</b>	<b>PG&amp;E Site Compliance Management</b> Mr. Smith reports to Mr. Russell; he is responsible for the overall site compliance management activities. Mr. Smith has served in this role since 2005. For the groundwater remedy implementation, Mr. Smith is also a designated disturbance coordinator for noise/ vibration.
<b>Glen Riddle</b>	<b>Project Engineer</b> Mr. Riddle reports to Mr. Russell; he is responsible for the overall engineering design activities. Mr. Riddle has served in this role since 2012.
<b>Valisa Nez</b>	<b>Project Environmental Scientist</b> Ms. Nez reports to Mr. Caruso; she is the project liaison for issues related to regulatory compliance. Ms. Nez has served in this role since January 2013.
<b>PG&amp;E In-House Quality Assurance Team</b>	<b>PG&amp;E in-house subject matter experts</b> report to Ms. Meeks and will perform review/quality assurance of the remedial design documents prepared by the remedial design contractors. The engineering discipline reviewers will include, but not be limited to, structural, geotechnical, electrical, and instrumentation and controls.





EXHIBIT L2.2-1  
**Communication Framework During Operation and Maintenance**  
*Groundwater Remedy Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Type	Triggering Event	Required By <sup>1</sup>	Party Initiating Communication	Party Receiving Communication <sup>2</sup>	General Communication Procedures/Protocols
Routine Communication	Notification of planned O&M/field activities (including sampling activities and planned downtime)	Cultural Impact Mitigation Program (CIMP) and EIR MMRP measures CUL-1a-8a, CUL-1a-8j, CUL-1a-8l, CUL-1a-8h  EIR MMRP measures NOISE-1b, 2d, and 3b  Consent Decree (CD) #24 Programmatic Agreement (PA) Appendix C Monitoring Protocol  Section 1600 Avoidance and Minimization Measures (AMM) #34	PG&E Topock Site Operations Manager or designee	DTSC, DOI, HNWR, Tribes, CDFW  Project stakeholders	Notify agencies and Tribes monthly of scheduled project-related field activities.  For Tribal monitoring/observation of ground-disturbing activities, notify Tribes as early as possible, but at least three business days in advance of the initiation of the identified project work, whenever possible per the PA’s Monitoring Protocol and not less than one week in advance of the initiation of planned activities (CUL-1a-8l/CIMP § 2.12). When activity is imminent and advance notification was not possible, PG&E will place telephone calls to key Tribal representatives (CUL-1a-8j/CIMP § 2.10).  Notify DOI 28 days in advance of sample collection activities, unless shorter notice is agreed to by DOI (CD ¶124). In the event short-order sampling/field activity needs occur, PG&E will call DTSC and DOI (prior to proceeding with the activity) and then follow up by email. In the event that email or voice mail is not available to PG&E, a text message will be sent to DTSC and DOI prior to proceeding with the activity and then a follow-up by email.  Notify CDFW at least 5 days prior to initiation of construction (project) activities and at least 5 days prior to completion of construction (project) activities (Section 1600 AMM #34).  See also CIMP § 2.8.5 for details related to, depend on activities, notifications to nearby vibration-sensitive and noise-sensitive receptors.
	Progress reporting	Corrective Action Consent Agreement (CACA) Attachments 6 and 7  CD ¶132; CD, Appendix C, Section 5	PG&E Project Manager (PM) or designee	DTSC, DOI	Quarterly during O&M; Exhibit L2.2-2 presents a template for the Quarterly O&M Progress Reports.
	EIR mitigation measure compliance reporting	EIR MMRP measures CUL-1a-8a, CUL-1a-2, CUL-1a-3b, CUL-1a-11	PG&E PM or designee	DTSC	Quarterly reports via email during design and construction/start-up, and annually during O&M.
	Tribal outreach activities	2006 Settlement Agreement between PG&E and FMIT (Section VIII[A]); PG&E Memoranda of Agreement with various Tribes  EIR mitigation measure CUL-1a-8a	PG&E PM or designee	Tribes, Agencies	Frequent communications with Tribes to address current issues and provide a forecast of upcoming activities (CUL-1a-8a). Additional communications will depend on purpose of the communication and type of info to be exchanged.
Non-Routine Communication (Remedy O&M)	Request for Variance/Notification of Changes				
	Material deviation <sup>5</sup> from Work Plans, Mitigation Monitoring and Reporting Program (MMRP), action-specific and location-specific ARARs, design documents, etc.	This O&M Manual	PG&E PM, PG&E Topock Site OperationsManager, or designee	DTSC, DOI, Interested Tribes	Notify the agencies orally within 3 days of when PG&E first knew of potential material deviations. Submit a variance request form to agencies for approval 5 calendar days before the anticipated work occurs or unless agreed to otherwise with agencies. Exhibit L2.2-3 presents a template for a Work Variance Request Form. Report the material deviations in quarterly progress reports.
	Discovery of event that occurs or has occurred that causes delay in the performance of any obligation under the CD for which PG&E intends to assert a claim of force majeure	CD ¶61	PG&E PM or designee	DOI	Orally within 3 working days of when PG&E first knew the event might cause a delay and written notification within 7 days thereafter.
	Discovery of changes to the schedule described in the progress reports (i.e., change in schedule described in the quarterly progress reports for the performance of any activity including, but not limited to data collection and implementation of work plans)	CD ¶133	PG&E PM, PG&E Topock Site OperationsManager, or designee	DOI	No later than 7 days prior to the performance of the activities, or as otherwise agreed to by DOI and PG&E.
	Changes in chemical use in remedy operation	Resolution to 60% design comment (RTCs #13a, 13b, 854, 863, 868)	PG&E PM or designee	FMIT	Notify Tribes and discuss if requested. PG&E will proceed with making changes as necessary to minimize disruption to operations.
	Confirmation of parameter exceedance of Action Level	This O&M Manual, specifically the Sampling and Monitoring Plan (O&M Volume 2)	PG&E PM or designee	DTSC, DOI	See Sampling and Monitoring Plan - Figures 2.2-11 (Protocol for Notification of Confirmed Exceedance of Action Levels) and 5.1-7 (COPC Perimeter Assessment Plan).

EXHIBIT L2.2-1  
**Communication Framework During Operation and Maintenance**  
*Groundwater Remedy Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Type	Triggering Event	Required By <sup>1</sup>	Party Initiating Communication	Party Receiving Communication <sup>2</sup>	General Communication Procedures/Protocols
	Confirmation of arsenic exceedance in groundwater due to freshwater injection	This O&M Manual, specifically the Sampling and Monitoring Plan (O&M Volume 2)	PG&E PM or designee	DTSC, DOI	See Sampling and Monitoring Plan – Figure 2.2-9 (Freshwater Injection System Decision Rules/ Operational Framework).
	Notification when Contingency Triggers				
	Major breakdown and/or complete failure of the remedy, includes emergency situations such as fires, incidents that result in hospitalization or death, acts of god (e.g., earthquake, flood), etc.	CACA Attachment 6, Item (B)(11)(c) CD ¶52  Programmatic Biological Assessment [PBA] #19 and #22	PG&E PM, PG&E Topock Site OperationsManager, or designee	DTSC, DOI, Affected Land Owners/Managers (FMIT, BOR, BLM, HNWR/ USFWS)  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Call 911 if there is an impact to human health that requires immediate medical attention by emergency response/health care professionals.  Within 48 hrs to BLM (PBA #19 and #22).  Immediate notification to DOI’s Project Manager, or, if the Project Manager is unavailable, DOI’s Alternate Project Manager. To comply with this specific CD requirement, PG&E interprets immediate to be “within 24 hours”.  Within 24 hrs to DTSC orally; within 72 hrs in writing; include in next progress report.  Additional notifications may be required (e.g., spills).
	Releases <sup>3</sup> of EPCRA-listed extremely hazardous substances and CERCLA-listed hazardous substances to the environment that are subject to reporting under EPCRA Section 304.	CACA IV(A)(3) CD ¶34 and ¶35 PBA #19 and #22  Project-specific Hazardous Material Business Plan (HMBP) CERCLA Section 103(a)	PG&E Topock Site Operations Manager, or designee	NRC, EMA, CUPA, DTSC, DOI, Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS)  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Call 911 if there is an impact to human health that requires immediate medical attention by emergency response/health care professionals.  Within 15 minutes verbally to the NRC, EMA and the CUPA. Written follow-up report to EMA and CUPA within 30 days.  Within 24 hrs to DOI PM or if DOI PM is not available, to one of the Bureau (BLM, USFWS, or BOR) PM. Written reports to DOI within 30 days of onset of event and again, within 45 days after conclusion of event (latter report detailing actions taken in response).  Within 48 hrs to BLM (PBA #19 and #22).  Within 48 hrs orally and within 10 days in writing to DTSC; include incident in next progress report.
	Releases <sup>3</sup> of CERCLA-listed hazardous substances to the environment that are reportable under CERCLA Section 103.	CACA IV(A)(3) CD ¶34 and ¶35 PBA #19 and #22  HMBP CERCLA Section 103(a)	PG&E PM, PG&E Topock Site OperationsManager, or designee	NRC, EMA, CUPA, DTSC, DOI, Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS)  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Call 911 if there is an impact to human health that requires immediate medical attention by emergency response/health care professionals.  Within 15 minutes verbally to the NRC, EMA and the CUPA. Written follow-up report to EMA and CUPA within 30 days.  Within 24 hrs to DOI PM or if DOI PM is not available, to one of the Bureau (BLM, USFWS, or BOR) PM. Written reports to DOI within 30 days of onset of event and again, within 45 days after conclusion of event (latter report detailing actions taken in response).  Within 48 hrs to BLM (PBA #19 and #22).  Within 48 hrs orally and within 10 days in writing to DTSC; include incident in next progress report.
	Releases <sup>3</sup> of hazardous materials to the environment reportable under CHSC Section 25501 and 19 CCR 2703	CACA IV(A)(3) HMBP PBA #19 and #22  CHSC Section 25501, 19 CCR 2703	PG&E PM, PG&E Topock Site OperationsManager, or designee	NRC if over reportable quantity, EMA, CUPA, DTSC, DOI, Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS)  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Call 911 if there is an impact to human health that requires immediate medical attention by emergency response/health care professionals.  Immediate verbal report to EMA and CUPA. Written follow-up report within 30 days. Include incident in next progress report.  Within 48 hrs to BLM (PBA #19 and #22).  Within 48 hrs orally and within 10 days in writing to DTSC; include incident in next progress report.
	Release of oil to navigable waters of the US or adjacent shorelines in quantity that causes a sheen on the water or a violation of applicable water quality standards.  Release of any quantity of oil to waters of the State, or release of 1 barrel (42 gallons) or more to a location on land where it could potentially enter waters of the State.	33 USC 1321 CWC Section 13272 Calif. State Oil Spill Contingency Plan  Fuel SOP (EIR MMRP HAZ-1b)	PG&E PM, PG&E Topock Site OperationsManager, or designee	NRC (for spills to waters of the US), EMA, DTSC, DOI, Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS),  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Within 15 minutes to NRC and EMA.

EXHIBIT L2.2-1  
**Communication Framework During Operation and Maintenance**  
*Groundwater Remedy Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Type	Triggering Event	Required By <sup>1</sup>	Party Initiating Communication	Party Receiving Communication <sup>2</sup>	General Communication Procedures/Protocols
	Release of hazardous waste or hazardous waste constituents that could threaten human health or the environment outside the facility.	CACA IV(A)(3) and Attachment 6, Item B(11)(c) CD ¶52 HMBP PBA #19 and #22 22 CCR 66265.56	PG&E PM, PG&E Topock Site OperationsManager, or designee	EMA, DTSC, DOI, Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS),  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Immediate verbal report to EMA.  Written follow-up report within 15 days to DTSC.  Within 48 hrs to BLM (PBA #19 and #22).  Within 24 hrs orally; within 72 hrs in writing to DTSC; include incident in next progress report.
	Release of DOT-regulated hazardous material during transportation <sup>4</sup> that is reportable under 49 CFR 171.15(b)	49 CFR 171.15	PG&E PM, PG&E Topock Site Operations Manager, or designee	NRC  Affected Land Owners/ Managers (FMIT, BOR, BLM, HNWR/ USFWS  If there is a potential threat to the river, notify MWD and immediate downstream users such as the Chemehuevi Indian Tribe as soon as possible.	Call 911 if there is an impact to human health that requires immediate medical attention by emergency response/health care professionals.  Immediate verbal report to NRC. Written follow-up report within 30 days.

EXHIBIT L2.2-1  
**Communication Framework During Operation and Maintenance**  
*Groundwater Remedy Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Type	Triggering Event	Required By <sup>1</sup>	Party Initiating Communication	Party Receiving Communication <sup>2</sup>	General Communication Procedures/Protocols
	Discovery of human-caused disturbance/human remains or burials/previously unidentified potentially significant cultural, historic, or paleontological resources/dead or injured listed species				
	Discovery of human-caused disturbance to remedy facilities	EIR MMRP measure CUL-1a-3b Site Security Plan	PG&E Topock Site Operations Manager, PG&E Remediation Resources Specialist or designee	DTSC, Landowners involved in the incursion (BLM, USFWS, or FMIT)	Notification protocols per Site Security Plan; summarized in quarterly compliance report.  Additional notifications may be required (e.g., spills).
	Discovery of human remains or burials	EIR MMRP CUL-4 PA Section IX CHPMP (Section 8.2 and Appendix D, Plan of Action)	PG&E Topock Site Operations Manager, PG&E Cultural Resources Expert, Qualified Cultural Resources Consultant, or designee	PG&E’s initial communication is to the San Bernardino County Coroner, and PG&E’s and DTSC’s project managers. The qualified cultural resources consultant shall coordinate the interaction between Interested Tribes, PG&E, the County, and DTSC to determine proper treatment and disposition of any remains.  Human remains found on federal land would require notification of BLM. BLM will then notify the Advisory Council on Historic Preservation, California and Arizona State Historic Preservation Officers, BOR, USFWS, DTSC, relevant County Coroner, and Interested Tribes, The County Coroner will contact the Native American Heritage Commission (NAHC) if it determines the remains are Native American and not related to a crime.	Suspend work in the immediate vicinity of the discovery (not less than 5 meters and not to exceed 50 meters from the discovered remains), and if the discovery is on federal land, notify BLM as soon as possible, but no later than 24 hours of the discovery by telephone, followed by written confirmation within three business days. If the remains are found in California, BLM will notify the County Coroner.  If the discovery is on non-federal/non-Tribal lands in Arizona, then BLM in consultation with PG&E will report the discovery to the Arizona State Museum.  If the discovery is on non-federal/non-Tribal lands in California, then PG&E will notify the County Coroner.  Additional notifications and communications are described in the CHPMP, Appendix D, Plan of Action.
	Discovery of previously unidentified potentially significant cultural, historical, and/or paleontological resources	PBA #29 EIR MMRP measure CUL-1b/c-4 PA Section IX CHPMP (Section 8.1 and Appendix C Discovery Plan) CIMP (CUL-1a-8b/o)	PG&E Topock Site Operations Manager, PG&E Cultural Resources Expert, Qualified Cultural Resources Consultant, or designee	PG&E’s initial communication is to BLM and the Tribes, if the resource is Native American in nature. BLM will then notify the Advisory Council on Historic Preservation, California and Arizona State Historic Preservation Officers, BOR, USFWS, the Tribes (if not already notified) and DTSC.	Suspend work in the immediate vicinity of the discovery (not less than 5 meters and not to exceed 50 meters from the discovered remains), notify BLM and the Tribes, if the resource is Native American in nature, immediately.  Qualified archaeologists will inspect and evaluate any new sites that may be discovered during construction and will notify Tribal Monitors of the discovery. Tribal Monitors will then inspect and evaluate the new site(s) (CIMP, Subsections 2.2 and 2.15, EIR MMRP measures CUL-1a-8b and 8o).
	Locate dead or injured listed species	PBA #28	PG&E Topock Site Operations Manager, PG&E Project Biologist or designee	BLM, USFWS	Notify Agencies within 3 working days of its finding.

**Notes:**

<sup>1</sup> EIR MMRP = Environmental Impact Report Mitigation Measures Reporting Program (DTSC 2011b), PA = Programmatic Agreement (BLM 2010), CD = Consent Decree (DOI 2013), PBA = Programmatic Biological Assessment (CH2M HILL 2014b), CHPMP = Cultural and Historic Properties Management Plan (BLM 2012), CACA = Corrective Action Consent Agreement (DTSC 1996), HMBP = Hazardous Materials Business Plan (see Appendix F of the O&M Plan [Volume 1 of this O&M Manual]), AMM = Avoidance and Minimization Measures, CIMP = Cultural Impact Mitigation Program (PG&E 2014).

<sup>2</sup> Agencies: ADEQ = Arizona Department of Environmental Quality; BLM = U.S. Bureau of Land Management; BOR = U.S. Bureau of Reclamation; DOI = U.S. Department of the Interior; DTSC = California Department of Toxic Substances Control; HNWR = Havasu National Wildlife Refuge; MWD = Metropolitan Water District; RWQCB = Regional Water Quality Control Board; USFWS = U.S. Fish and Wildlife Service; NRC = National Response Center, California Emergency Management Agency = EMA, CUPA = California Unified Permitting Agency, CDFW = California Department of Fish and Wildlife.

<sup>3</sup> Excludes permitted discharge of materials and release of hazardous materials/waste into secondary containment areas that is not released to the environment

<sup>4</sup> Transportation includes loading, offloading, and storage of DOT-regulated vehicle/trailer. Notify the NRC in the event of a transportation incident involving death, hospitalization, damage greater than \$50,000, roadway shutdown or public evacuation exceeding 1 hour, fire, breakage or spillage.

<sup>5</sup> This notification excludes changes that are considered process improvemmts and system optimization which are anticipated over decades-long operation. The need for and the timing/frequency of updating this O&M Manual will be discussed with the agencies as remedy start-up and operation progresses. Operations staff will have the latest SOPs on file at the site.



## **PG&E Topock Compressor Station Groundwater Remediation Project Quarterly Progress Report for Remedy Operation and Maintenance [Indicate Reporting Period]**

### **Table of Contents**

#### **1. Introduction**

PG&E is implementing the groundwater remedy to address chromium in groundwater at Solid Waste Management Unit (SWMU) 1/Area of Concern (AOC) 1 and AOC 10 near the Topock Compressor Station, in conformance with the requirements of the Resource Conservation and Recovery Act (RCRA) Corrective Action and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The groundwater remedy includes:

- Construction of an In-situ Reactive Zone (IRZ) along National Trails Highway (NTH) using a line of wells that may be used as both injection and extraction wells to circulate groundwater and distribute an organic carbon source to promote bacteriological reduction of the Cr(VI) to Cr(III).
- Flushing accomplished through a combination of fresh water injection and injection of carbon-amended water in wells upgradient of the plume.
- Extraction wells near the Colorado River to provide hydraulic capture of the plume, accelerate cleanup of the floodplain, and enhance the flow of contaminated groundwater through the IRZ line.
- Bedrock extraction wells in the eastern (downgradient) end of the East Ravine to provide hydraulic capture of contaminated groundwater in bedrock.
- Institutional controls to restrict surface land uses and prevent the use of groundwater.
- Monitored natural attenuation (MNA) as a long-term component to address residual Cr(VI) that may remain in recalcitrant portions of the aquifer after enhanced in-situ treatment.

The Remedial Action Objectives (RAOs) for the groundwater remedy are to:

1. Prevent ingestion of groundwater as a potable water source having Cr(VI) in excess of the regional background concentration of 32 micrograms per liter ( $\mu\text{g/L}$ ).
2. Prevent or minimize migration of total chromium (Cr[T]) and Cr(VI) in groundwater to ensure concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11  $\mu\text{g/L}$  Cr[VI]).
3. Reduce the mass of Cr(T) and Cr(VI) in groundwater at the site to achieve compliance with ARARs in groundwater. This RAO will be achieved through the cleanup goal of the regional background concentration of 32  $\mu\text{g/L}$  of Cr(VI).
4. Ensure that the geographic location of the target remediation area does not permanently expand following completion of the remedial action.

The completion criteria or performance standards for the groundwater remedy is mainly driven by RAO #3, reducing Cr(VI) concentrations throughout the plume to concentrations of 32  $\mu\text{g/L}$  or less. Attainment of the completion criteria or achievement of performance standards, Cr(VI) concentrations of 32  $\mu\text{g/L}$  or less, is intended to be applied throughout the area of contaminated groundwater. In establishing this criterion, the following are recognized:

- Attaining the cleanup criteria of 32  $\mu\text{g/L}$  Cr(VI) in groundwater may be through active remediation or through natural attenuation.
- Different areas of the plume may reach the cleanup criteria of 32  $\mu\text{g/L}$  Cr(VI) in groundwater at different times.

EXHIBIT L2.2-2

#### **Quarterly Progress Report Template**

*Groundwater Remedy Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California*

In compliance with the 1996 CACA (Attachment 6, Part B, Section 12 and Attachment 7) and the 2013 RD/RA CD, Appendix C, Section 5, this quarterly report describes activities taken to implement the Corrective Measure/Remedial Action since last reporting period and activities planned for the next reporting period, presents available results from sampling and testing since last reporting period, summarizes progress towards attaining the RAOs, any issues encountered/deviations from design documents, O&M Manual, and Construction/Remedial Action Work Plan, and any optimizations and enhancements. In addition, this report discusses personnel changes and summarizes activities performed and activities planned in support of the Community Relation Plan and any contacts with local community, representatives of the press, and stakeholders/Tribes.

## **2. Operations Summary**

*Describe routine and non-routine system downtime, operational data (listed below) and process monitoring data (listed below) (including percentage of time treatment systems were operational on a monthly basis, quantity of water recovered for treatment, as well as cumulative total, quantity of ethanol injected, etc.), utilities and consumables used and waste handling/disposal, any issues encountered with system operation, any personnel changes, any system optimizations and maintenance that were performed, and any material deviations from design documents, O&M Manual, and Construction/Remedial Action Work Plan.*

- *In-situ remediation - volume of water recirculated, volume of ethanol (or other carbon substrate) injected, volume of well rehabilitation chemicals used, carbon amendment system monitoring data (as needed)*
- *Freshwater supply – volume of water extracted and injected, percentage of time the extraction pumps were operating on a monthly basis*
- *Remedy-produced water management – volume of water managed through the conditioning process, percentage of time the conditioning system was operational on a monthly basis*

## **3. Performance Summary**

*Describe monitoring events and sampling performed during the current reporting period, the sampling results and interpretation of results (including volume of water collected and treated, Cr(VI) mass treated, influent-effluent data, etc.), an interpretation of progress toward RAOs, and any material deviations from design documents, O&M Manual, and Construction/Remedial Action Work Plan (e.g., gaps or inconsistencies in the site conceptual model)*

- *In-situ remediation*
- *Freshwater supply*
- *Remedy-produced water management*

## **4. Green Remediation Evaluation Matrix (GREM) Summary**

*Summarize the O&M GREM and any changes since last reporting period.*

## **5. Summary of Activities in Support of the Community Relations Plan and Contacts with the Press, Local Community, and Stakeholders/Tribes**

*Summarize activities performed in support of Community Relation Plan and contacts with local community, representatives of the press, and stakeholders/Tribes, if any.*

## **6. Recommendations**

*Provide suggestions for system optimizations or procedural enhancements, as applicable, to improve performance, reduce costs, reduce wastes, etc. Optimizations and/or enhancements could be based on system inefficiencies, technological developments, modified regulations, etc.*

## **7. Planned Activities for Next Reporting Period**

*Provide planned activities of the next reporting period (O&M activities, groundwater/surface monitoring events, activities in support of the Community Relations Plan, etc.).*

## **8. References**

EXHIBIT L2.2-2 (Continued)  
**Quarterly Progress Report Template**  
*Groundwater Remedy Operation and Maintenance Manual*



PG&E Topock Compressor Station, Needles, California **PG&E TOPOCK GROUNDWATER  
REMEDATION PROJECT  
WORK VARIANCE REQUEST FORM**



Request Prepared By: \_\_\_\_\_ Request Approval From: \_\_\_\_\_  
Date Submitted: \_\_\_\_\_ Date Approval Required: \_\_\_\_\_  
Variance Request No.: \_\_\_\_\_ Map Area: \_\_\_\_\_  
Location: \_\_\_\_\_

Landowner: \_\_\_\_\_ Landowner Parcel Number(s): \_\_\_\_\_

Current Vegetative Cover/Land Use: \_\_\_\_\_

Existing Sensitive Resource? ☐ NO ☐ YES Specify: \_\_\_\_\_

Variance From: ☐ MITIGATION MEASURE ☐ WORKPLAN/PROCEDURE ☐ RESPONSE TO COMMENTS  
☐ DRAWING ☐ PERMIT CONDITION ☐ OTHER

**Detailed Description of Variance and Justification** (Attach additional information if necessary):

Attachments: ☐ PHOTO ☐ CONSTRUCTION DRAWING ☐ AERIAL PHOTO MARK-UP ☐ CORRESPONDENCE ☐ OTHER \_\_\_\_\_

**Potential Impacts of Variance:**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> AIR QUALITY          | <input type="checkbox"/> HAZARDOUS MATERIALS         | <input type="checkbox"/> AESTHETIC       |
| <input type="checkbox"/> BIOLOGICAL RESOURCES | <input type="checkbox"/> NOISE                       | <input type="checkbox"/> WATER RESOURCES |
| <input type="checkbox"/> GEOLOGY AND SOILS    | <input type="checkbox"/> PALEO RESOURCES             |  |
| <input type="checkbox"/> CULTURAL RESOURCES   | <input type="checkbox"/> HYDROLOGY AND WATER QUALITY |  |

**Description and Justification:**

EXHIBIT L2.2-3

**Work Variance Form**

Groundwater Remediation Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

## L2.3 Workers Training

PG&E is committed to implementing the remedial action in a manner that is respectful of the sacredness and sensitivity of the resources at and near the project area. To that end, PG&E and its contractors will fully comply with the mitigation measures set forth to minimize impacts to the sensitive resources as well as protocols and/or provisions that are in the Cultural Historic Properties Management Plan (BLM 2012) and in the CIMP. Consistent with its obligations under the Programmatic Agreement's Monitoring Protocol, existing PG&E standard practice, and the EIR MMRP requirements, cultural sensitivity training is required of all staff, workers, and contractors engaged in activities within the Area of Potential Effect (APE) and the EIR Project Area to familiarize them with the sacred nature and cultural significance of the area so that they will perform their jobs in a respectful manner. This training includes discussion of appropriate behavior, activities that are to be avoided and consequences for noncompliance. Consistent with these obligations, PG&E will not tolerate any disrespectful behavior in the field and will remove any staff, workers, or contractors who do not comply with this section. In addition, all workers will be required to comply with the training requirements specified in the overall Project HSP (see Volume 5 of the O&M Manual) and their own site-specific HSP specific to their operations on the project.

### Cultural and Historical Resources

Cultural and historical resources sensitivity education has been a central part of the Topock remediation project to date. The existing education on cultural/historical resources sensitivity for Topock occurs via periodic training and project initiation meetings. Sensitivity training classes are conducted at least annually, and are attended by all workers available to participate. Sensitivity training/education is also provided at project initiation meetings, typically held at the site and prior to field work. Site orientation will stress that all site activities will be conducted in a respectful manner. Sensitivity training will be provided by PG&E Site Operations Manager, PG&E Remediation Resources Specialist, and PG&E will invite participation from the Tribes, archaeological monitors, and agency staff, as appropriate.

Several EIR mitigation measures associated with the groundwater remedy (e.g., CUL-1a-13, CUL-1b/c-4, CUL-4) are related to continued training of workers regarding cultural resources, historical resources, and the identification of human remains. In compliance with CUL-1a-13, PG&E has prepared, in coordination with agencies and Tribes, educational materials used in Orientation sessions for the Topock project. In addition, PG&E has prepared a protocol for the development of a cultural sensitivity education program to educate workers (included as an appendix to the Construction/ Remedial Action Work Plan). Implementation of this protocol is underway.

With regards to CUL-1b/c-4, consistent with CUL-1a-3, PG&E has retained AE, a consulting firm with qualified cultural resources consultants, to observe ground-disturbing activities and provide training to workers as required. For implementation of CUL-4, qualified cultural resources consultant(s) and designated tribal monitor(s) will train construction personnel in the identification of human remains and potential burial goods so they may aid in their identification (see guidance for implementing CUL-4 in an appendix to the Construction/ Remedial Action Work Plan).

### Biological Resources

As with cultural and historical resources, biological resources sensitivity education has also been a central part of the Topock project. PG&E's education program covering threatened and endangered species and the general project management measures specified under the PBA is provided at project initiation meetings, typically held at the site and prior to field work. The training is provided by the PG&E Topock Site Operations Manager, the PG&E Project Biologist, and supporting contract biologists. New employees will receive the training prior to working onsite.

In accordance with the PBA, a PG&E-designated Field Contact Representative (FCR) will be responsible for overseeing compliance with the mitigation measures. The FCR has the authority to halt activities that pose a danger to listed species and/or are in violation with the mitigation measures. A qualified biologist will conduct a preconstruction survey immediately prior to initiation of ground disturbing activities. Within 60 days of completion of construction activities, the FCR and the qualified biologist will prepare a report for submittal to BLM.

# Data Management, Documentation, and Reporting

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This section describes the overall management and documentation of data anticipated to be collected during remedy operation, and the reporting of those data. Also discussed are the record-keeping and maintenance of the data. Details on methodology for data collection and evaluation of remedy performance are discussed in Section 4 of Volume 2 (Sampling and Monitoring Plan).

## L3.1 Data Management

Three types of data are expected to be collected during implementation of the remedy: field measurement/process monitoring data, onsite laboratory data, and offsite laboratory data. The management of each type of data is described below. Exhibit L3.1-1 presents a simplified data management process for the project.

### Field Measurement/Process Monitoring Data

Field measurements will be collected from the monitoring and remediation well network, the carbon amendment facilities, the remedy-produced water conditioning plant, and the freshwater pre-injection treatment system. Measurements will be conducted in accordance with the SOPs (as described in Section 7.1 of the Sampling and Monitoring Plan [O&M Manual Volume 2] and included in Appendix A of Volume 2), and are recorded manually in a field logbook, field sampling form, tablet computer, and/or process monitoring checklist, or recorded automatically by stationary or handheld data loggers and transmitted to a database using a telemetry system. Periodic field audits by experienced staff will be conducted to verify that SOPs are being followed. Equipment calibration will follow manufacturers' recommendations to ensure data quality. Manually recorded data will be entered and/or transferred into a database. In addition, process monitoring and control data generated in facilities/plants will be automatically recorded into a data historian that resides in the plant control system. The data will be maintained in a database and reviewed by an experienced field staff member or chemist. Historical trends, water quality data, and well construction details will also be made available to the field crew so that anomalous data (compared to historical values) can be identified in a timely manner and field verified/corrected after consulting with an experienced scientist or chemist, as appropriate.

### Onsite Laboratory Data

Certain testing for process control monitoring will be performed at an onsite laboratory in accordance with site-specific SOPs (O&M Manual Volume 2, Appendix A). Onsite lab measurements include Cr(VI), Cr(T), ferrous iron, conductivity, turbidity, pH, nitrate, sulfate, alkalinity, total organic carbon, orthophosphate, manganese, and total dissolved solids (see O&M Manual Volume 2, Section 7.1 for list of measurements and Appendix A for SOPs). Additional measurements could be added in the future.

The onsite lab data will be recorded in a bench log book and entered into a spreadsheet and/or database periodically. Although the onsite data will not be validated using the same procedures as the offsite lab data, they will be reviewed; anomalous results will be identified and reviewed and, if needed, reanalyzed at the direction of the project chemist. Onsite laboratory samples will periodically be analyzed in conjunction with offsite analysis, and the data will be reviewed/compared for quality and accuracy.

### Offsite Laboratory Data

The data flow (electronic and hard copy) from offsite laboratory to the project chemist is tracked to ensure that the data are reviewed and validated in a timely manner. The project chemist will discuss and resolve technical issues, if any, with the laboratory. The laboratory will maintain electronic and hardcopy records sufficient to re-create each analytical event. In compliance with Section XXV of the CD (DOI 2013), PG&E will maintain offsite laboratory records for 10 years following receipt of certification of completion. At the conclusion of the record

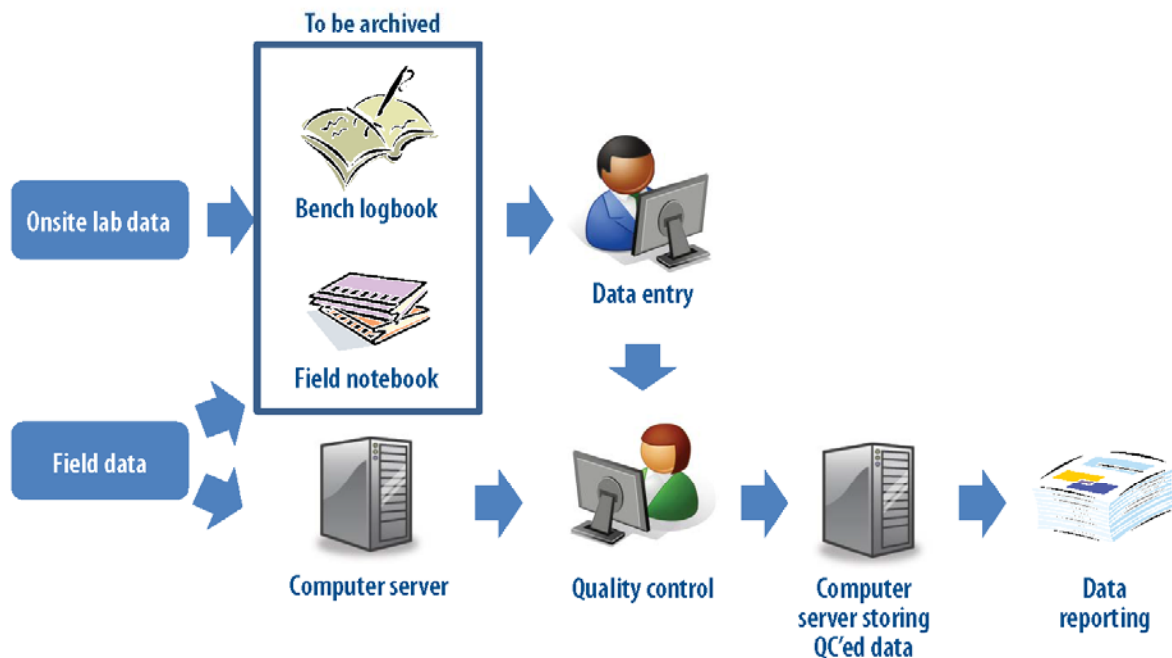
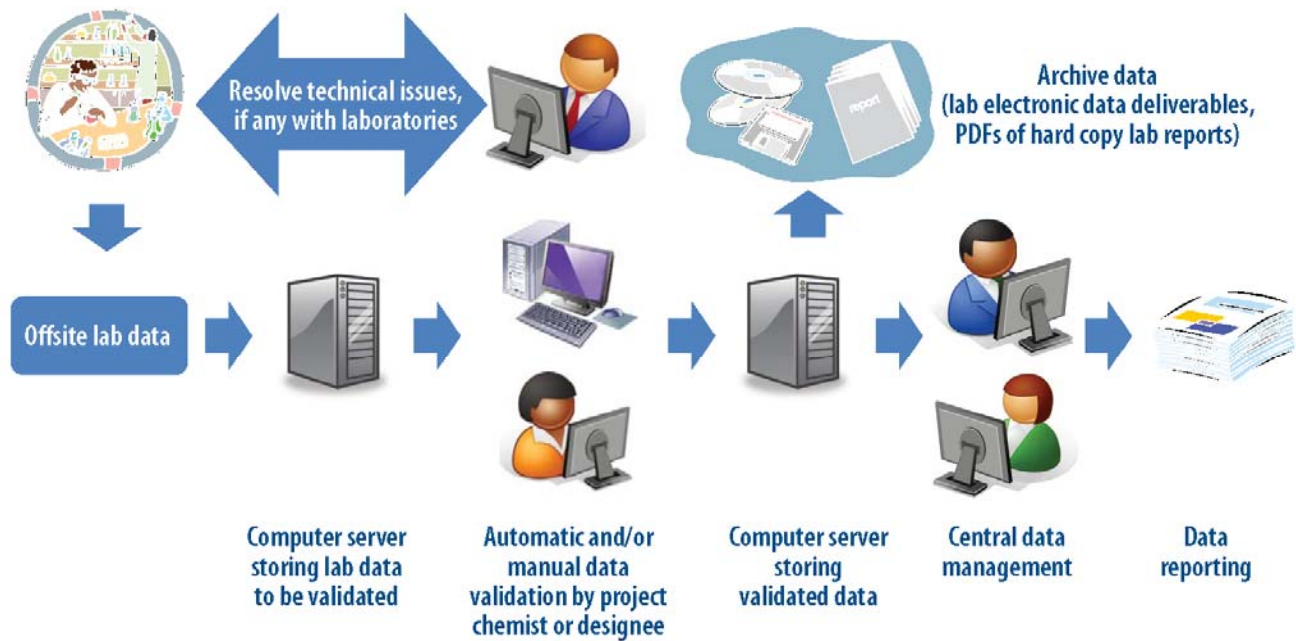


Exhibit L3.1-1  
 Simplified Data Management Process  
 Groundwater Remedy Operation and Maintenance Manual  
 PG&E Topock Compressor Station, Needles, California

retention period, PG&E will notify DOI and DTSC in writing at least 90 days prior to the destruction of any records and will provide DOI and DTSC with the opportunity to take possession of any records. At a minimum, the laboratory will maintain the following records:

- Raw data, including instrument printouts, bench work sheets, and chromatograms, with compound identification and quantitation reports.
- Laboratory-specific, written SOPs for each analytical method and QA/QC function implemented during the analysis of project samples.

### **Maintenance/Calibration Records**

It is the responsibility of the plant/system operators to incorporate regular preventative maintenance into the routine work schedule based on guidelines presented in this plan and the maintenance requirements provided in the manufacturer's manual for each piece of equipment in the plant. Computerized maintenance management programs will be implemented at the facility, as appropriate, to keep track of maintenance requirements. In those cases, operators will access the program to determine required maintenance tasks. The maintenance management program will have the capacity to issue work orders for routine maintenance activities. Records documenting completion of preventative maintenance tasks will be kept onsite.

Hardcopy and electronic versions will be archived in project files, on electronic archive tapes, and/or on other electronic storage media for the duration of remedy operation as specified in Section L3.2 (Recordkeeping). All electronic data will be subject to routine back-up until it is archived for long-term retention.

## **L3.2 Recordkeeping**

In compliance with Section XII of the 1996 CACA (DTSC 1996) and Section XXV of the CD (DOI 2013), PG&E will maintain all records for 10 years following receipt of certification of completion. At the conclusion of the record retention period, PG&E will notify DOI and DTSC in writing at least 90 days prior to the destruction of any records and will provide DOI and DTSC with the opportunity to take possession of any records.

## **L3.3 Reporting**

In compliance with Attachment 7 of the 1996 CACA (DTSC 1996) as well as Section X of the 2013 CD and Section 5 of Appendix C of the 2013 CD (DOI 2013), progress reports will be submitted monthly during construction and quarterly after the remedy has been implemented and demonstrated to be operating as intended. Exhibit L2.2-2 in Section L2 presents a quarterly report template that was developed with guidance from the *O&M Report Template for Ground Water Remedies (with Emphasis on Pump and Treat Systems)* (USEPA 2005). A monthly construction report template is included in the Construction/Remedial Action Work Plan (CH2M HILL 2014a; see Exhibit 2.2-2 of the Work Plan). It is noted that the agencies may request additional information or reports as the remedy progresses.

# Corrective Measures/Remedial Action Completion Criteria

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The RAOs are defined in the DTSC Statement of Basis (DTSC 2011a) and DOI ROD (DOI 2010); as noted above in Section 1.1.1 they are:

1. Prevent ingestion of groundwater as a potable water source having Cr(VI) in excess of the regional background concentration of 32 µg/L.
2. Prevent or minimize migration of Cr(T) and Cr(VI) in groundwater to ensure concentrations in surface water do not exceed water quality standards that support the designated beneficial uses of the Colorado River (11 µg/L Cr(VI)).
3. Reduce the mass of Cr(T) and Cr(VI) in groundwater at the site to achieve compliance with ARARs in groundwater. This RAO will be achieved through the cleanup goal of the regional background concentration of 32 µg/L of Cr(VI).
4. Ensure that the geographic location of the target remediation area does not permanently expand following completion of the remedial action.

The completion criteria or performance standards for the groundwater remedy are mainly driven by RAO #3, reducing Cr(VI) concentrations throughout the plume to concentrations of 32 µg/L or less. During the time prior to attaining these concentrations, an institutional control will be established to prohibit development of the groundwater within the plume as a drinking water source, to meet RAO #1. Following attainment of the Cr(VI) concentrations of 32 µg/L or less, the IC can be lifted. Reducing concentrations of Cr(VI) in groundwater to concentrations of 32 µg/L or less will meet RAO #2 by increasing the level of certainty that surface water quality will continue to remain below surface water quality standards in the future. Reducing concentrations of Cr(VI) in groundwater to concentrations of 32 µg/L or less will meet RAO #4 by reducing, and eventually eliminating, the target remediation area.

Attainment of the completion criteria or achievement of performance standards (Cr(VI) concentrations of 32 µg/L or less) is intended to be applied throughout the area of contaminated groundwater. In establishing this criterion, the following are recognized:

- Attaining the cleanup criteria of 32 µg/L Cr(VI) in groundwater may be through active remediation or through natural attenuation.
- Different areas of the plume may reach the cleanup criteria of 32 µg/L Cr(VI) in groundwater at different times.

MNA is included as a long-term component of the groundwater remedy to address residual chromium that may remain in recalcitrant portions of the aquifer following efforts to enhance and optimize in-situ treatment and flushing systems during the O&M phase. Decisions on specific areas of the plume appropriate for MNA will be made during future evaluations, such as 5-year reviews, based on information about the types and options for active remediation system adjustments, data evaluating the effectiveness of active remediation systems, and location of proposed MNA areas relative to natural reductive zones in the aquifer.

Due to heterogeneity in the aquifer, it is expected that during the decades-long O&M period there will be portions of the site that attain the RAOs at different times. The existing footprint of the plume is expected to change in size and shape, and to diminish. In addition, there may be portions of the site where it could be determined that MNA is appropriate to address residual Cr(VI). During future evaluations, such as 5-year reviews, distinct geographical areas of the site where RAOs have been attained and/or where it has been determined that MNA is appropriate to address residual Cr(VI) could be designated (as appropriate) for Corrective Action/Remedial Action Completion.

For those areas, a Corrective Measure/Remedial Action Completion Report will be prepared. The completion report will demonstrate how the criteria for the completion of the groundwater remedy have been satisfied and outline the criteria for when O&M may cease. A Decommissioning Plan will also be prepared following remedial action completion and/or determination that remedial infrastructure is no longer needed to support the active operation. Post-remediation monitoring and eventual lifting of the IC will be aspects of the Corrective Measure/Remedial Action completion.



# References

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- \_\_\_\_\_. 2011. Letter from Ms. Pamela Innis/DOI to Ms. Yvonne Meeks of PG&E. *PG&E Topock Compressor Station Remediation Site – Revised Groundwater Corrective Measure Implementation/Remedial Design Work Plan for SWMU1/AOC1 and AOC10, PG&E Topock Compressor Station, Needles, California*. November 3.
- \_\_\_\_\_. 2013. Remedial Action/Remedial Design Consent Decree (CD) between the United States of America and Pacific Gas & Electric Company. Case 5:13-cv-00074-BRO-OP, Document 23. Entered November 21.
- U.S. Environmental Protection Agency (USEPA). 2005. *O&M Report Template for Ground Water Remedies (with Emphasis on Pump and Treat Systems)*.



## Tables

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Please note: These compliance tables are copied directly from Section 6 of the Basis of Design Report to which this O&M Manual is an appendix. The table numbers have been changed, but the contents of the tables are unchanged. This includes the reference citations, which correspond to the References List (Section 9) of the BOD Report, not the References List in this O&M Manual. Please refer to Section 9 of the BOD Report to identify the sources cited in these tables. References within the tables to Tables 6.1-1, 6.1-2, 6.2-1, 6.2-1A, 6.2-2, and 6.2-3 of the BOD Report correspond to Tables L1.1-1, L1.1-2, L1.1-3, L1.1-3A, L1.1-4, and L1.1-5, respectively, in this document.



TABLE L1.1-1  
Summary of Compliance with EIR Mitigation Measures  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Resources	Mitigation Number	Mitigation Measure	Which document(s) will contain or satisfy this measure? <sup>1</sup>	Action (Compliance Status)			Date Completed
				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Aesthetics	AES-1	Impacts on Views from Topock Maze Locus B, a Scenic Vista (Key View 5) - The proposed project shall be designed and implemented to adhere to the design criteria presented below.					
Aesthetics	AES-1a	a) Existing mature plant specimens shall be protected in place during construction, operation, and decommissioning phases consistent with CUL1a-5. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation.	Mature Plants Survey Report including map of mature plant species  Aesthetics and Visual Resources Protection and Revegetation Plan	Identification and mapping of mature plant species was completed in August 2011. The survey methodology is summarized in a technical memorandum entitled " <i>Topock Groundwater Remediation Project, Mature Plants Survey Methodology</i> " (CH2M HILL 2011b) and is included in Appendix A3 of the Basis of Design Report. The mature plant map is under preparation and will be used to guide the remedy design and the planning for construction.	The Mature Plants Survey Report (CH2M HILL 2012b) was completed on January 17, 2012, and is included in Appendix A4 of the 60% BOD Report. The report contains surveys results and associated maps, which have been used to guide the design. An overview of the report and the survey results were discussed with interested Tribes on January 26, 2012. Figure 2.4-8 in the 60% BOD Report document presents the mature plant survey information for Key Views 5 and 11.  PG&E biologist Melanie Day and CH2M HILL biologist Marjorie Eisert participated in a field review of planned remedial facilities with the design team on April 23-24, 2012. A field review was also conducted on June 20 by PG&E biologist Virginia Strohl. The purpose of these field reviews along with in office reviews was to ensure the footprints of planned facilities including potential access routes are designed to avoid disturbance of sensitive habitats to the extent feasible.	An addendum to the Mature Plants Survey Report (CH2M HILL 2014j) was completed on May 22, 2014, and is included in Appendix A4 of the 90% BOD Report. The addendum contains surveys results and associated maps for the freshwater well sites (HNWR-1 and Site B) in Arizona as well as potential sites identified for soil storage and/or construction staging west of Moabi Regional Park. Figure 2.4-8 in the 90% BOD Report presents the mature plant survey information for Key Views 5 and 11.The Aesthetics and Visual Resources Protection and Revegetation Plan (CH2M HILL 2014l) is included in an appendix of the Construction/Remedial Action Work Plan.  CH2M HILL biologist Steve Long and E2 biologist Russell Huddleston participated in a field review of planned remedial facilities with the design team on April 7-10, 2014.An additional field review of planned remedial facilities was conducted by CH2M HILL biologist Melissa Fowler and E2 biologist Russell Huddleston on August 6-8, 2014. PG&E biologist Virginia Strohl also led the office reviews of planned facilities and footprints.  The purpose of the field reviews along with in office reviews was to ensure the footprints of planned facilities including access routes and construction footprints are designed to avoid disturbance of mature plant specimens and sensitive habitats to the extent feasible.	The survey methodology tech memo was completed on October 31, 2011, and provided to Interested Tribes on November 8, 2011.  The Mature Plants Survey Report (CH2M HILL 2012b) was completed on January 17, 2012.  An addendum to the Mature Plants Survey Report was completed on May 22, 2014.  The Aesthetics and Visual Resources Protection and Revegetation Plan was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.
Aesthetics	AES-1b	b) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed and shall be implemented consistent with CUL1a-5. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	A revegetation plan for the riparian vegetation along the river will be prepared and submitted with the final design.	A revegetation plan for the riparian vegetation along the river will be prepared and submitted with the final design.	A Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats is included in an appendix of the Construction/Remedial Action Work Plan. The plan was prepared by plant ecologist Russell Huddleston of E2 Consulting under the direction of Linda Cyra-Korsgaard, a CH2M HILL landscape architect licensed in California.  The plan will be implemented consistent with mitigation measure CUL-1a-5.	The Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.
Aesthetics	AES-1c	c) Plant material shall be consistent with surrounding native vegetation.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	This requirement will be incorporated into the revegetation plan, and therefore, will be satisfied by implementation of AES-1b/2c.	This requirement will be incorporated into the revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	This requirement was incorporated into the revegetation plan, and therefore satisfied by implementation of AES-1b/2c.	

TABLE L1.1-1  
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PG&E Topock Compressor Station, Needles, California

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				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Aesthetics	AES-1d	d) The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity along the view corridor. Integral color concrete should be used in place of standard gray concrete.	Design submittals	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of this Basis of Design Report for the preliminary design. In addition, the detailed specification for colors will also be included the intermediate (60%) design.	The requirement of this mitigation measure was incorporated into the design criteria as presented in Appendix C of the 60% BOD Report. The detailed specification for colors are included in Appendix E of the 60% BOD Report.	The requirement of this mitigation measure was incorporated into the design criteria as presented in Appendix C of the 90% BOD Report. The detailed specification for colors are included in Appendix E of the 90% BOD Report.	
Aesthetics	AES-1e	e) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	This requirement will be incorporated into the revegetation plan, and therefore, will be satisfied by implementation of AES-1b/2c.	This requirement will be incorporated into the revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	This requirement will be incorporated into the final revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	
Aesthetics	AES-2	Impacts on Views from Colorado River, a Scenic Resources Corridor (Key View 11) - The proposed project shall be designed and implemented to adhere to the design criteria presented below:					
Aesthetics	AES-2a	a) A minimum setback requirement of 20 feet from the water (ordinary high water mark or OHWM) shall be enforced, except with regard to any required river intake facilities, to prevent substantial vegetation removal along the river bank.	Design submittals	The OHWM along the bank of the Colorado River, from the mouth of Bat Cave Wash to the BNSF railroad bridge, was mapped in March 2011. The OHWM methodology is summarized in a technical memorandum entitled “ <i>Topock Groundwater Remediation Project, Ordinary High Water Mark Mapping Methodology</i> ” (CH2M HILL 2011d) and is included in Appendix A3 of this Basis of Design Report.  A 20-feet setback from the OHWM was used to guide the placement of the River Bank Extraction Wells and associated infrastructure in the floodplain. A map showing the OHWM and the 20-feet setback is included in Figure 2-17 of the 30% BOD Report.	Figure 2.4-6 in the 60% BOD Report illustrates that the locations of the River Bank Extraction Wells and associated piping met the 20-foot setback requirement.	Figure 2.4-6 in the 90% BOD Report illustrates that the locations of the River Bank Extraction Wells and associated access road/piping corridor met the 20-foot setback requirement.	The mapping methodology technical memorandum and a map with the 20-foot setback from the OHWM were submitted on November 18, 2011.



TABLE L1.1-1  
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				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Aesthetics	AES-2b	b) Existing mature plant specimens shall be protected in place during construction, operation, and decommissioning phases. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL1a-5.	Mature Plants Survey Report including map of mature plant species  Aesthetics and Visual Resources Protection and Revegetation Plan	Identification and mapping of mature plant species was completed in August 2011. The survey methodology is summarized in a technical memorandum entitled " <i>Topock Groundwater Remediation Project, Mature Plants Survey Methodology</i> " (CH2M HILL 2011b) and is included in Appendix A3 of this Basis of Design Report. The mature plant map is under preparation and will be used to guide the remedy design and the planning for construction.	The Mature Plants Survey Report (CH2M HILL 2012b) was completed on January 17, 2012, and is included in Appendix A4 of the 60% BOD Report. The report contains surveys results and associated maps, which have been used to guide the design. An overview of the report and the survey results were discussed with interested Tribes on January 26, 2012. Figure 2.4-8 in the 60% BOD Report presents the mature plant survey information for Key Views 5 and 11.  PG&E biologist Melanie Day and CH2M HILL biologist Marjorie Eisert participated in a field review of planned remedial facilities with the design team on April 23-24, 2012. A field review was also conducted on June 20 by PG&E biologist Virginia Strohl. The purpose of these field reviews along with in office reviews was to ensure the footprints of planned facilities including potential access routes are designed to avoid disturbance of sensitive habitats to the extent feasible.	An addendum to the Mature Plants Survey Report (CH2M HILL 2014j) was completed on May 19, 2014 and is included in Appendix A4 of the 90% BOD Report. The addendum contains surveys results and associated maps for the freshwater well sites (HNWR-1 and Site B) in Arizona as well as potential sites identified for soil storage and/or construction staging west of Moabi Regional Park. Figure 2.4-8 in the 90% BOD Report presents the mature plant survey information for Key Views 5 and 11. The Aesthetics and Visual Resources Protection and Revegetation Plan (CH2M HILL 2014l) is included as an appendix to the Construction/Remedial Action Work Plan (CH2M HILL 2014m).  CH2M HILL biologist Steve Long and E2 biologist Russell Huddleston participated in a field review of planned remedial facilities with the design team on April 7-10, 2014. An additional field review of planned remedial facilities was conducted by CH2M HILL biologist Melissa Fowler and E2 biologist Russell Huddleston on August 6-8, 2014. PG&E biologist Virginia Strohl also led the office reviews of planned facilities and footprints.  The purpose of the field review along with in-office reviews was to ensure the footprints of planned facilities, including access routes and construction footprints, are designed to avoid disturbance of mature plant specimens and sensitive habitats to the extent feasible.	The survey methodology tech memo was completed on October 31, 2011, and provided to Interested Tribes on November 8, 2011.  The Mature Plants Survey Report was completed on January 17, 2012.  An addendum to the Mature Plants Survey Report was completed on May 22, 2014.  The Aesthetics and Visual Resources Protection and Revegetation Plan was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.
Aesthetics	AES-2c	c) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	A revegetation plan for the riparian vegetation along the river will be prepared and submitted with the final design.	A revegetation plan for the riparian vegetation along the river will be prepared and submitted with the final design.	A Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o) is included in an appendix of the Construction/Remedial Action Work Plan (CH2M HILL 2014m).	The Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.
Aesthetics	AES-2d	d) Plant material shall be consistent with surrounding native vegetation.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	This requirement will be incorporated into the revegetation plan, and therefore, will be satisfied by implementation of AES-1b/2c.	This requirement will be incorporated into the revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	This requirement was incorporated into the Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats included as an appendix to the Construction/Remedial Action Work Plan (CH2M HILL 2014o), and therefore was satisfied by implementation of AES-1b/2c.	The Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.

TABLE L1.1-1  
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				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Aesthetics	AES-2e	e) The color of the wells, pipelines, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity along the view corridor. Integral color concrete should be used in place of standard gray concrete.	Design submittals	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of the Basis of Design Report for the preliminary design. In addition, the detailed specification for colors will also be included the intermediate (60%) design.	The requirement of this mitigation measure was incorporated into the design criteria as presented in Appendix C of the BOD Report for the 60% design. The detailed specifications for colors are included in Appendix E of the 60% BOD Report.	The requirement of this mitigation measure was incorporated into the design criteria as presented in Appendix C of the 90% BOD Report. The detailed specifications for colors are included in Appendix E of the 90% BOD Report.	
Aesthetics	AES-2f	f) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation.	Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	This requirement will be incorporated into the revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	This requirement will be incorporated into the revegetation plan, and therefore will be satisfied by implementation of AES-1b/2c.	This requirement was incorporated into the riparian Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats revegetation plan (CH2M HILL 2014o) included as an appendix to the Construction/Remedial Action Work Plan, and therefore was satisfied by implementation of AES-1b/2c.	The Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats was submitted with the Construction/Remedial Action Work Plan on September 8, 2014.
Aesthetics	AES-3	<b>Impacts on Visual Quality and Character along the Colorado River (Key View 11)</b> -- Mitigation Measure AES-1 shall be implemented. Implementation of Mitigation Measures AES-1 would reduce the overall change to the visual character of the view corridor along the Colorado River. Although the proposed project would still be visible, incorporating a facilities design that is aesthetically sensitive and preserving the vegetation would blend the proposed project into their visual setting within the floodplain and would reduce the overall contrast of the proposed project.	Design submittals	This requirement is addressed by the actions taken to address AES-1.	This requirement is addressed by the actions taken to address AES-1.	This requirement is addressed by the actions taken to address AES-1.	
Air Quality	AIR-1	<b>Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors - PG&amp;E shall implement the fugitive dust control measures below for any construction and/or demolition activities:</b>					
Air Quality	AIR-1a	a) Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions during dust episodes. Use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient;	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; and Closure Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan (which will be submitted as part of the 90% design) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (which will be submitted as part of the Cultural Impact Mitigation Program [CIMP; PG&E 2014] and concurrently with the 90% design).  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	This requirement was incorporated into the BMP Plan of the Construction/Remedial Action Work Plan (Section 4) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (presented as an appendix in the CIMP and the Construction/Remedial Action Work Plan). Both plans were submitted as part of the 90% design documents.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	

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				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Air Quality	AIR-1b	b) Cover loaded haul vehicles while operating on publicly maintained paved surfaces;	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; and Closure Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan which will be submitted as part of the 90% design, and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration which will be submitted as part of the CIMP and concurrently with the 90% design.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	This requirement was incorporated into the BMP Plan of the Construction/Remedial Action Work Plan (Section 4) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (presented as an appendix in the CIMP and the Construction/Remedial Action Work Plan). Both plans were submitted as part of the 90% design documents.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	
Air Quality	AIR-1c	c) Stabilize (using soil binders or establish vegetative cover) graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such delay is caused by precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions;	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; and Closure Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan which will be submitted as part of the 90% design, and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration which will be submitted as part of the CIMP and concurrently with the 90% design.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	This requirement was incorporated into the BMP Plan of the Construction/Remedial Action Work Plan (Section 4) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (presented as an appendix in the CIMP and the Construction/Remedial Action Work Plan). Both plans were submitted as part of the 90% design documents.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	
Air Quality	AIR-1d	d) Cleanup project-related track out or spills on publicly maintained paved surfaces within twenty-four hours; and	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; and Closure Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan which will be submitted as part of the 90% design, and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration which will be submitted as part of the CIMP and concurrently with the 90% design.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	This requirement was incorporated into the BMP Plan of the Construction/Remedial Action Work Plan (Section 4) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (presented as an appendix in the CIMP and the Construction/Remedial Action Work Plan). Both plans were submitted as part of the 90% design documents.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	
Air Quality	AIR-1e	e) Curtail nonessential earth-moving activity under high wind conditions (greater than 25 miles per hour) or develop a plan to control dust during high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; and Closure Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be incorporated into the forthcoming Corrective Measure Construction/ Remedial Action Work Plan which will be submitted as part of the 90% design, and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration which will be submitted as part of the CIMP and concurrently with the 90% design.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	This requirement was incorporated into the BMP Plan of the Construction/Remedial Action Work Plan (Section 4) and the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (presented as an appendix in the CIMP and the Construction/Remedial Action Work Plan). Both plans were submitted as part of the 90% design documents.  The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning.	

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Biological Resources	BIO-1	<b>Potential Fill of Wetlands and Other Waters of the United States and Disturbance or Removal of Riparian Habitat</b> -Areas of sensitive habitat in the project area have been identified during project surveys. These areas include floodplain and riparian areas, wetlands, and waters of the United States. Habitats designated by CDFW as sensitive, including desert washes and desert riparian, are also included. To the extent feasible, elements of the project shall be designed to avoid direct effects on these sensitive areas. During the design process and before ground disturbing activities within such areas (not including East Ravine), a qualified biologist shall coordinate with PG&E to ensure that the footprints of construction zones, drill pads, staging areas, and access routes are designed to avoid disturbance of sensitive habitats to the extent feasible. DTSC shall be responsible for enforcing compliance with design and all preconstruction measures.	Design submittals	During the preparation of the Construction/ Remedial Action Work Plan as part of the design process, a qualified biologist will coordinate to ensure that the footprints of construction zones, drill pads, staging areas, and access routes are designed to avoid disturbance of sensitive habitats (floodplain and riparian areas, wetlands, waters of the US, desert washes, and desert riparian) to the extent feasible. The draft and final work plans are planned for submittal in 2012.	During the preparation of the Construction/ Remedial Action Work Plan as part of the design process, a qualified biologist will coordinate to ensure that the footprints of construction zones, drill pads, staging areas, and access routes are designed to avoid disturbance of sensitive habitats (floodplain and riparian areas, wetlands, waters of the US, desert washes, and desert riparian) to the extent feasible. The draft Construction/ Remedial Action Work Plan is planned for submittal in late 2013, concurrently with the 90% design.	CH2M HILL biologist Steve Long and E2 biologist Russell Huddleston participated in a field review of planned remedial facilities with the design team on April 7-10, 2014. An additional field review of planned remedial facilities was conducted by CH2M HILL biologist Melissa Fowler and E2 biologist Russell Huddleston on August 6-8, 2014. PG&E biologist Virginia Strohl also led the office reviews of planned facilities and footprints. The purpose of the field review along with in- office reviews was to ensure the footprints of planned facilities, including access routes and construction footprints, are designed to avoid disturbance of sensitive habitats to the extent feasible.  The Construction/Remedial Action Work Plan was submitted on September 8, 2014 as part of the 90% design document.	
Biological Resources	BIO-1	<p>If during the design process it is shown that complete avoidance of habitats under USACE jurisdiction is not feasible, the Section 404 permitting process shall be completed, or the substantive equivalent per CERCLA Section 121(e)(1). In either event, the acreage of affected jurisdictional habitat shall be replaced and/or rehabilitated to ensure “no-net-loss.” Before any ground-disturbing project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland delineation process and to DTSC. For all jurisdictional areas that cannot be avoided as described above, authorization for fill of wetlands and alteration of waters of the United States shall be secured from USACE through the Section 404 permitting process before project implementation. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to USACE and consistent with applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented.</p> <p>Alternately, if USACE declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the substantive equivalent of the Section 404 permitting process shall be complied with by ensuring that the acreage of jurisdictional wetland affected is be replaced on a “no-net-loss” basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC</p>	Jurisdictional Delineation of Waters and Wetlands Report	During the preliminary (30%) design, it has been determined that complete avoidance of habitats under USACE jurisdiction (e.g., Bat Cave Wash) is not feasible. PG&E will work with the USACE to determine and complete the Section 404 permitting process or the substantive equivalent per CERCLA Section 121(e)(1). It is anticipated that a wetland delineation will be conducted in the Spring of 2012.	<p>Figure 2.4-5 in the 60% BOD Report shows the overlaps between planned remedy infrastructure and the USACE jurisdictional waters/wetlands. As shown in Figure 2.4-5, complete avoidance of washes is not feasible due to the need to install remediation and monitoring wells in washes (e.g., a wash in the Upland, Bat Cave Wash).</p> <p>On February 12, 2013, PG&amp;E consulted with Mr. Gerardo Salas of USACE Los Angeles District in Los Angeles regarding the application of the CERCLA 121(e)(1) permit exemption to the Topock remediation project. PG&amp;E will continue to coordinate with USACE on this matter, including on the substantive requirements of CWA Section 404.</p>	<p>On February 13-17, 2012, a wetland delineation was conducted to determine and map the extent of wetlands and other waters of the U.S. located within the EIR project area. Additional wetland delineation was conducted on July 16-17 and December 12-13, 2012, in study areas identified in the alternative freshwater evaluation. A report titled “<i>Wetlands and Waters of the United States Final Delineation Report for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California</i>” (CH2M HILL 2014c) was prepared to summarize results of the above delineation efforts and submitted to DTSC and DOI on April 18, 2014. The report is also included in Appendix A3 of the 90% BOD Report.</p> <p>On July 10, 2013, the USACE confirmed that CERCLA 121(e)(1) permit exemption applies to the Topock remediation project, and therefore, PG&amp;E is not required to comply with the administrative and procedural elements of Section 404 of the Clean Water Act; however, PG&amp;E is obligated to comply with the substantive elements that would normally be required by a permit. The USACE also stated that it therefore will not verify the wetlands and waters delineation. Therefore, PG&amp;E is not seeking verification from the USACE. Rather, PG&amp;E assumes that the jurisdictional waters and wetlands delineated and identified as such in the aforementioned report are all the jurisdictional waters under Section 404 of the</p>	<p>On July 10, 2013, USACE issued a letter (USACE 2013a) that confirmed that a Section 404 permit is not required for the Topock remediation project because the site is exempted under CERCLA 121(e)(1). Additionally, USACE confirmed that it will not verify a jurisdictional delineation for this action because a permit is not required (G. Salas USACE, email communication to V. Nez PG&amp;E, July 12, 2013).</p> <p>The wetland delineation report (CH2M HILL 2014c) was completed on April 18, 2014.</p>

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		to document compliance with these mandates.				<p>CWA.</p> <p>The locations of jurisdictional waters have been incorporated into the design. At the 90% design stage, the final remedy avoids almost all permanent impacts within USACE jurisdictional areas with the following exceptions. There is one well, IRL-4, and one or two associated arsenic monitoring wells that will occur within a jurisdictional waters of the US. There is also a freshwater pipeline that will be installed within an existing unpaved access road within the 100-year floodplain of the Colorado River.</p> <p>However, complete avoidance of other jurisdictional non-wetland waters is not feasible. It has been determined that in order to meet the goals of protection of human health and the environment, to meet the RAOs for the remedy, to monitor remedy performance, to gather data for demonstration of compliance, as well as in response to resolution of design comments with the Tribes, infrastructure (remediation, monitoring wells, and associated piping/conduits) must be installed in certain washes. There are no practicable alternatives to locating certain infrastructure within waters of the United States.</p> <p>Figure 2.4-5 in the 90% BOD Report shows the unavoidable overlaps between planned remedy infrastructure and the USACE jurisdictional waters. In such cases where complete avoidance is not feasible, certain best management practices (BMPs) will be implemented to avoid and minimize temporary and permanent impacts for activities occurring within jurisdictional wetlands and non-wetland waters of the U.S.</p> <p>Although the USACE did not provide a list of measures that may be taken to reduce impacts to jurisdictional waters and wetlands, the California Department of Fish and Wildlife (CDFW) requires compliance with avoidance and mitigation measures (AMMs) for all work conducted in CDFW jurisdictional washes. The geographic extent of CDFW’s jurisdiction is broader than the jurisdictional extent of the USACE under CWA 404 and thus, avoidance and mitigation measures applied to CDFW jurisdictional waters would as a geographic consequence also be applied to CWA 404 waters. While Arizona does not have a similar state program, PG&amp;E will also implement the same AMMs in Arizona identified by CDFW for</p>	

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						California as well to ensure appropriate protection to CWA 404 jurisdictional areas in the project area, including those in Arizona.  In addition to the CDFW AMMs, PG&E has identified additional BMPs for implementation during remedy construction, operation and maintenance, as well as decommissioning. The additional BMPs are described in the <i>Protocol for Compliance with EIR Mitigation and Monitoring Reporting Program BIO-1 and Applicable or Relevant and Appropriate Requirement (ARAR) #32 at the Topock Compressor Station</i> (see <b>Exhibit 6.1-1</b> presented at the end of this table).  A Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o) was also prepared and included in an appendix of the Construction/Remedial Action Work Plan.	
Biological Resources	BIO-1	<p>If during the design process it is shown that complete avoidance of habitats under CDFG jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, a Section 1602 streambed alteration agreement shall be obtained from CDFG and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a no-net-loss basis in accordance with CDFG regulations and, if applicable, as specified in the streambed alteration agreement, if needed. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to CDFG and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. Restoration of any disturbed areas shall include measures to achieve “no-net-loss” of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a habitat restoration plan submitted to CDFG, BLM, and USFWS that is agreeable to these agencies, or, alternately, through the implementation of a habitat restoration plan consistent with the substantive policies of CDFG, BLM, and USFWS. The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan.</p> <p>Alternately, if CDFG declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, and during the design process it is shown that complete avoidance of habitats under CDFG jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, the</p>	Havasu National Wildlife Refuge Habitat Restoration Plan, Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats	<p>During the preliminary (30%) design, it has been determined that complete avoidance of habitats under CDFG jurisdiction (e.g., Bat Cave Wash) is not feasible. PG&amp;E will work with the CDFG to determine and complete the Section 1600 permitting process or the substantive equivalent per CERCLA Section 121(e)(1).</p>	<p>Figure 2.4-5 in the 60% BOD Report shows the overlaps between remedy infrastructure and the CDFW jurisdictional waters/wetlands. As shown in Figure 2.4-5, complete avoidance of washes is not feasible due to the need to install remediation and monitoring wells, and associated pipes and components in washes (e.g., a wash in the Upland, Bat Cave Wash). The CDFG is now the California Department of Fish and Wildlife, and thus is referred to as CDFW in this report.</p> <p>On December 11, 2012, PG&amp;E consulted with CDFW District Regional Manager and his staff at the Blythe, California office regarding the substantive requirements of the CDFW Section 1602 and the application of the CERCLA 121(e)(1) permit exemption to the Topock remediation project. On February 21, 2013, CDFW staff from the Blythe office conducted a field review of the project. On March 6, 2013, the CDFW issued a letter to PG&amp;E confirming that CERCLA 121(e)(1) applies to response actions conducted onsite at Topock, specifically soil and groundwater investigation activities and remedial actions at the site (CDFW 2013). As a result, no Lake or Stream Bed Alteration Agreement is required by CDFW. However, PG&amp;E must still comply with substantive elements CDFW would require in such an Agreement for the duration of the project. In this case, the substantive elements are the avoidance and minimization measures (AMMs) attached to the March 6, 2013 letter (this letter can be viewed or downloaded from</p>	<p>During the design, a process similar to the above was also conducted to avoid and minimize impacts to CDFW jurisdictional waters/wetlands.</p> <p>CDFW jurisdictional waters in the project area were delineated and mapped. A technical memorandum titled <i>Riparian Vegetation and California Department of Fish and Wildlife Jurisdiction for the Topock Compressor Station Groundwater Remediation Project</i> (CH2M HILL 2014i) was prepared to summarize the delineation results. The memo was submitted to the CDFW on 5/9/14, and to DTSC on 5/21/14, and is also included in Appendix A3 of the 90% BOD Report.</p> <p>The locations of jurisdictional waters have been incorporated into the design. At the 90% design stage, the final remedy avoids almost all permanent impacts within USACE jurisdictional areas with the following exceptions. There is one well, IRL-4 and one or two associated arsenic monitoring wells that will occur within a jurisdictional waters of the US. There is also a freshwater pipeline that will be installed within an existing unpaved access road within the 100-year floodplain of the Colorado River.</p> <p>However, complete avoidance of other CDFW jurisdictional non-wetland waters is not feasible for the same reasons described above for the USACE jurisdictional non-wetland waters. Figure 2.4-5A in the 90% BOD Report shows the unavoidable overlaps between planned remedy infrastructure and the CDFW</p>	<p>On March 6, 2013, CDFW issued a letter confirming that CERCLA 121(e)(1) permit exemption applies to response actions conducted onsite as part of the Topock remediation project, and specified the substantive requirements in the form of AMMs that PG&amp;E must comply with for the duration of the project.</p> <p>A technical memorandum summarizing the results of delineating CDFW jurisdictional waters in the project area (CH2M HILL 2014i) was submitted to CDFW on May 9, 2014, and to DTSC on May 21, 2014.</p> <p>The Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o) and the Havasu National Wildlife Refuge Habitat Restoration Plan (CH2M HILL 2014n) were submitted with the Construction/Remedial Action Work Plan on September 8, 2014.</p>

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		substantive mandates of a streambed alteration agreement shall be implemented, and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a “no-net-loss” basis in accordance with CDFG regulations and, if applicable. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to CDFG and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. Restoration of any disturbed areas shall include measures to achieve “no-net-loss” of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a habitat restoration plan developed consistent with the substantive policies of CDFG, BLM and USFWS. The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan.			the DTSC Topock website at <a href="http://www.dtsc-topock.com">www.dtsc-topock.com</a> ), and any additional measures PG&E’s biologist determines to be necessary.	jurisdictional waters.  A Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats and a Havasu National Wildlife Refuge Habitat Restoration Plan were prepared and included as appendices of the Construction/Remedial Action Work Plan.	
Biological Resources	BIO-2a	<p><b>Disturbance of Special-Status Birds and Loss of Habitat.</b> To the extent feasible, the project implementation plans shall be designed to minimize removal of habitat for special-status birds. During the design process and before ground disturbing activities (except within the East Ravine as described in the Revised Addendum and unless otherwise required as noted below), a qualified biologist shall coordinate with PG&amp;E to ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on habitat and nesting habitat for other special-status species, to the extent feasible. DTSC will ensure compliance with all preconstruction and construction phase avoidance measures identified during this process and included in any design plans. Vegetation removal and other activities shall be timed to avoid the nesting season for special-status bird species that may be present. The nesting cycle for most birds in this region spans March 15 through September 30.</p> <p><b>Preconstruction Measures:</b> Preconstruction breeding season surveys shall be conducted during the general nesting period, which encompasses the period from March 15 through September 30, if the final design of the project (including East Ravine investigation Sites I, K and L) could result in disturbance or loss of active nests of special-status bird species. If vegetation removal or other disturbance related to project implementation is required during the nesting season, focused surveys for active nests of special-status birds shall be conducted before such activities begin. A qualified biologist shall conduct preconstruction surveys to identify active nests that could be affected. The appropriate area to be surveyed and the timing of the survey may vary depending on the activity and</p>	Avoidance and Minimization Plan; Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (part of CIMP); Plan for Decommissioning of Remedy Facilities and Restoration	A qualified biologist will coordinate to ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on habitat and nesting habitat for other special-status species, to the extent feasible, at the intermediate (60%) stage. An Avoidance and Minimization Plan for special-status birds will be developed in consultation with the USFWS, and is subject to agreement from DTSC.	The Yuma clapper rail/California black rail surveys consist of six focused surveys between March 14 and May 19, 2012.The southwestern willow flycatcher (SWFL) surveys were conducted May 21 through 25 and June 4 through 8; June 18 through 22; and June 26 through 30, 2012. The 2012 SWFL survey report was submitted to BLM and USFWS on January 31, 2013 (CH2M HILL 2013a). The results of the Yuma clapper rail/California black rail survey will be summarized in a forthcoming report.  An Avoidance and Minimization Plan for special status birds is under preparation, in consultation with the USFWS.	PG&E submitted the Final Bird Impact Avoidance and Minimization Plan (CH2M HILL 2014d) for disturbance of special-status birds and loss of habitat for the Topock remediation project on April 30, 2014. The plan is also included as an appendix of the Construction/ Remedial Action Work Plan.  Results of the 2012 Yuma clapper rail/ California black rail survey were summarized in a report titled <i>2012 Focused Survey for the Yuma clapper rail and the California black rail at the PG&amp;E Groundwater Remediation Project Site, Needles, California</i> (CH2M HILL 2013g)”.  The SWFL surveys were conducted on June 2-6, June 16-20, and June 29-July 3, 2014. Surveys for the western yellow-billed cuckoo were conducted June 16-20, June 29-July 3, and August 4-7,2014.	The Final Bird Impact Avoidance and Minimization Plan (CH2M HILL 2014d) was submitted on April 30, 2014.

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		<p>species that could be affected. For the Yuma clapper rail, the preconstruction surveys shall specifically identify habitat within 300 feet of construction areas, in accordance with substantive policies of USFWS including those set out in USFWS protocols.</p> <p><b>Construction Measures:</b> Before the initiation of project elements that could result in disturbance of active nests or nesting pairs of other special-status birds, a qualified biologist shall be consulted to identify appropriate measures to minimize adverse impacts during the construction phase of the project. If deemed appropriate for the final project design because of the potential for impacts, minimization measures will include focusing construction activities that must be conducted during the nesting season to less- sensitive periods in the nesting cycle, implementing buffers around active nests of special-status birds to the extent practical and feasible to limit visual and noise disturbance, conducting worker awareness training, and conducting biological monitoring (including noise monitoring to determine if construction noise at the edge of suitable nesting habitat is elevated above 60 dBA Leq or ambient levels).</p> <p>An avoidance and minimization plan for special status bird species, as defined in Table 4.3-3 of the EIR and those species protected under the federal Migratory Bird Treaty Act, including the Yuma clapper rail, shall be developed and implemented in consultation with USFWS, and agreed upon by DTSC. Avoidance and impact minimization measures, such as prohibiting construction near or in sensitive bird habitat, limiting construction during breeding seasons, and requiring an on-site biological monitor, shall be included in the design plan and implemented to the extent necessary to avoid significant impacts on sensitive bird species.</p>					



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Biological Resources	BIO-2b	<p><b>Disturbance of Desert Tortoise and Loss of Habitat.</b></p> <p><b>Preconstruction Measures:</b> In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the Programmatic Biological Assessment (PBA) and in the USFWS letter concurring with the PBA, shall be implemented, as described below. To the extent feasible, project construction shall be designed to minimize removal of habitat for the desert tortoise. Before any ground-disturbing project activities begin, and except within the East Ravine for which potential effects to the tortoise have been considered per the PBA), a USFWS-authorized desert tortoise biologist shall identify potential desert tortoise habitat in areas that could be affected by the final project design. Through coordination with the authorized biologist, PG&amp;E shall ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. These measures include the presence of a USFWS-authorized desert tortoise biologist onsite or designated agent in accordance with the PBA who will examine work areas and vehicles for the presence of desert tortoises, and who will conduct preconstruction desert tortoise surveys in areas where unavoidable impacts to tortoise habitat would occur. If feasible, the preconstruction desert tortoise surveys would coincide with one of the two peak periods of desert tortoise activity (i.e., if feasible, the surveys should be conducted in either the period from April through May, or from September through October). The preconstruction surveys shall be in full accordance with the substantive requirements of USFWS protocols.</p> <p><b>Construction Measures:</b> Before the initiation of project elements that could result in disturbance of desert tortoises or desert tortoise habitat, a USFWS-authorized desert tortoise biologist shall be consulted to identify appropriate measures to minimize adverse impacts. Minimization measures are likely to include micro-siting structures, pipelines, and access roads in previously disturbed areas or in areas with sparse scrub vegetation, conducting worker awareness</p>	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (part of CIMP); Plan for Decommissioning of Remedy Facilities and Restoration	<p>PG&amp;E, USFWS, and DOI are coordinating on the PBA for the final groundwater remedy. Goal is to complete the PBA in time for the completion of ESA Section 7 consultation prior to the approval of the Construction/Remedial Action Work Plan.</p> <p>Measures outlined in the forthcoming PBA and associated USFWS determination letter will be implemented before and during construction activities.</p>	<p>On September 25, 2012, the USFWS authorized two biologists, Melanie Day and Gabriel Valdes, to conduct activities described in this mitigation measure, pursuant to the PG&amp;E Topock groundwater remediation project. Specifically, these two authorized biologists may survey, provide work area and vehicles inspection, and direct (pre)construction activities to avoid impacts on desert tortoise or their potential habitat, and to provide worker’s awareness training for the groundwater remediation project.</p> <p>Gabriel Valdes identified the potential desert tortoise habitat shown in Figure 2.4-10 in the 60% BOD Report. Through coordination with the biologists (Gabriel Valdes and Melanie Day), the footprints of remediation wells, monitoring wells, piping, electrical transformers, access routes and pathways have been designed to avoid direct and indirect effects on potential desert tortoise habitat.</p> <p>PG&amp;E, USFWS, and DOI continue to coordinate on the PBA for the final groundwater remedy. The goal is to complete the PBA in time for the completion of ESA Section 7 consultation prior to the approval of the Construction/Remedial Action Work Plan. Measures outlined in the forthcoming PBA and associated USFWS determination letter will be implemented before and during construction activities.</p>	<p>On April 1-2 and May 12-13, 2013, USFWS authorized biologist Gabriel Valdes conducted additional protocol surveys for desert tortoise in support of the design including the freshwater supply sites. Gabriel Valdes identified the potential desert tortoise habitat shown in Figure 2.4-10 in the 90% BOD Report. Through coordination with the biologists, the footprints of remediation wells, monitoring wells, piping, electrical transformers, access routes and pathways have been designed to avoid direct and indirect effects on potential desert tortoise habitat.</p> <p>PG&amp;E, USFWS, BLM, and DOI coordinated on the PBA for the final groundwater remedy. This ESA Section 7 consultation was concluded with receipt of USFWS concurrency letter on July 7, 2014 which preceded the approval of the Construction/Remedial Action Work Plan. Measures outlined in the PBA and associated USFWS determination letter will be implemented before and during construction activities.</p>	

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Biological Resources	BIO-2c	<b>Disturbance of Special-Status Species and Loss of Habitat Caused by Decommissioning.</b> To avoid impacts on special-status species that may occur within the project area as a result of decommissioning activities, an avoidance and minimization plan shall be developed and implemented through consultation with CDFW, BLM, and USFWS. These measures shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in this EIR for each species or suite of species). Restoration of any disturbed areas shall include measures to achieve no net loss of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a habitat restoration plan submitted to CDFW, BLM, and USFWS that is agreeable to these agencies. The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan.	Avoidance and Minimization Plan	During planning of the IM-3 Decommissioning and Site Restoration Plan, an Avoidance and Minimization Plan and a Habitat Restoration Plan will be developed and implemented through consultation with CDFW, BLM, and USFWS.	The IM-3 Decommissioning Work Plan will describe the general procedures for restoration of the land and habitats.  The Avoidance and Minimization Plan and Habitat Restoration Plan associated with decommissioning activities will be based on surveys conducted prior to decommissioning, and during the breeding season; therefore these Plans will be prepared in the future, prior to decommissioning (note that PG&E will prepare a separate Habitat Restoration Plan in compliance with the Consent Decree; this Plan will be developed in coordination with the USFWS Havasu National Wildlife Refuge (HNWR) Manager and submitted with the Construction/Remedial Action Work Plan).	<u>Avoidance and Minimization Associated with Decommissioning of IM-3 Facilities and Site Restoration</u>  An Avoidance and Minimization Plan associated with the decommissioning of IM-3 facilities will be developed based on surveys conducted prior to decommissioning, and during the breeding season; therefore, this Plan will be also prepared in the future, prior to decommissioning.  <u>Avoidance and Minimization Associated with Decommissioning of Remedial Facilities and Site Restoration</u>  In compliance with this mitigation measure, an Avoidance and Minimization Plan associated with decommissioning of remedial facilities will be developed based on surveys conducted prior to decommissioning, and during the breeding season; therefore, this Plan will be also prepared in the future, prior to decommissioning.  As required by the EIR MMRP, general procedures and protocols for restoring the environment to its preconstruction conditions upon decommissioning of remedial facilities were developed and included as part of the CIMP (CUL-1a-8e).  Also in compliance with the CD, a separate Habitat Restoration Plan for the Refuge was prepared and included as an appendix of the Construction/Remedial Action Work Plan.	

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Biological Resources	BIO-3a	<p><b>Potential Impacts to Aquatic Habitat Related to Turbidity, Erosion, Sedimentation, and Overall Water Quality during Construction of the Intake Structure.</b> Hydrology &amp; Water Quality Mitigation Measure HYDRO-1 shall be implemented in order to reduce water quality impacts related to erosion and pollutant runoff through implementation of BMPs. In addition, installing the cofferdam and dewatering a portion of the proposed intake structure site during fish screen construction may result in fish stranding. PG&amp;E and its contractor shall coordinate with a qualified fisheries biologist to develop and implement a fish rescue plan. The fish rescue effort would be implemented during the dewatering of the area behind the cofferdam and would involve capturing those fish and returning them to suitable habitat within the river.</p> <p>The fish rescue plan shall identify and describe the following items: collection permits needed, fish capture zones, staffing, staging areas, fish collection and transport methods, species prioritization, resource agency contacts, fish handling protocols, fish relocation zones, site layout and progression of dewatering and fish rescue, and records and data. To ensure compliance, a fisheries biologist shall be present on-site during initial pumping (dewatering) activities and to oversee the fish rescue operation.</p>		No further action is required. The preliminary (30%) design does not include a river water intake structure.	In response to comments on the 30% design submittals, PG&E prepared a technical memorandum to present additional details on three freshwater sources (groundwater from California, groundwater from Arizona, and Colorado River water). No further action is required. The intermediate (60%) design does not include a river water intake structure.	No further action is required. The pre-final (90%) design does not include a river water intake structure.	
Biological Resources	BIO-3b	<p><b>Potential Loss or Degradation of Aquatic Habitat.</b> To restore, replace, or rehabilitate habitat impacted by the intake structure, PG&amp;E shall implement the measures described below. Unless as provided below, PG&amp;E shall confer with CDFW regarding potential disturbance to fish habitat and shall obtain a streambed alteration agreement, pursuant to Section 1602 of the California Fish and Game Code, for construction work associated with intake structure construction; PG&amp;E shall also confer with CDFW pursuant to the California Endangered Species Act (CESA) regarding potential impacts related to the loss of habitat or other operational impacts on state-listed fish species, respectively. PG&amp;E shall comply with all requirements of the streambed alteration agreement and any CESA permits to protect fish or fish habitat or to restore, replace, or rehabilitate any important habitat on a “no-net-loss” basis.</p> <p>Alternatively, if CDFW declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the project proponent shall consult with CDFW regarding potential disturbance to fish habitat and shall meet the substantive policies of a streambed alteration agreement and of the CESA for construction work associated with intake structure construction and operations. PG&amp;E shall comply with all substantive requirements of the streambed alteration agreement and CESA to protect fish and fish habitat or to restore, replace, or rehabilitate any important habitat on a “no-net-loss” basis and to operate the facility in accordance with CESA to ensure no net loss of habitat function.</p>		No further action is required. The preliminary (30%) design does not include a river water intake structure.	In response to comments on the 30% design submittals, PG&E prepared a technical memorandum to present additional details on three freshwater sources (groundwater from California, groundwater from Arizona, and Colorado River water). No further action is required. The intermediate (60%) design does not include a river water intake structure.	No further action is required. The pre-final (90%) design does not include a river water intake structure.	

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Biological Resources	BIO-3b	<p>Additionally, PG&amp;E shall consult with USACE regarding the need to obtain permits under section 404 of the CWA and section 10 of the Rivers and Harbors Act. In conjunction with these permitting activities, the USACE must initiate consultation with USFWS under Section 7 of the federal ESA regarding potential impacts of the proposed project on federally listed fish species due to the loss of habitat on federally listed fish species. PG&amp;E shall implement any additional measures developed through the ESA Section 7 processes, or its equivalent, to ensure “no-net loss” of habitat function.</p> <p>Alternatively, if USACE and/or USFWS decline to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, PG&amp;E shall confer with USFWS regarding potential disturbance to federally listed fish species and federally listed fish species habitat and shall meet the substantive mandates under Section 7 of the federal ESA regarding potential impacts to fish or to habitat of federally listed fish species. PG&amp;E shall implement any additional measures developed through that processes, including compliance with the substantive requirements of all of what would be permit conditions if not exempt pursuant to CERCLA, and to ensure “no-net-loss” of habitat function.</p> <p>Because the type and extent of habitat potentially affected is unknown, PG&amp;E shall have an instream habitat typing survey conducted in the area potentially affected by the intake construction. Further, cooperation with USFWS and other fisheries biologists shall determine suitable and acceptable location(s) for the intake structure(s) to avoid the spawning habitat of special-status fish species. PG&amp;E shall avoid habitat modifications, especially to habitat that is preferred by native fishes for spawning or rearing including side channels, cobble or gravel bars, and shallow backwaters. If these habitat types cannot be avoided, any disturbed habitat will be restored or replaced to achieve “no-net-loss” of habitat types and values as described above.</p>	Instream Habitat Typing Survey Report	No further action is required. The preliminary (30%) design does not include a river water intake structure.	In response to comments on the 30% design submittals, PG&E prepared a technical memorandum to present additional details on three freshwater sources (groundwater from California, groundwater from Arizona, and Colorado River water). As part of the preparation of the technical memorandum, an instream habitat survey was conducted on April 4, 2012 to determine the preferred locations for spawning and rearing of the razorback sucker and bonytail chub. Survey results were presented in a technical memorandum entitled <i>Instream Habitat Typing Survey, Topock Compressor Station, Colorado River</i> (CH2M HILL 2012a). The report was provided to DTSC on May 25, 2012, and is included in Appendix A6 of this BOD report.	No further action is required. The pre-final (90%) design does not include a river water intake structure.	The Instream Habitat Typing Survey Technical Memorandum (CH2M HILL 2012a) was completed on May 25, 2012.

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Biological Resources	BIO-3c	<b>Potential Fish Entrainment and Impingement during Operation of the Intake Structure.</b> Both screened and unscreened diversions can entrain larval life stages of fish. For example, adverse effects to early life stages of fish could occur if diversions coincide with planktonic larval life stages that occur during summer months, a period of high entrainment vulnerability. Prior to operation of the intake structure, PG&E shall consult with USFWS and CDFW to determine the most vulnerable time of the year for entrainment or impingement of razorback sucker and bonytail chub eggs or larvae. PG&E shall install a state-of-the-art positive-barrier fish screen that would minimize fish entrainment and impingement at the intake structure. The fish screen shall be designed in accordance with CDFW and the National Marine Fisheries Service criteria, with specific consideration given to minimizing harm to fish eggs and other early life stages. To ensure that the fish screen operates as intended and reduce the risk of impacts, long-term monitoring of the operations and maintenance of the positive-barrier screen shall be conducted. Monitoring at the onset of diversions through the intake shall include approach velocity measurements immediately after the positive-barrier screen operations begin, with fine-tuning of velocity control baffles or other modifications as necessary, to achieve uniform velocities in conformance with the screen criteria established by regulatory agencies.		No further action is required. The preliminary (30%) design does not include a river water intake structure.	In response to comments on the 30% design submittals, PG&E prepared a technical memorandum to present additional details on three freshwater sources (groundwater from California, groundwater from Arizona, and Colorado River water). No further action is required. The intermediate (60%) design does not include a river water intake structure.	No further action is required. The pre-final (90%) design does not include a river water intake structure.	
Cultural Resources	CUL-1a	<b>During Design, Construction, O&amp;M, and Decommissioning Implement Measures to Avoid, Minimize, or Mitigate Impacts on Cultural Resources.</b> Establishment of a cultural impact mitigation program and a Corrective Measures Implementation Workplan (CMI Workplan), with specific activities stipulated for each phase of the project, will reduce the potential for impacts on historical resources within the project area, and will help preserve the values of and access to the Topock Cultural Area for local Tribal users. As detailed below, measures will be implemented to avoid known resources, re-use existing disturbed areas to the extent feasible, allow for Tribal input to the final design and maintain access for Tribal users during design, construction, operation, and decommissioning activities, as appropriate. During construction, a Worker Education Program and regular archaeological and Tribal monitoring will be implemented, and measures intended to reduce the potential for incursion by outside parties will be strengthened. This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation (dated December 31, 2010).	Corrective Measure Implementation Work Plan (CMI) and Cultural Impact Mitigation Program (CIMP)	The Corrective Measure Implementation Work Plan (CMI Work Plan) was completed in November 2011. Work on the Cultural Impact Mitigation Program (CIMP) commenced in May 2011, the CIMP will be submitted with the final design (due 2012) as directed.	Work on the CIMP commenced in May 2011, and the CIMP will be submitted with the 90% design (due late 2013).	PG&E started work on the CIMP in May 2011, in coordination with Interested Tribes during face- to- face meetings or teleconference calls held once per month. On July 8, 2013, PG&E provided a preliminary draft CIMP (including the IM-3 Decommissioning Plan) to Interested Tribes. Tribes provided comments on the draft CIMP in October 2013. PG&E reviewed and discussed select comments and responses with the Tribes during the March and April 2014 Tribal Monthly Updates (TMUs).  At DTSC’s and Tribes’ request, the CIMP (PG&E 2014) was submitted on May 1, 2014, in advance of the 90% design (see paragraph below for submittal dates related to the IM-3 Decommissioning Plan). PG&E incorporated select Tribes’ comments in the May 1, 2014 CIMP, and sent Tribes a letter to explain why certain comments were not incorporated.  <u><a href="#">IM-3 Decommissioning Plan (Appendix B of CIMP)</a></u>  A preliminary draft IM-3 Decommissioning Plan was submitted to the Fort Mojave Indian Tribe (FMIT) in April 2013. The FMIT provided comments on the preliminary draft Plan in June 2013. PG&E updated the draft Plan and submitted it to Interested Tribes as an	The Revised Groundwater CMI/RD Work Plan (CH2M HILL 2011a) was completed on November 2, 2011.

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						appendix to the CIMP on July 8, 2013. The FMIT and the Hualapai Tribe provided comments on the updated Plan in October 2013. PG&E sent letters to respond to the Tribes’ comments on July 8, 2014 and discussed the responses during the July TMU. PG&E incorporated select Tribes’ comments and submitted a revised Plan with the 90% design on September 8, 2014.	
Cultural Resources	CUL-1a-1	During development of the final design and the construction, operation, and decommissioning phases of the project, PG&E shall carry out and require all subcontractors to carry out all investigative, testing, and remediation activities, including all supporting operations and maintenance activities, in ways that avoid, minimize, and mitigate significant adverse effects to historically significant cultural and historic resources, consistent with the CEQA Guidelines, and including the Topock Cultural Area, to the maximum extent feasible as determined by DTSC.	Training material for cultural resources	Implementation of this measure will be carried out in a manner that respects cultural and historic resources, to the maximum extent feasible as determined by DTSC.	PG&E remediation resources specialist Glenn Caruso participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with in-office reviews is to ensure that the footprints of planned facilities are designed in ways that avoid, minimize, and mitigate significant adverse effects to historically significant cultural and historic resources.	PG&E Cultural Resources Expert Glenn Caruso participated in field reviews of planned remedial facilities and construction footprints with the design team on April 7-10, 2014. He also led in-office reviews of locations of planned facilities and construction footprints. The purpose of these field reviews along with in-office reviews is to ensure that the footprints of planned facilities are designed in ways that avoid, minimize, and mitigate significant adverse effects to historically significant cultural and historic resources.	
Cultural Resources	CUL-1a-2	<p>As part of the CMI Workplan, PG&amp;E shall develop a written access plan to preserve Tribal members’ access to, and use of, the project area for religious, spiritual, or other cultural purposes. This plan will allow access to the extent PG&amp;E has the authority to facilitate such access, and be consistent with existing laws, regulations, and agreements governing property within the project area. The access plan may place restrictions on access into certain areas, such as the Compressor Station and the existing evaporation ponds, subject to DTSC review with regard to health and safety concerns and to ensure noninterference with approved remediation activities. This access plan may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the related stipulation (General Principle I.C) contained in the Programmatic Agreement (Appendix PA). PG&amp;E shall demonstrate a good faith effort to coordinate with Interested Tribes<sup>1</sup> by including communication logs as part of the CMI Workplan.</p> <p><sup>1</sup>”Interested Tribes” means, for purposes of this EIR and the mitigation measures contained herein, the six Tribes that have substantially participated in the various administrative processes surrounding remediation of the site with DTSC, PG&amp;E, and DOI, including throughout development of the final remedy. Interested Tribes include the Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Fort Yuma-Quechan Indian Tribe, and Hualapai Indian Tribe.</p>	Access Plan; Communication Log with Tribes (part of the EIR mitigation measure compliance reports)	In its June 17, 2011 comment on the Draft CMI Work Plan, DTSC stated that "Although DTSC specified that the site access and security plan are to be developed as part of the CMI Work Plan, DTSC acknowledges that the full scope of the plan cannot be accomplished without completion of the design. Therefore, DTSC agrees that PG&E can provide conceptual ideas within the CMI Work Plan for the development of a detailed plan as part of the final design." At the time of this writing, PG&E has been in contact with the BLM who has responsibility for preparing the Access Plan required by the PA. BLM has indicated that they are planning to complete their Access Plan by Fall 2011. Given the majority of land within the area is federal land, PG&E is waiting for BLM to complete their Access Plan in order to avoid the potential for inconsistencies. PG&E will then prepare an Access Plans for the lands not under federal management, for submittal with the final design (target late 2012).	PG&E has initiated work on an Access Plan for the lands not under federal management, taking into consideration the information in the BLM Access Plan, for submittal with the final design (target 2013).  Communication logs with Tribes are submitted to DTSC quarterly as part of the quarterly EIR mitigation measures compliance reports (see Table 6.1-2 in the 60% BOD Report)	<p>On October 21, 2013, PG&amp;E provided the Tribes a draft of the Access Plan for lands not under federal management for review and comment. Tribal comments were received on November 22, 2013. PG&amp;E has updated and discussed the plan at the July 24, 2014 TMU. The Access Plan is included as an appendix of the Construction/Remedial Action Work Plan.</p> <p>Communication logs with Tribes are submitted to DTSC quarterly as part of the quarterly EIR mitigation measures compliance reports (the last quarterly report was submitted on July 31, 2014; the next quarterly report is due October 31, 2014).</p>	

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Cultural Resources	CUL-1a-3	PG&E shall enhance existing measures to prevent and reduce incursions from recreational and/or other outside users from affecting unique archeological and historically significant resources, including resources within the Topock Cultural Area, by:		This mitigation measure will be met through actions taken to comply with CUL-1a-3a through 3d (see below).	This mitigation measure will be met through actions taken to comply with CUL-1a-3a through 3d (see below).	This mitigation measure will be met through actions taken to comply with CUL-1a-3a through 3d (see below).	
Cultural Resources	CUL-1a-3a	a. Retaining a Qualified Cultural Resource Consultant to implement the Mitigation Monitoring and Reporting Program (MMRP) and conducting yearly inspections (or less frequently upon approval by DTSC) of identified historical resources, including inspections of the Topock Cultural Area, to determine if substantial adverse changes have occurred relative to the condition of the historical resources during the past year or prior to the implementation of the proposed project. PG&E shall offer to retain a Tribal monitor at historic rates of compensation or Tribal representatives designated by the Tribal Council or chairperson, if so requested, to accompany the Qualified Cultural Resources Consultant during the inspections. The Qualified Cultural Resource Consultant shall be a person who is acceptable to DTSC and who is also a qualified archaeologist with a graduate degree in archaeology, anthropology or closely related field, plus at least 3 years of full-time professional experience in general North American archaeological research and fieldwork, with expertise/experience in the Southwest preferred.	Annual cultural resources monitoring report	PG&E has retained qualified cultural resources consultants for implementation of the MMRP, subject to DTSC's approval.	On January 27, 2012, PG&E nominated Applied Earthworks, Inc. (AE) as the qualified cultural resource consultant for the groundwater remedy project and requested DTSC’s consideration and approval of AE. On March 2, 2012, DTSC accepted PG&E’s nomination and approved AE as the qualified cultural resource consultant for the groundwater remedy project.  In 2012, the Annual Cultural Monitoring event was conducted November 5 through 7, 2012.	The 2013 annual report titled “ <i>Topock Compressor Station Groundwater Remediation Project: Condition Assessments at Sixty-Nine Archaeological and Historical Sites</i> ” (AE 2014) was submitted to DTSC on March 12, 2014.	DTSC accepted PG&E’s nomination and approved AE as the qualified cultural resource consultant for the groundwater remedy project on March 2, 2012.  PG&E has offered to retain Tribal monitors at <a href="#">historic rates of compensation</a> .
Cultural Resources	CUL-1a-3b	b. Developing a site security plan as part of the CMI Workplan. The site security plan shall include, but not be limited to, instructions for PG&E personnel to inspect the project site routinely during construction and report any human-caused disturbance to project facilities and the surrounding environment to DTSC and the appropriate landowner, such as BLM, USFWS, or FMIT, as appropriate, depending on the ownership of the property involved in the incursion. Notification shall be within a specified period, as established in the site security plan for the event, and shall also be summarized as part of the periodic implementation status report, as approved by DTSC for remedy implementation. This measure does not impose any obligation on PG&E to perform law-enforcement duties on federal or private lands, but is intended to provide increased observation of potential intrusions into the project area during construction and operation of the final remedy that may impact significant cultural resources. PG&E staff, or assigned agents, should be instructed to report any outside disturbance to the environment personally observed over the course of the working day. Information shall be reported within a specific period, as established in the site security plan, to DTSC and the appropriate landowners, such as BLM, USFWS, or FMIT, depending on the ownership of the property intruded upon. The site security plan may also include the use of PG&E security cameras at major ingress/egress gates into the project site. Finally, if requested by the FMIT the plan may include the use of private security personnel to patrol the FMIT-owned parcel within the project area to prevent outside incursions.	Site security plan	In its June 17, 2011 comment on the Draft CMI Work Plan, DTSC stated that "Although DTSC specified that the site access and security plan are to be developed as part of the CMI Work Plan, DTSC acknowledges that the full scope of the plan cannot be accomplished without completion of the design. Therefore, DTSC agrees that PG&E can provide conceptual ideas within the CMI Work Plan for the development of a detailed plan as part of the final design." PG&E provided concepts of security provisions in the CMI Work Plan (Section 4.2.3). PG&E will prepare a site security plan for submittals as part of the final design (target late 2012).	Work on the site security plan has begun. The site security plan is planned for submittal as part of the 90% design (target late 2013).	A site security plan titled “ <i>Groundwater Remedial Action Site Security Plan</i> ” is included in an appendix of the Construction/Remedial Action <i>Work Plan</i> .  Also, PG&E will summarize any reports of human-caused disturbance to project facilities and the surrounding environment in the EIR mitigation monitoring compliance reports to be prepared quarterly during construction and annually during operations.	A site security plan titled <i>Groundwater Remedial Action Site Security Plan</i> is included as an appendix of the Construction/Remedial Action Work Plan, submitted on September 8, 2014.

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Cultural Resources	CUL-1a-3c	c. Coordinating with BLM and San Bernardino County to facilitate an outreach effort to the staff at Moabi Regional Park, requesting that they communicate to visitors the parts of the project area that are off limits to off-road vehicle usage because of health and safety concerns, public lands management plans, or landowner requests. PG&E shall make a good faith effort to involve the surrounding Tribes in this outreach effort, providing Interested Tribes with the opportunity to comment on outreach materials or provide a Tribal cultural resources specialist the opportunity to participate in the outreach activities. As part of this outreach effort, PG&E shall work with Park Moabi and offer to design, develop, and fund the installation of an informational kiosk within Park Moabi that informs visitors of the work being done at the project site. PG&E shall involve the Tribes to the maximum extent feasible, as determined by DTSC, in the design and development of the informational kiosk.	Design submittals	PG&E is currently in the process of implementing this mitigation measure.	PG&E is currently in the process of implementing this mitigation measure and has discussed with Interested Tribes at the monthly meetings on November 22, 2011, December 22, 2011, January 26, 2012, and March 22, 2012. To date, Tribal inputs have been received for this measure.  PG&E is coordinating with BLM and San Bernardino County on constructing an information kiosk within Park Moabi and posting signage to communicate restrictions to off-road vehicle usage in part of the project area and inform visitors of the work being done at the site.	PG&E has prepared a protocol for a) outreach to Moabi Regional Park staff regarding communication to visitors about the restrictions for off-road vehicle use, and b) establishing an information kiosk.	
Cultural Resources	CUL-1a-3d	d. Posting signage to indicate those parts of the project area that are off limits to off-road vehicle usage due to possible health and safety concerns and to reduce potential damage to environmental resources. If agreed to by land owners and/or local, state, or federal management entities within the project area, PG&E shall work with the relevant land owner or land management entity to develop, design, and fund the installation of easily visible and clear signage. This may include coordination with BLM to install signage noting the designation of the area as an Area of Critical Environmental Concern owing to its biological and cultural resources, while ensuring that signs are placed in a way that does not draw unwanted attention to specific resources.	Design submittals	PG&E will seek to work with land owners and land management entities (BLM, the Refuge, USFWS) during the design so that the signage can be established prior to commencing construction activities; implementation of this measure may take longer, however, depending upon requirements of land owners and land management entities.	PG&E will seek to work with land owners and land management entities (BLM, the Refuge, USFWS) during the design so that the signage can be established prior to commencing construction activities; implementation of this measure may take longer, however, depending upon requirements of land owners and land management entities.	PG&E has prepared a protocol to establish signage to indicate areas that are off limits to off-road vehicle usage in coordination with BLM.	
Cultural Resources	CUL-1a-4	PG&E shall work with representative members of the Interested Tribes to convene and retain a multidisciplinary panel of independent scientific and engineering experts as part of a Technical Review Committee (TRC). The TRC shall be made up of not more than five multidisciplinary experts who will be on call to review project-related documents, participate in project-related meetings, and advise interested Tribal members on technical matters relating to the final design and remedy. The TRC shall include only persons with technical expertise, including but not limited to geology, hydrology, water quality, engineering, paleontology, toxicology, chemistry, biology, or botany. Before July 1, 2011, PG&E shall post an open grant or Request for Qualifications (RFQ) and retain members of the TRC at rates comparable to those paid historically to Tribal experts by PG&E for the remediation project. TRC members shall be selected by majority vote of one representative from each participating Interested Tribe. PG&E shall provide Interested Tribes at least 30-days' notice of the meeting to select TRC members and to review TRC candidate qualifications. For the purposes of contracting, the grant may be awarded to one Tribal government to manage or, alternatively, PG&E may reimburse the Tribe or TRC members directly. The entirety of the monies shall be used to fund the scientific and engineering	EIR mitigation measures compliance reports (quarterly during design/ construction, annual during operation)	In compliance with this measure, PG&E posted a Request for Qualifications on several job boards, TRC members have been retained, and the TRC has been convened.	In March 2012, PG&E expanded the TRC scope to include review of documents related to the soil investigation at locations outside the Compressor Station.  As directed by this measure, an annual activity report was submitted to DTSC on June 29, 2012. In addition, TRC activities are summarized and included in the quarterly EIR mitigation measures compliance reports.	As directed by this measure, the second annual activity report titled “ <i>Annual Report Technical Review Committee Activities, Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California</i> ” (HDR 2013) was submitted on November 26, 2013. In addition, TRC activities are summarized and included in the quarterly EIR mitigation measures compliance reports (the last quarterly report was submitted on July 31, 2014; the next quarterly report is due October 31, 2014).	The TRC was convened on July 1, 2011.  The first annual activity report was submitted on June 29, 2012.  The second annual activity report was submitted on November 26, 2013.



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		team exclusively, and shall not be used to fund other Tribal government expenses or used to support legal counsel. A stipulation of the open grant shall be that the scientific and engineering team shall provide all deliverables and results to all involved Tribes, despite a possible contract agreement with only one Tribe or with PG&E. Upon conclusion of the construction phase of the project, the necessity and dollar value of the TRC shall be assessed by PG&E and, with the approval of DTSC, shall either be extended, reduced, or terminated under the operations and maintenance phase. An annual activity report shall be sent to DTSC for review and to ensure PG&E is in compliance.					
Cultural Resources	CUL-1a-5	Should any indigenous plants of traditional cultural significance and listed in Appendix PLA of this FEIR be identified within the project area, PG&E shall avoid, protect, and encourage the natural regeneration of the identified plants when developing the remediation design, final restoration plan, and IM-3 decommission plan. In the event that impacts on the identified plants cannot be avoided and such plants will be displaced, PG&E shall retain a qualified botanist who shall prepare a plant transplantation/monitoring plan which can be included as part of the Cultural Impact Mitigation Program (CIMP) referenced in CUL-1a-8 either by (1) transplanting such indigenous plants to an on-site location, or (2) providing a 2:1 ratio replacement to another location decided upon between PG&E and members of the Interested Tribes. Plans to transplant or replace such plants shall be approved by DTSC. In coordination with the qualified botanist, PG&E shall monitor all replanted and replacement plants for at least 3 5 years, and shall ensure at least a 75 percent survivorship during that time. This mitigation measure is not meant to replace or subsume any actions required by state or federal entities with regard to the protection of species listed as rare, threatened, or endangered.	Mitigation and monitoring plan for culturally sensitive plants	<p>A floristic survey was completed on November 1 through 8, 2011 to establish a comprehensive inventory of plant species that occur in the EIR project area, identify sensitive plants species and to comply with this mitigation measure, which requires PG&amp;E to avoid, protect, and encourage the regeneration of ethnobotanically significant plants listed in Appendix PLA of the EIR. The survey methodology is summarized in a technical memorandum entitled "<i>Topock Groundwater Remediation Project, Floristic Survey Methodology</i>" (CH2M HILL 2011c) and is included in Appendix A3 of this Basis of Design Report.</p> <p>Another round of floristic survey will held in the Spring 2012, however, the exact timing of the survey will be determined by a qualified botanist. A map will be prepared to document the survey results.</p>	<p>A continuation of the Fall 2011 floristic survey was conducted from March 12 to 20, 2012. Additional floristic survey was conducted from March 12 through 14 2013. On March 29, 2013 PG&amp;E submitted two reports related to plant surveys:</p> <p>a) The first report titled "Topock Groundwater Remediation Project Floristic Survey Report" summarizes the floristic survey results from 2011 and 2012; this report is included in Appendix A5 of this BOD report. Results from 2013 are planned to be included in the next design deliverable associated with the freshwater source details.</p> <p>b) The second report titled "Topock Groundwater Remediation Project Ethnobotany Survey Report" summarizes the survey results for ethnobotanically sensitive plants from 2011 and 2012; this report is included in Appendix A7 of this BOD report. Results from 2013 are planned to be included in the next design deliverable associated with the freshwater source details.</p> <p>In addition, PG&amp;E is working with interested Tribes on the plant transplantation/monitoring plan required under this measure, as part of the CIMP.</p>	<p>A Revised Floristic Survey Report (CH2M HILL 2013h) summarizing survey results from 2011 through 2013, including freshwater supply sites, was submitted on December 30, 2013. The report is also included in Appendix A5 of the 90% BOD.</p> <p>A Revised Ethnobotany Survey Report (CH2M HILL 2014e) summarizing survey results from 2011 through 2013 was submitted on January 15, 2014. The report is also included in Appendix A7 of the 90% BOD.</p> <p><i>The Supplemental Ethnobotanical Plant Surveys for the Pacific Gas and Electric Company's Topock Compressor Station, San Bernardino, California</i> report (CH2M HILL 2014f) summarizing the December 2013 Survey results was submitted on February 28, 2014. The supplemental report is also included in Appendix A7 of the 90% BOD.</p> <p>In compliance with this measure, a mitigation and monitoring plan for culturally sensitive plants was prepared and included as Appendix A of the CIMP.</p>	<p>The survey methodology technical memorandum was completed on October 31, 2011, and provided to Interested Tribes on November 8, 2011.</p> <p>The revised Final Floristic Survey Report was completed on December 30, 2013.</p> <p>The revised Final Ethnobotany Survey Report was completed on January 15, 2014. A supplemental report was completed on February 28, 2014.</p> <p>A mitigation and monitoring plan for culturally sensitive plants was prepared and included as Appendix A of the CIMP.</p>
Cultural Resources	CUL-1a-6	All additional phone calls and alarms associated with remediation activities or facilities shall not be routed through PG&E's existing alarm system utilized at the compressor station. The notification system for remediation-related alerts and/or phone calls shall not introduce additional noise to the project area, to the maximum extent feasible, provided there is ongoing compliance with applicable safety regulations or standards of the Federal Energy Regulatory Commission, Occupational Safety and Health Administration, and other agencies. (See Mitigation Measure NOISE-3 for additional mitigation related to the Topock Cultural Area).	Design submittals	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of this Basis of Design Report for the preliminary design. In addition, the detailed specification for phone calls and alarms associated with remediation activities will also be included the intermediate (60%) design.	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of the BOD Report for the intermediate (60%) design.	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of the BOD Report for the pre-final (90%) design.	

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Cultural Resources	CUL-1a-7	Nighttime construction-related activities shall be limited to work that cannot be disrupted or suspended until the following day, such as, but not limited to, well drilling and development or decommissioning activities. Lighting considerations, including the potential use of solar power for some lighting, shall be included as part of the remedial design plan to be developed with involvement of Interested Tribes and the U.S. Department of the Interior. To minimize construction and operations-related lighting impacts, the lighting in the remedial design plan shall include, at a minimum: (1) shrouding/shielding for portable lights needed during construction and operational activities; (2) installation of portable lights at the lowest allowable height and in the smallest number feasible to maintain adequate night lighting for safety; (3) shielding and orientation of lights such that off-site visibility of light sources, glare, and light from construction activities is minimized to the extent feasible. No additional permanent poles shall be installed for lighting. This mitigation measure is not meant to replace or subsume any actions required by the County or state or federal entities with regard to lighting required for minimum security and safety purposes.	Design submittals	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of this Basis of Design Report for the preliminary design (see C.5.2). In addition, the detailed specification for lighting will also be included the intermediate (60%) design.	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of the BOD Report for the intermediate (60%) design.  PG&E discussed this measure with interested Tribes in the monthly meetings on April 26, 2012, July 27, 2012, October 25, 2012, and November 9, 2012.	The requirement of this mitigation measure has been incorporated into the design criteria as presented in Appendix C of the BOD Report for the pre-final (90%) design.	
Cultural Resources	CUL-1a-8	Prior to commencement of construction, PG&E shall submit as part of the final Remedial Design, a CIMP developed in coordination with Interested Tribes for DTSC’s review and approval. The CIMP may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the Programmatic Agreement (Appendix PA). The CIMP shall include, at a minimum and to DTSC’s satisfaction, the following:	CIMP	Work on the CIMP commenced in May 2011. The CIMP will be submitted as part of final design as directed.	Work on the CIMP is ongoing. PG&E has been working collaboratively with interested Tribes on various sub-measures under the CIMP.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	PG&E started work on the CIMP in May 2011, in coordination with Interested Tribes during face- to- face meetings or teleconference calls held once per month. On July 8, 2013, PG&E provided a preliminary draft CIMP (including the IM-3 Decommissioning Plan) to Interested Tribes. Tribes provided comments on the draft CIMP in October 2013. PG&E reviewed and discussed select comments and responses with the Tribes during the March and April 2014 TMUs.  At DTSC’s and Tribes’ request, the CIMP (PG&E 2014) was submitted on May 1, 2014, in advance of the 90% design (see paragraph below for submittal dates related to the IM-3 Decommissioning Plan). PG&E incorporated select Tribes’ comments in the May 1, 2014 CIMP, and sent Tribes a letter to explain why certain comments were not incorporated.  <u>IM-3 Decommissioning Plan (Appendix B of CIMP)</u>  A preliminary draft IM-3 Decommissioning Plan was submitted to the FMIT in April 2013. The FMIT provided comments on the preliminary draft Plan in June 2013. PG&E updated the draft Plan and submitted to Interested Tribes as an appendix to the CIMP on July 8, 2013. The FMIT and the Hualapai Tribe provided comments on the updated Plan in October 2013. PG&E sent letters to respond to the Tribes’ comments on July 1 and discussed the	

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						responses during the July TMU. PG&E incorporated select Tribes’ comments and submitted a revised Plan with the 90% design on September 8, 2014.	
Cultural Resources	CUL-1a-8a	a. Protocols for continued communication. Consistent with past practice and the communication processes previously entered into by PG&E with Interested Tribes, the company shall continue to communicate with Interested Tribes during the design, construction, operation, and decommissioning of the project. Prior to implementation of construction, PG&E shall communicate with Interested Tribes that place cultural significance on the Topock Cultural Area. Outreach efforts between the Tribes and PG&E shall be communicated by PG&E to DTSC quarterly during the design and construction phase for review and input, and annually during project operations.	EIR mitigation measures compliance reports (quarterly during design/ construction, annual during project operation)	Outreach efforts have been and are ongoing. Table 7-2 of the 30% BOD Report contains a log of Tribal communications for the specified time period. With the completion of the CMI Work Plan in November 2011, PG&E will start to submit quarterly reports to DTSC, starting with the first report (Q4 2011) in January 2012.	Outreach efforts have occurred and are ongoing. Protocols for continued communication are being developed as part of the CIMP. This measure was discussed with interested Tribes at the monthly meeting on May 24, 2012 and December 4, 2012.  As required by DTSC, a log of communications with interested Tribes has been maintained and included in the quarterly EIR mitigation measure compliance reports since January 2012. The last quarterly report was submitted to DTSC on January 31, 2013. Table 6.1-2 of the 60% BOD Report contains a log of Tribal communications since the start of Q1 2013 through March 19, 2013.	Outreach efforts have occurred and are ongoing (e.g., monthly TMUs). Protocols for continued communication were developed and included as part of the CIMP.  As required by DTSC, a log of communications with interested Tribes has been maintained and included in the quarterly EIR mitigation measure compliance reports since January 2012. The last quarterly report was submitted on July 31, 2014; the next quarterly report is due October 31, 2014.	
Cultural Resources	CUL-1a-8b	b. Protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered during implementation of the final remedy, including protocols for the repatriation of significant items of cultural patrimony that may be recovered during the project, and protocols for the curation of cultural materials recovered during the project. Treatment of archaeological sites may include data recovery or capping. If data recovery is proposed, a Research Design following California Office of Historic Preservation guidelines or federal guidelines, as applicable, shall be prepared and reviewed and approved by DTSC.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on June 28, 2012 and December 4, 2012.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered during implementation of the final were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8c	c. Protocols for the review of cultural resource-related documents throughout the design, construction, and operational phases.	CIMP	Draft protocols for review of cultural resource-related documents were included in the CMI Work Plan (Section 4.8), and will also be included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on June 28, 2012, August 23, 2012, September 19, 2012, September 27, 2012, and January 15, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the review of cultural resource-related documents throughout the design, construction, and operational phases were developed and included as part of the CIMP.	

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Cultural Resources	CUL-1a-8d	d. Protocols for the review of project design documents before the beginning of construction, including reviews of project design documents throughout the design process (e.g., Preliminary [approximately 30% completed], Intermediate [approximately 60% completed] and Pre-final design).	CIMP	Draft protocols for review of cultural resource-related documents were included in the CMI Work Plan (Section 4.8), and will also be included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meetings on February 23, 2012, March 22, 2012, April 26, 2012, May 24, 2012, and January 15, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the review of project design documents were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8e	e. Protocols for the appropriate methods to be used to restore the environment to its preconstruction condition upon decommissioning of individual groundwater remedy facilities.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with Interested Tribes at the monthly meeting on January 15, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the appropriate methods to be used to restore the environment to its preconstruction condition upon decommissioning of individual groundwater remedy facilities were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8f	f. A plan for the decommissioning and removal of the IM-3 Facility and proposed restoration of the site (to be an appendix to the CIMP).	Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration	The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	The plan for the decommissioning and removal of the IM-3 Facility and site restoration was developed and included in Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan.	

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Cultural Resources	CUL-1a-8g	g. Protocols for the repatriation of clean soil cuttings generated during construction activities and during drilling associated with repair/replacement activities during operations and maintenance phases. The soil cuttings shall be managed in compliance with applicable laws and regulations on site.	CIMP	Discussions regarding repatriation of soils have been and are ongoing since early 2011. The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Discussions regarding protocols for the repatriation of soils have been and are ongoing since early 2011. Agencies and Tribal members reviewed and provided inputs on the draft <i>Management Protocol for Handling and Disposition of Displaced Site Material</i> , as well as participated in conference calls (January 9, 2012, April 10, 2012, June 15, 2012, and August 2012) to discuss comments. A revised protocol along with responses to comments (RTCs) was sent to Agencies and Tribes for review on August 28, 2012. FMIT sent a comment letter on the revised protocol and RTCs on September 7, 2012. DTSC responded to FMIT on September 18, 2012. Tribes and Agencies met on October 16, 2012 to further discuss RTC process. Subsequent to this meeting, DTSC issued directives for implementation of an updated RTC process. On January 14, 2013, the revised protocol was reissued along with updated RTCs (that reflected the updated RTC process) as part of the Final Soil RCRA Facility Investigation/Remedial Investigation Work Plan (CH2M HILL 2013b).  The revised protocol is also included in Appendix B of the Soil Management Plan (Volume 4 of the Draft O&M Manual), and will again be included in the CIMP. A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	The revised <i>Management Protocol for Handling and Disposition of Displaced Site Material</i> was included in Appendix C of the CIMP, Appendix B of the Soil Management Plan (Volume 4 of the Revised O&M Manual), and also as an appendix of the Construction/Remedial Action Work Plan.  Detailed procedures to implement the management protocol are included in the Soil Management Plan.	
Cultural Resources	CUL-1a-8h	h. Protocols for the appropriate methods, consistent with Mitigation Measure NOISE-3, to reduce auditory impacts.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval. This measure was discussed with interested Tribes at the monthly meeting on February 19, 2013.	Protocols for the appropriate methods, consistent with Mitigation Measure NOISE-3, to reduce auditory impacts, were developed and included as part of the CIMP.	

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Cultural Resources	CUL-1a-8i	i. Protocols for the appropriate methods, consistent with Mitigation Measures AES-1 and AES-2, to reduce visual intrusions.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on June 28, 2011, October 25, 2012, November 9, 2012, and March 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the appropriate methods, consistent with Mitigation Measures AES-1 and AES-2, to reduce visual intrusion were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8j	j. Protocols for Tribal notification in advance of project-related activities that the Interested Tribes may feel have the potential to cause adverse impacts to sensitive cultural resources.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with Interested Tribes at the monthly meeting on September 27, 2012, October 10, 2012, November 9, 2012, and March 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for Tribal notification in advance of project-related activities were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8k	k. Protocols to be followed by project personnel to accommodate, if feasible as determined by DTSC, key Tribal ceremonies that involve the Topock Cultural Area.	CIMP	Project personnel will accommodate, if feasible as determined by DTSC, key Tribal ceremonies that involve the Topock Cultural Area, provided that such Tribal ceremonies may not interfere with the expeditious implementation of the remedy or create health and safety concerns. This protocol will be included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on May 24, 2012, September 27, 2012, October 10, 2012, November 9, 2012, and February 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols to be followed by project personnel to accommodate key Tribal ceremonies that involve the Topock Cultural Area were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8l	l. Provisions affording sufficient Tribal monitors to observe ground-disturbing activities and/or other scientific surveying (e.g., biological surveys) that may occur in preparation for construction activities. Ground-disturbing activities include trenching, excavation, grading, well excavation/drilling, decommissioning of the IM-3 Facility and subsurface pipeline, or other construction-related activities.	CIMP	Tribal monitors will be invited to observe ground-disturbing activities. This provision will be included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on May 24, 2012, December 18, 2012, and February 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for Tribal monitors to observe ground- disturbing activities were developed and included as part of the CIMP.	

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Cultural Resources	CUL-1a-8m	m. Provisions of reasonable compensation for Tribal monitors consistent with historic rates.	CIMP	Tribal monitors will receive reasonable compensation consistent with agreed upon historic rates. This provision will be included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on May 24, 2012, December 18, 2012, and March 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Provisions required in this mitigation measure were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8n	n. Locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction.	CIMP	Locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction will be included in the CIMP.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on April 26, 2012, August 23, 2012, September 19, 2012, and March 19, 2013.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for protective measures for archaeological/historical sites during construction were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8o	o. Protocols for the reporting of discoveries of cultural importance consistent with existing statutes and regulations.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on June 28, 2012, September 27, 2012, October 10, 2012, and November 9, 2012.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the reporting of discoveries of cultural importance were developed and included as part of the CIMP.	
Cultural Resources	CUL-1a-8p	p. Protocols for the inspection of remediation facilities and/or staging areas throughout the construction phase.	CIMP	The required protocols will be developed and included in the CIMP. The CIMP will be submitted with the final design as directed.	Work on the CIMP is ongoing. The CIMP outline was discussed with interested Tribes on March 23 2012. PG&E has and will continue to discuss with and solicit inputs from interested Tribes on various mitigation measures under the CIMP. This measure was discussed with interested Tribes at the monthly meeting on June 28, 2012 and December 4, 2012.  A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.	Protocols for the inspection of remediation facilities and/or staging areas during construction were developed and included as part of the CIMP.	

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Cultural Resources	CUL-1a-9	During selection of the design and specific locations for physical remediation facilities, PG&E shall, in communication with the Interested Tribes (and subject to their review), and to the maximum extent feasible, as determined by DTSC, give: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including IM-3 facilities. “Disturbed” areas in this context means those areas outside of documented archaeological site boundaries that have experienced ground disturbance in the last 50 years. PG&E shall produce an aerial map of these disturbed areas to guide project design, and PG&E shall make a good faith effort to provide Tribes with an opportunity to review and comment on the information displayed on the map in determining “disturbed” areas.	Aerial map of disturbed areas	<p>As directed, PG&amp;E prepared an aerial map of disturbed areas to guide project design and made a good faith effort to provide Tribes with an opportunity to review and comment. PG&amp;E provided the disturbed areas map to Interested Tribes for review and comment on May 26, 2011. Written comments on the map were received from the FMIT on July 5, 2011 and the Hualapai Tribe on July 1, 2011. PG&amp;E responded to the Hualapai and the FMIT in July 2011 with an invitation to a site walk for discussion of the comments and ground-truth the map. To date, three Tribes have attended site walks/onsite meetings to discuss the map - the site walk/meeting with the Colorado River Indian Tribes (CRIT) occurred on June 7, 2011, the site walk/meeting with the FMIT occurred on October 4, 2011, and the site walk/meeting with the Hualapai Tribe occurred on October 26, 2011. Additional discussions regarding the aerial map are planned. A current version of the aerial map is included in Appendix A2 of this Basis of Design Report.</p> <p>In compliance with the directive to give priority to re-use of existing physical improvements and to previously disturbed areas for new physical improvements, the preliminary (30%) design proposes the following:</p> <ul style="list-style-type: none"><li>• The freshwater supply for the remedy will be the existing HNWR-1 well. If needed, this water supply can be supplemented by the current Compressor Station water supply (by existing Topock-2 and Topock-3 wells in Arizona).</li><li>• The freshwater supply storage will be the existing water storage tanks at the Compressor Station.</li><li>• The remedy-produced water treatment plant will be located entirely within the footprint of Compressor Station and much of it will replace existing structures within the maintenance shop area.</li></ul>	<p>The design has been and is carried out in a manner that gives: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, including but not limited to wells and pipelines, but not including IM-3 facilities.</p> <p>In compliance with the directive to give priority to re-use of existing physical improvements and to previously disturbed areas for new physical improvements, the intermediate (60%) design proposes the following:</p> <ul style="list-style-type: none"><li>• All existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.</li><li>• The freshwater supply for the remedy will be the existing HNWR-1 well.</li><li>• The freshwater supply storage will be the existing water storage tanks at the Compressor Station.</li><li>• The remedy-produced water treatment plant and the freshwater pre-injection treatment system will be located entirely within the footprint of Compressor Station.</li><li>• The central maintenance facility for the remedy will be located entirely on PG&amp;E property, at the Transwestern Bench. By centralizing maintenance functions into one location, this reduces the footprint of remedy structure outside of PG&amp;E property.</li></ul>	<p>The aerial map of disturbed areas was updated to include areas with planned facilities associated with freshwater supply in Arizona, and areas west of Moabi Regional Park associated with soil storage. The updated map is included in Appendix A2 of the 90% BOD Report.</p> <p>In compliance with the directive to give priority to re-use of existing physical improvements and to previously disturbed areas for new physical improvements, the pre-final (90%) design proposes the following:</p> <ul style="list-style-type: none"><li>• All existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.</li><li>• The piping corridor is located almost entirely in existing roadways, right- of- ways and previously disturbed areas.</li><li>• Most of the existing access roads have been incorporated into the 90% design.</li><li>• The remedy-produced water conditioning plant and the contingent systems (arsenic treatment and dissolved metals removal) are located entirely within the footprint of the Compressor Station.</li><li>• The operation building and carbon storage/amendment facilities are located on the existing Transwestern Bench and MW-20 Bench.</li><li>• All of the proposed soil storage and construction staging areas are located on previously disturbed areas.</li><li>• The main construction headquarter and staging area is located on previously disturbed areas at Moabi Regional Park.</li></ul>	<p>A current version of the aerial map of disturbed areas was submitted on November 18, 2011.</p> <p>An update of the aerial map of disturbed areas is included in Appendix A2 of the 90% BOD Report.</p>



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Cultural Resources	CUL-1a-10	PG&E shall consider the location of Loci A, B, and C of the Topock Maze during the design and approval of the physical facilities necessary for the final remedy and is prohibited from creating any direct physical impact on the Topock Maze, as it is manifested archaeologically. Through the design, PG&E shall prevent all indirect (e.g. noise, aesthetics) impacts on the Topock Maze, to the maximum extent feasible as determined by DTSC.	Design submittals	The design has been and is carried out in a manner that excluded direct impacts on Loci A, B, and C of the Topock Maze. Prevention of indirect impacts to the Maze will be incorporated into the design to the maximum extent feasible as determined by DTSC.	The design has been and is carried out in a manner that avoids any direct impacts on Loci A, B, and C of the Topock Maze. PG&E Remediation Resources Specialist Glenn Caruso participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with in-office reviews is to ensure that the footprints of planned facilities do not create direct physical impact on the Topock Maze, as it is manifested archaeologically. There are no remedy facilities inside the Topock Maze.  Prevention of indirect impacts to the Maze will be incorporated into the design to the maximum extent feasible as determined by DTSC.	The design was carried out in a manner that avoids any direct impacts on Loci A, B, and C of the Topock Maze. PG&E Cultural Resources Expert Glenn Caruso participated in field review of planned remedial facilities and temporary construction footprints with the design team on April 7-10, 2014. Glenn Caruso also led in-office reviews of planned facilities and temporary construction-related footprints. The purpose of the field review along with in-office reviews is to ensure that project footprints do not create direct physical impact on the Topock Maze, as it is manifested archaeologically. There are no remedy facilities inside the Topock Maze.  Prevention of indirect impacts (e.g., noise, aesthetics) to the Maze has been incorporated into the design as follows:  <u>Noise/Vibration</u>  a) In compliance with EIR mitigation measure NOISE-1a, there is no proposed remediation or new monitoring wells within 45 feet of vibration-sensitive receptors (i.e., homes/ structures) or within 30 feet and 275 feet of vibration-sensitive land uses (i.e., homes) in California and Arizona, respectively.  b) During the design, PG&E conducted site visits with Agencies, Tribes, and Stakeholders to view and obtain inputs on locations of planned facilities including new remediation, new monitoring wells, and piping corridors.  c) In response to Tribes’ comments on the 60% design, PG&E moved all remedy wells and vaults from the west side of NTH to the east side. In addition, PG&E will not use the east side (side that is closer to Maze A) of the TCS evaporation ponds for remedy construction staging.  d) As indicated in the 60% RTC #319, the Noise Engineer has reviewed the selection of aboveground transformers and air conditioning units for the enclosures of aboveground communication/control panels for conformance with the project noise design criteria (Appendix C of the 90% BOD Report).  e) Mitigation measure NOISE-2 to reduce auditory impacts related to project-generated construction-related noise has been incorporated into the Construction/Remedial Action Work Plan (Section 4) for implementation during construction.	

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						<p>f) PG&amp;E has developed protocols to reduce auditory impacts, consistent with EIR mitigation measure NOISE-3, as part of the CIMP, and has included those protocols in the Construction/Remedial Action Work Plan (Section 4) for implementation.</p> <p><u>Aesthetics</u></p> <p>a) During the design, PG&amp;E conducted site visits with Agencies, Tribes, and Stakeholders to view and obtain inputs on locations of planned remedial facilities.</p> <p>b) PG&amp;E implemented additional design protocols to reduce visual intrusions, as outlined in Section 2.9.2 of the CIMP.</p> <p>c) PG&amp;E has and will continue to provide opportunities for Agency, Tribal, and Other Stakeholder input on the visual nature of project design through inclusion of visualizations of select remedy components in design documents (CIMP protocol, see Section 2.9.3).</p> <p>d) PG&amp;E has developed protocols to reduce visual intrusion, consistent with mitigation measures AES-1 and AES-2, as part of the CIMP, and has included these protocols in the Construction/Remedial Action Work Plan (Section 4) for implementation.</p>	
Cultural Resources	CUL-1a-11	PG&E shall provide an open grant for two part-time cultural resource specialist/project manager positions during the design and construction phases of the remediation project. The positions shall be filled by qualified members of an Interested Tribe as nominated by a majority vote of their Tribal Council(s) and appointed by DTSC’s project manager if more than two members are nominated. The award of the grants is for continued involvement in review of project documents and participation in project-related meetings, including TRC meetings, at rates of historic compensation. Additionally, in light of FMIT’s ownership of land in the project area and historical involvement in the environmental process, additional funding is guaranteed for one full-time FMIT position upon submission of an application by a qualified FMIT member who shall be appointed by the FMIT council, provided such funding is not duplicative of the services and funding provided by PG&E pursuant to the Settlement Agreement between PG&E and the FMIT in Fort Mojave Indian <i>Tribe v. Dept. of Toxic Substances Control, et al.</i> , Case No. 05CS00437 for a position with the FMIT’s AhaMakav Culture Society. The payment of grant monies shall be timed to the awarded Tribes’ fiscal cycles so that the Tribes are not forced to front funds for long periods of time. These positions shall act as cultural resources contacts and project managers for interactions between the Tribes, PG&E, and DTSC to ensure coordination for review and comment of	Administrative step - no technical document required	A notice of the open grant for funding of two part-time cultural resource specialist/project manager positions was sent to Interested Tribes by a letter dated April 20, 2011. To date, PG&E has not received any responses to the April 20, 2011 letter from Tribes.	As of the submittal of the 60% design, PG&E has funded a second project manager position for the Cocopah Indian Tribe. The first funded position was for the Chemehuevi Indian Tribe.	There was no change since the 60% design.	As of the time of this writing, PG&E has funded a second project manager position for the Cocopah Indian Tribe. The first funded position was for the Chemehuevi Indian Tribe.

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		subsequent project and/or environmental documents related to the design and implementation of the groundwater remediation project to avoid, reduce, or otherwise mitigate impacts on historical resources, as defined by CEQA. This funding is separate from provisions for Tribal monitor positions and shall not be used for routine Tribal business or legal counsel. For review and approval, PG&E shall provide DTSC with the names of the selected grant recipients and an annual report that summarizes activities associated with the grant program. Upon the conclusion of the construction phase of the project, the necessity and dollar value of the grant program shall be assessed by PG&E and, with the approval of DTSC, shall either be extended or terminated under the operations and maintenance phase.					
Cultural Resources	CUL-1a-12	PG&E shall provide sufficient opportunity, as determined by DTSC, for Interested Tribes to provide a traditional healing/cleansing ceremony (or ceremonies) before and after ground disturbing construction activities occur.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will offer interested Native American Tribes the opportunity to provide a traditional healing/cleansing ceremony (or ceremonies) before and after ground disturbing activities occur.	PG&E will offer interested Native American Tribes the opportunity to provide a traditional healing/cleansing ceremony (or ceremonies) before and after ground disturbing activities occur.	PG&E will offer interested Native American Tribes the opportunity to provide a traditional healing/cleansing ceremony (or ceremonies) before and after ground disturbing activities occur.	
Cultural Resources	CUL-1a-13	PG&E shall, in communication with Interested Tribes, develop as part of the CMI Workplan, a worker cultural sensitivity education program. The program shall be implemented before commencement of construction and throughout construction and operations as personnel are added. This program may include information provided directly by Tribal entities either in written form or on video, in a manner consistent with Appendix C in the existing BLM Programmatic Agreement. The worker cultural sensitivity education program shall ensure that every person working on the project as an employee or contractor, before participating in design or outdoor activities at the project site, is informed regarding: the cultural significance of the Topock Cultural Area, appropriate behavior to use within the Topock Cultural Area, activities that are to be avoided in the Topock Cultural Area, and consequences in the event of noncompliance.	Worker Cultural Sensitivity Education Program	As described in the CMI Work Plan (Section 4.2.1), the education on cultural/historical resources sensitivity for Topock currently occurs via periodic training and project initiation meetings. Sensitivity training classes are conducted at least annually, and are attended by all workers available to participate. Sensitivity training/education is also provided at project initiation meetings, typically held at the site prior to field work. The training is provided by the Site Operations Manager, the Project Archaeologist, and Interested Tribal members who attend the meetings. In compliance with this measure, a training/education manual will be prepared using existing and new material, as available.	As described in Section 4.2.1 of the CMI/RD Work Plan (CH2M HILL 2011a), the education on cultural/historical resources sensitivity for Topock currently occurs via periodic training and project initiation meetings. Sensitivity training classes are conducted at least annually, and are attended by all workers available to participate. Sensitivity training/education is also provided at project initiation meetings, typically held at the site prior to field work. The training is provided by the Site Operations Manager, the Project Remediation Resources Specialist, and Interested Tribal members who attend the meetings.  In compliance with this measure, PG&E and Tribes are collaborating on a training/ education manual to educate workers. This measure was discussed with interested Tribes at the monthly meeting on April 26, 2012, August 23, 2012 and September 19, 2012.	PG&E has prepared, in coordination with agencies and Tribes, educational materials used in Orientation sessions for the Topock project. In addition, PG&E has prepared, in compliance with this measure, a protocol for the development of a cultural sensitivity education program to educate workers (included as an appendix to the Construction/ Remedial Action Work Plan). Implementation of this protocol is underway.	

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Cultural Resources	CUL-1b and 1c	<b>During Design, Construction, O&amp;M, and Decommissioning Consider the Location of Historical Resources and Implement Measures to Avoid Resources to the Extent Feasible.</b> The following actions will reduce the potential for impacts on identified historically significant resources (other than the Topock Cultural Area, which is separately addressed in CUL-1a) within the project area. As detailed below, these actions include consideration of the location of historical resources, preparation of a cultural resources study, and preparation of a treatment plan. Monitoring of ground-disturbing activities during project construction will further protect historically significant resources. Protective actions are also described pertaining to the discovery of any previously unidentified potentially significant cultural resources.	Design submittals	This mitigation measure will be met through actions taken to implement CUL-1b/c-1 through c-4 (see below). In addition, the aerial map of disturbed areas (CUL-1a-9) provides a first cut at protecting and avoiding archaeological and historical sites.	This mitigation measure will be met through actions taken to implement CUL-1b/c-1 through c-4 (see below). In addition, the aerial map of disturbed areas (CUL-1a-9) provides a first cut at protecting and avoiding archaeological and historical sites.  PG&E remediation resources specialist Glenn Caruso participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	This mitigation measure will be met through actions taken to implement CUL-1b/c-1 through c-4 (see below). In addition, the aerial map of disturbed areas (CUL-1a-9) provides a first cut at protecting and avoiding archaeological and historical sites.  PG&E Cultural Resources Expert Glenn Caruso participated in field review of planned remedial facilities and temporary construction footprints with the design team on April 7-10, 2014. Glenn Caruso also led in-office reviews of planned facilities and temporary construction-related footprints. The purpose of the field review along with in-office reviews is to ensure that project footprints are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	
Cultural Resources	CUL-1b/c-1	PG&E shall consider the locations of the identified historic resources described above (EIR Table 4.4-3) during the design of the physical improvements necessary for the proposed project and avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible, as determined by DTSC. The final design plans for the project will be submitted to DTSC for review and approval.	Design submittals	The design has been and is carried out to avoid impacts to historical and archaeological resources to the maximum extent practicable as determined by DTSC. The final design will be submitted to DTSC as directed.	PG&E remediation resources specialist Glenn Caruso participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	PG&E Cultural Resources Expert Glenn Caruso participated in field review of planned remedial facilities and temporary construction footprints with the design team on April 7-10, 2014. Glenn Caruso also led in-office reviews of planned facilities and temporary construction-related footprints. The purpose of the field review along with in-office reviews is to ensure that project footprints are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	
Cultural Resources	CUL-1b/c-2	During preparation of the final design, and consistent with CUL-1 a-3, PG&E shall retain a Qualified Cultural Resources Consultant to prepare a cultural resources study that assesses the potential for the construction, operations, or decommissioning of specific proposed improvements to result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c. This may include a geoarchaeological investigation and/or non-destructive remote-sensing surveys of potentially disturbed areas to determine if a potential exists for buried historical and archaeological resources. “Significant impacts” as used here means the potential for construction to demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR. The study will be submitted to DTSC for review and evaluation to determine if existing mitigation measures are appropriate.	Cultural resources study/Geoarchaeological investigation report	Consistent with CUL-1a-3, PG&E has retained qualified cultural resources consultants to prepare a cultural resources study. The study will commence at the intermediate (60%) design stage, after the locations of remedial facilities are confirmed.	This measure was discussed with interested Tribes at the monthly meeting on April 26, 2012. Geoarchaeological investigations were conducted on June 5-8, 2012 by Dr. Roland Brady of Brady and Associates Geological Services (BAGS) and Pat Maloney of Applied Earthworks (AE); Pat Maloney is the qualified cultural resources consultant. Participants from Interested Tribes include Wirlene Fischer-Holt (CRIT), Dr. Leo Leonhart (Consultant to the FMIT), and Dr. Margaret Eggers (TRC).  A geoarchaeological investigation report is forthcoming.	The geoarchaeological investigation report titled <i>Geoarchaeological Assessment for the Topock Remediation Project, Mohave County, AZ, and San Bernardino County, CA</i> was completed and submitted to DTSC on February 28, 2014 (BAGS and AE 2014). The information in this report has been used to inform the design (i.e., via reviews by PG&E Cultural Resources Expert) and incorporated into the Construction/Remedial Action Work Plan as protocols to be followed during construction activities (Section 4).	The geoarchaeological investigation report (BAGS and AE 2014) was completed on February 28, 2014.

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Cultural Resources	CUL-1b/c-3	If the cultural resources study determines that the construction of physical improvements would result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c, and avoidance of the resource is not feasible, PG&E shall prepare a treatment plan that identifies measures to reduce these impacts (see above description of the CIMP) for DTSC’s review and approval. The treatment plan shall identify which criteria for listing on the CRHR contribute to the affected resource’s significance and which aspects of significance would be materially altered by construction, operations, or decommissioning and shall provide for reasonable efforts to be made to permit the resource to be preserved in place or left in an undisturbed state. Methods of accomplishing this may include capping or covering the resource with a layer of soil. To the extent that a resource cannot feasibly be preserved in place or left in an undisturbed state, excavation as mitigation shall be restricted to those parts of the resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a historically significant resource if the treatment plan determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource. The plan shall require communication with all Interested Tribes with regard to their perspectives and wishes for the treatment of the resources.	Cultural resources treatment plan	Implementation of this measure is dependent upon the cultural resources study conducted under CUL-1b/c-2.	This measure was discussed with Interested Tribes at the monthly meeting on October 25, 2012 and November 9, 2012.	A Cultural Resources Treatment Plan will be prepared and submitted to DTSC shortly after the submission of the 90% design.	
Cultural Resources	CUL-1b/c-4	Consistent with CUL-1a-3a above, PG&E shall retain a Qualified Cultural Resources Consultant to observe ground-disturbing activities and shall be required to request the participation of Tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see the description of the CMI Workplan, above). The Qualified Cultural Resources Consultant shall provide training to construction personnel on the locations of identified resources, values associated with the identified resources, responsibility for reporting suspected historic resources, and procedures for suspension of work in the immediate vicinity of the discovery, and shall use exclusionary fencing, flagging, or other appropriate physical barriers to mark the boundaries of identified resources. The Qualified Cultural Resources Consultant shall invite participation from Interested Tribal members to participate in the training. In the event that previously unidentified potentially significant cultural resources are discovered during ground-disturbing activities, the Qualified Cultural Resources Consultant shall have the authority to divert or temporarily halt ground-disturbing activities in the area of discovery to allow evaluation of the potentially significant cultural resources. If such discoveries occur on land managed by a federal agency, Stipulation IX (Discoveries) of the Programmatic Agreement shall apply and are deemed adequate by DTSC. If a discovery occurs on other lands within the project area, the Qualified Cultural Resources Consultant shall contact		Consistent with CUL-1a-3, PG&E has retained qualified cultural resources consultants to observe ground-disturbing activities and provide training as required.	Consistent with CUL-1a-3, PG&E has retained AE, a consulting firm with qualified cultural resources consultants, to observe ground-disturbing activities and provide training as required.  This measure was discussed with Interested Tribes at the monthly meeting on October 25, 2012 and November 9, 2012.	Consistent with CUL-1a-3, PG&E has retained AE, a consulting firm with qualified cultural resources consultants, to observe ground-disturbing activities and provide training as required.	PG&E has retained AE, a consulting firm with qualified cultural resources consultants, to observe ground-disturbing activities and provide training as required.

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		the PG&E and DTSC project managers at the time of discovery and, in consultation with DTSC and Tribal monitors, shall evaluate the resource before construction activities will be allowed to resume in the affected area. For significant cultural resources, and before construction activities are allowed to resume in the affected area, the resource(s) shall be recovered with coordination of the Tribal monitors and DTSC. Recovery may include a Research Design and/or Data Recovery Program submitted to DTSC for review and approval. The Qualified Cultural Resources Consultant (and Tribal monitors) shall determine the amount of material to be recovered for an adequate sample for analysis or data recovery. Any concerns or recommendations regarding the ground-disturbing activities or the handling of cultural resources shall be directed to the Qualified Cultural Resources Consultant or PG&E’s site supervisor.					
Cultural Resources	CUL-2	<b>During Project Design Consider the Location of Unique Archaeological Resources and Avoid Resources to the Maximum extent Feasible.</b> Cultural resources that qualify as unique archaeological sites in the project area would probably also meet one or more of the criteria for historical resources and would be subject to Mitigation Measures CUL-1b/c-2 and CUL-1b/c-3. The mitigation measures under this identified impact are the same as listed for Impact CUL-1b and CUL-1c. These mitigation measures would reduce the potential for impacts on unique archaeological resources.	Cultural resources study/ Geoarchaeological investigation report; Cultural resources treatment plan	The requirements of this mitigation measure will be met by implementation of CUL-1b/c-2 and CUL-1b/c-3.	The requirements of this mitigation measure will be met by implementation of CUL-1b/c-2 and CUL-1b/c-3. This measure was discussed with interested Tribes at the monthly meeting on May 24, 2012.	The requirements of this mitigation measure have been met by implementation of CUL-1b/c-2 and CUL-1b/c-3.	
Cultural Resources	CUL-3	<b>Conduct Survey and Construction Monitoring.</b> A <b>paleontological investigation, including a detailed survey of the project area</b> by a qualified paleontologist, shall be conducted to refine the potential impacts on unique paleontological resources within the final design area and determine whether preconstruction recovery of sensitive resources and/or construction monitoring would be warranted. If construction monitoring is determined to be warranted, ground-altering activity would be monitored by a qualified paleontologist to assess, document, and recover unique fossils. Monitoring shall include the inspection of exposed surfaces and microscopic examination of matrix in potential fossil bearing formations. In the event microfossils are discovered, the monitor shall collect matrix for processing. In the event paleontological resources are encountered during earthmoving activities, recovered specimens shall be prepared by the paleontologist to a point of identification and permanent preservation. PG&E shall retain a Qualified Paleontologist to observe ground-disturbing activities where determined necessary based on the results of the paleontological investigation and shall be required to request the participation of Tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see above description of the CMI Workplan). Paleontological resources of scientific value shall be identified	Paleontological investigation report	PG&E has retained a paleontologist to conduct the investigation, planning for this investigation is currently underway. A draft report has been prepared and is being reviewed by PG&E.	This measure was discussed with interested Tribes at the monthly meeting on January 26, 2012. A paleontological investigation was conducted on July 25, 2012. The outcome of the survey was provided in a report completed in December 2012; this report is currently being revised to incorporate comments received.	The paleontological investigation results were summarized in a report titled “ <i>Paleontological Resources Management Plan: MMRP CUL-3</i> ” (Parus 2014) and submitted to DTSC on February 28, 2014. The plan is also included in an appendix of the Construction/Remedial Action Work Plan.	The paleontological investigation report (Parus 2014) was completed on February 28, 2014.

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		and curated into an established, accredited, professional museum repository in the region with permanent retrievable paleontological storage. This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation.					
Cultural Resources	CUL-4	<b>With Discovery of Human Remains or Burials Suspend Work, Protect Remains, and Comply with Local, State, and Federal Laws Regarding Discoveries During Ground-Disturbing Activities.</b> Ground-disturbing activities may disturb as-yet undiscovered human remains or Native American burials and associated grave goods. PG&E shall retain a Qualified Cultural Resource Consultant and request designated Tribal monitor(s) to train construction personnel in the identification of human remains so that they may aid in the identification of such resources (see above description of the CIMP). A Qualified Cultural Resource Consultant and Tribal monitor(s) shall be in place to adequately oversee all ground-disturbing activities. In the event human remains are uncovered over the course of project construction, operation and maintenance, and/or decommissioning activities, the following procedures shall be followed to ensure compliance with all applicable local, state, and federal laws.	Training material for the identification of human remains	PG&E will retain Qualified Cultural Resources Consultants prior to construction to prepare training material for the identification of human remains, provide training and oversee ground-disturbing activities as required. All of the provisions of this measure will remain in effect during construction, and will be implemented as directed in the event any human remains are uncovered during construction.	PG&E has retained AE and prior to construction monitoring AE will prepare training material for the identification of human remains, provide training and oversee ground-disturbing activities as required by this mitigation measure. All of the provisions of this measure will remain in effect during construction, and will be implemented as directed in the event any human remains are uncovered during construction.	PG&E has retained AE as the qualified cultural resource consultant and prior to construction monitoring, AE will prepare training material for the identification of human remains, provide training, and oversee ground-disturbing activities as required by this mitigation measure. All of the provisions of this measure will remain in effect during construction, and will be implemented as directed in the event any human remains are uncovered during construction.  Procedures for implementing this measure are included in an appendix of the Construction/ Remedial Action Work Plan.	
Cultural Resources	CUL-4f	f) The construction contractor shall immediately suspend work within the vicinity of the discovery and determine if the remains discovered are human or nonhuman. This determination shall be made by the Qualified Cultural Resources Consultant, a qualified archaeologist and/or physical anthropologist with expert skill in the identification of human osteological (bone) remains.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	
Cultural Resources	CUL-4g	g) The Qualified Cultural Resources Consultant (and Tribal monitor), or construction contractor, shall protect discovered human remains and/or burial goods remaining in the ground from additional disturbance.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	

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Cultural Resources	CUL-4h	h) The Qualified Cultural Resources Consultant, archaeologist, or construction site supervisor shall contact the San Bernardino County Coroner, and the PG&E and DTSC project managers immediately. In California, all subsequent action shall conform to the protocols established in the Health and Safety Code and regulations. In Arizona, the Qualified Cultural Resources Consultant or PG&E construction site supervisor will follow Arizona laws and the implementing regulations. Human remains found on federal land would require the notification of the BLM Havasu City field office and compliance with applicable federal laws and regulations, including the Native American Graves Protection and Repatriation Act if the remains are determined to be of Native American origin. The Qualified Cultural Resources Consultant shall coordinate the interaction between Interested Tribes, PG&E, the County, and DTSC to determine proper treatment and disposition of any remains.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	
Cultural Resources	CUL-4i	i) The San Bernardino County Coroner will determine if the remains are of recent origin and if an investigation of the cause of death is required (California Health and Safety Code Section 7050.5). If the coroner determines that the human remains are not Native American and not evidence of a crime, project personnel shall coordinate with the Qualified Cultural Resources Consultant (s) to develop an appropriate treatment plan. This may include contacting the next of kin to solicit input on subsequent disposition of the remains. If there is no next-of-kin, or recommendations by the next-of-kin are considered unacceptable by the landowner, the landowner will reinter the remains with appropriate dignity in a location outside the project area and where they would be unlikely to be disturbed in the future.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	
Cultural Resources	CUL-4j	j) In the event that the San Bernardino County Coroner determines that the human remains are Native American and not evidence of a crime, project personnel shall contact the NAHC so that a most likely descendent (MLD) can be identified as required under California Public Resources Code Section 5097.98.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	
Cultural Resources	CUL-4k	k) The MLD(s) shall inspect the area in which the human remains were found and provide treatment recommendations to the landowner and PG&E site manager in accordance with the provisions of PRC Section 5097.98. The treatment may include reburial, scientific removal of the discovered human remains and relinquishment to the MLD(s), nondestructive analysis of human remains and/or other culturally appropriate treatment. If the MLD(s) so requests, the landowner would reinter the remains with the appropriate dignity in a location outside the area of disturbance in a location unlikely to be disturbed in the future.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions taken under CUL-4.	



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Cultural Resources	CUL-4I	I) To the maximum extent feasible, Mitigation Measure CUL-4 shall be implemented in a manner that is consistent with mitigation required by local, state, and federal requirements.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	This requirement will be met by actions to be taken under CUL-4.	
<b>Geology &amp; Soils</b>	<b>GEO-1a</b>	<b>Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils.</b>					
Geology & Soils	GEO-1a-a	a) A DTSC-approved grading and erosion control plan, prepared by a California Registered Civil Engineer, shall be completed prior to implementation of any grading in areas of the site where there is a potential for substantial erosion or loss of top soils. The plan shall outline specific procedures for controlling erosion or loss of topsoil during construction, operation and maintenance, and decommissioning.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	A grading and erosion control plan will be prepared and included in the Construction/ Remedial Action Work Plan for DTSC review and approval.	A grading and erosion control plan will be prepared and included in the Construction/ Remedial Action Work Plan, which will be submitted as part of the final design for DTSC review and approval.	Grading plans including erosion control are included in Appendix D of the 90% BOD. Erosion control measures to be implemented during construction are also included in the Construction/Remedial Action Work Plan.	
Geology & Soils	GEO-1a-b	b) To ensure soils do not directly or indirectly discharge sediments into surface waters as a result of construction, operation and maintenance, or decommission activities, PG&E shall develop a SWPPP as discussed in mitigation measure HYDRO-1 of the “Hydrology and Water Quality” section of this EIR. The SWPPP shall identify best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction. PG&E shall prepare plans to control erosion and sediment, prepare preliminary and final grading plans, and shall prepare plans to control urban runoff from the project site during construction, consistent with the substantive requirements of the San Bernardino County Building and Land Use Services Department for erosion control.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare a BMP Plan prior to construction activities that will be included in the Construction/Remedial Action Work Plan.	PG&E will prepare a BMP Plan prior to construction activities that will be included in the Construction/Remedial Action Work Plan, to be submitted concurrently with the 90% design.	In compliance with mitigation measure HYDRO-1, a BMPs Plan for construction activities was prepared and is included in Section 4.10 of the Construction/Remedial Action Work Plan, as well as an appendix.  In addition, an industrial SWPPP was also prepared in compliance with mitigation measure HYDRO-1 and included in Appendix E of the O&M Plan (Volume 1 of the O&M Manual). The SWPPP includes BMPs related to operation and maintenance activities of the remedy.	
Geology & Soils	GEO-1a-c	c) During road preparation activities, loose sediment shall be uniformly compacted consistent with the substantive San Bernardino County Building and Land Use Services Department requirements to aid in reducing wind erosion. Ongoing road maintenance including visual inspection to identify areas of erosion and performing localized road repair and regrading, installation and maintenance of erosion control features such as berms, silt fences, or straw wattles, and grading for road smoothness shall be performed as needed to reduce potential for erosion.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed, to aid in reducing wind erosion.	This measure will be implemented as directed to aid in reducing wind erosion.	This measure will be implemented as directed to aid in reducing wind erosion (see BMPs Plan, in Section 4.10 and an appendix of the Construction/Remedial Action Work Plan).  Section 6.4 of the O&M Plan (Volume 1 of the O&M Manual) discusses general guidelines for maintenance of access roads and pathways, from visual assessment, local repairs, soil stabilization, and installation/maintenance of erosion controls, to grading.	
Geology & Soils	GEO-1a-d	d) Regarding the potential for contaminated soils to be eroded and contribute contamination into receiving waters, Mitigation Measures GEO-2 and HAZ-2 shall be implemented. Mitigation Measure GEO-2 provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure HAZ-2 provides the provisions for safe work practices and handling of contaminated soils as investigation derived wastes.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This mitigation measure will be met through actions to be taken to implement Mitigation Measures GEO-2 and HAZ-2 to prevent contaminated soils to be eroded and contribute contamination into receiving waters.	This mitigation measure will be met through actions to be taken to implement Mitigation Measures GEO-2 and HAZ-2 to prevent contaminated soils to be eroded and contribute contamination into receiving waters.	This mitigation measure will be met through actions to be taken to implement Mitigation Measures GEO-2 and HAZ-2 to prevent contaminated soils from being eroded and contributing contamination into receiving waters.	

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Geology & Soils	GEO-1b	Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils.					
Geology & Soils	GEO-1b-a	a) BMPs shall be implemented during construction, operation and maintenance, and decommissioning activities to minimize impacts on the affected areas. Such BMPs could include, but would not be limited to, the following: uniform compaction of roadways created for accessing the project area as per San Bernardino County Building and Land Use Services Department requirements, returning areas adversely affected by differential compaction to preexisting conditions when these areas are no longer needed, and continuing maintenance of access roads, wellhead areas, and the treatment plant areas.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. The BMPs will be identified in the Corrective Measure Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration (part of CIMP); Closure Plan for Decommissioning of Remedy Facilities and Restoration, as appropriate.	This measure will be implemented as directed. The BMPs will be identified in the Construction/Remedial Action Work Plan and Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration which will be submitted as part of the 90% design, as well as the Closure Plan for Decommissioning of Remedy Facilities and Restoration, which will be submitted prior to decommissioning.	This measure will be implemented as directed (see BMPs Plan Section 4.10 and in an appendix of the Construction/Remedial Action Work Plan; Section C2.2, Earthwork, in Appendix C (Design Criteria) of the 90% BOD; and Section 7.4, (Access Road and Pathway Maintenance, of the O&M Plan (O&M Manual Volume 1).	
Geology & Soils	GEO-1b-b	b) Work area footprints shall be minimized to the greatest extent feasible to limit the areas exposed to differential compaction. Where possible, existing unpaved access roads and staging/working areas shall be reused and maintained for different stages of the construction.  New graded areas for staging or for access roads shall be compacted to a uniform specification, typically on the order of 90 to 95% compaction and consistent with substantive San Bernardino County Building and Land Use Services Department requirements to reduce differential compaction and subsequent erosion of site soils.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed, to minimize work area footprints to the greatest extent feasible.	This measure will be implemented as directed, to minimize work area footprints to the greatest extent feasible.	This measure has been and will be continue to be implemented as directed. PG&E will strive to minimize work area footprints to the maximum extent feasible, while maintaining a safe work zone and environment for all staffs, contractors, as well as monitors and observers.  As discussed in CUL-1a-9, all of the soil storage and construction staging areas proposed in the 90% design are located on existing and/or previously used staging areas, as well as previously disturbed areas.  All trench sections underneath roadways and shoulders are designed to be compacted to 95% and all other areas to at least 90%.	
Geology & Soils	GEO-1b-c	c) After the completion of the operation and maintenance phase, the disturbed areas which result in increased potential for compaction shall be returned to their respective preexisting condition by regrading consistent with the preconstruction slopes as documented through surveys that may include topographic surveys or photo surveys. The areas will be returned to the surrounding natural surface topography and compacted consistent with unaltered areas near the access roads or staging areas in question.  The habitat restoration plan outlined in mitigation measure BIO-1 shall include restoration of native vegetation or other erosion control measures where revegetation would be infeasible or inadequate, for purposes of soil stabilization and erosion control of the project area.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. The Habitat Restoration Plan, developed in compliance with BIO-1, will include the requirements under this measure.	This measure will be implemented as directed. The forthcoming Habitat Restoration Plan, to be developed in compliance with BIO-1, will include the requirements under this measure.	<b><u>Resurfacing to Preconstruction Condition</u></b>  These requirements are included in the restoration guidelines for both the Plan for Decommissioning and Removal of the IM-3 Facility and Site Restoration (see Sections 8.1.2 and 8.1.3 of Appendix B of the CIMP) and measure CUL-1a-8e, Protocols for Restoring the Environment to its Preconstruction Conditions (see Sections 2.5.3 and 2.5.4 of the CIMP).  <b><u>Habitat Restoration and Revegetation</u></b>  In compliance with BIO-1, the Havasu National Wildlife Refuge Habitat Restoration Plan and the Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (both provided as appendices to the Construction/ Remedial Action Work Plan) include measures to address restoration of native vegetation.	

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Hazardous Materials	HAZ-1a	Spills or Releases of Contaminants during Operation and Maintenance Activities.					
Hazardous Materials	HAZ-1a-a	a) PG&E shall store, handle, and transport hazardous material in compliance with applicable local, state, and federal laws.	O&M Plan	This measure will be implemented as directed.	This measure will be implemented as directed.  Storage and handling of hazardous materials will be discussed in the Hazardous Materials Business Plan (HMBP), the outline for which is presented in Appendix F of the O&M Plan, with the complete HMBP to be submitted as part of the 90% design.	This measure will be implemented as directed.  Storage and handling of hazardous materials are discussed in the HMBP (Appendix F of the O&M Plan).	
Hazardous Materials	HAZ-1a-b	b) All chemical storage and loading areas shall be equipped with proper containment and spill response equipment. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response.	O&M Plan	This measure will be implemented as directed.	This measure will be implemented as directed.  Secondary containment for hazardous materials is described in the design criteria and drawings which are presented in Appendices C and D, respectively, of this BOD Report for the 60% design. Storage and handling of hazardous materials will be discussed in the HMBP, the outline for which is presented in Appendix F of the O&M Plan (Volume 1), with the complete HMBP to be submitted as part of the 90% design.	This measure will be implemented as directed.  Secondary containment for hazardous materials is described in the design criteria and drawings which are presented in Appendices C and D, respectively, of the BOD Report for the 90% design. Storage and handling of hazardous materials are discussed in the HMBP (Appendix F of the O&M Plan).	
Hazardous Materials	HAZ-1a-c	c) A project-specific HMBP, chemical standard operating procedure (SOP) protocols and contingency plans shall be developed to ensure that proper response procedures would be implemented in the event of spills or releases. Specifically, the HMBP and SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required personal protective equipment, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The field manager in charge of operations and maintenance activities shall be responsible for ensuring that these procedures are followed at all times.	Project-specific HBMP; O&M Plan	This measure will be implemented as directed.  A project-specific HMBP, chemical standard operating procedure (SOP) protocols and contingency plans will be developed to ensure that proper response procedures would be implemented in the event of spills or releases.	This measure will be implemented as directed.  Storage and handling of hazardous materials and spill response procedures will be discussed in the HMBP, the outline for which is presented in Appendix F of the O&M Plan (Volume 1), with the complete HMBP to be submitted as part of the 90% design.	This measure will be implemented as directed.  Storage and handling of hazardous materials and spill response procedures will be discussed in the HMBP (Appendix F of O&M Plan).	
Hazardous Materials	HAZ-1b	Spill or Release of Contaminants during Construction and Decommissioning Activities.					

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Hazardous Materials	HAZ-1b-a	a) Fueling areas and maintenance areas would be supplied with proper secondary containment and spill response equipment.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction will be described in the BMP Plan, which will be submitted at the 90% design stage as part of Corrective Measure Construction/Remedial Action Work Plan and Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction are described in the BMPs Plan in an appendix of the Construction/Remedial Action Work Plan. Appendix C of the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration contains a safe fueling and fuel handling policy for activities during implementation of the Work Plan.	
Hazardous Materials	HAZ-1b-b	b) PG&E shall develop fueling SOP protocols and a contingency plan that would be implemented at all fueling areas on-site. The SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required PPE, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. Potential measures include but are not limited to, fuel storage in bermed areas, performing vehicle maintenance in paved and bermed areas, and availability of spill kits for containment and cleanup of petroleum releases. The field manager in charge of construction and decommissioning activities shall be responsible for ensuring that these procedures are followed at all times.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Fueling SOP protocols and a contingency plan will be developed for implementation at fueling areas on-site during construction.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction will be described in the BMP Plan, which will be submitted at the 90% design stage as part of Corrective Measure Construction/Remedial Action Work Plan and Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction are described in the BMPs Plan in an appendix of the Construction/Remedial Action Work Plan. Appendix G (Construction BMPs Plan) of the Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration contains BMPs for storage and handling of hazardous materials.	
Hazardous Materials	HAZ-1b-c	c) PG&E shall comply with local, state, and federal regulations related to the bulk storage and management of fuels.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed, for compliance with local, state, and federal regulations related to the bulk storage and management of fuels.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction will be described in the BMP Plan, which will be submitted at the 90% design stage as part of Corrective Measure Construction/Remedial Action Work Plan and Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration.	This measure will be implemented as directed. Fueling areas and maintenance areas will be supplied with proper secondary containment and spill response equipment. BMPs/SOPs for fueling during construction are described in the BMPs Plan in Section 4 as well as an appendix of the Construction/Remedial Action Work Plan. Appendix G (Construction BMPs Plan) of the IM3 Decommissioning Plan contains BMPs addressing waste and materials storage and handling areas.	

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Hazardous Materials	HAZ-2	<b>Reasonably Foreseeable Releases of Chemicals from Excavated or Disturbed Soil</b> -- Before initiating ground-disturbing operations, a health and safety plan shall be developed and implemented by qualified environmental professionals to ensure health and safety precautions are being met. It is not possible to prepare the health and safety plan at this stage of the planning process because final construction plans and other design documents have not been finalized in sufficient detail. However, at a minimum, the health and safety plan shall include procedures to mitigate potential hazards, and such procedures shall include the use of PPE, measures that provide protection from physical hazards, measures that provide protection from chemical hazards that may be present at the site, decontamination procedures, and worker and health and safety monitoring criteria to be implemented during construction. The worker health and safety plan shall include protective measures and PPE that are specific to the conditions of concern and meet the requirements of the U.S. Occupational Safety and Health Administration’s (OSHA’s) construction safety requirements and Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). In accordance with OSHA requirements, appropriate training and recordkeeping shall also be a part of the health and safety program. The worker health and safety plan shall be certified by a Certified Industrial Hygienist in accordance with OSHA regulations. The worker health and safety plan shall be explained to the construction workers and all workers shall be required to sign the plan, which will be kept on the construction site at all times. Worker safety training shall occur prior to initiation of ground disturbing activities. Training shall include the review of all health and safety measures and procedures. All workers and engineering inspectors at the site shall provide written acknowledgement that the soils management plan (discussed below), worker health and safety plan, and community health and safety plan were reviewed and training was received prior to commencement of construction activities. The following are specific elements and directives that shall be included in the health and safety plan and implemented by PG&E during construction, operation and maintenance, and decommissioning of this project:	Health and Safety Plan	This mitigation measure will be implemented as directed. A health and safety plan will be developed for O&M activities and will be submitted with the O&M Plan. Similarly, a health and safety plan will be developed for construction activities and will be submitted with the Construction/Remedial Action Work Plan. The plans will be implemented by qualified environmental professionals.	This mitigation measure will be implemented as directed. A health and safety plan will be developed for O&M activities and will be submitted at the 90% design stage. Similarly, a health and safety plan will be developed for construction activities and will be submitted with the Construction/Remedial Action Work Plan at the 90% design stage. The plans will be implemented by qualified environmental professionals.	This mitigation measure will be implemented as directed. A health and safety plan for O&M activities was developed and is included in Volume 5 of the O&M Manual. Similarly, a health and safety plan for construction activities was developed and is included in an appendix of the Construction/Remedial Action Work Plan.	
Hazardous Materials	HAZ-2a	a. Vehicles traveling on unpaved roadways or surfaces would be directed to avoid traveling in areas where contaminated soils are known to be present; vehicle speeds shall be controlled (e.g., limited to 15 mph or slower) to limit generation of dust; measures, such as wetting of surfaces, will be employed to prevent dust generation by vehicular traffic or other dust-generating work activities.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Vehicle movement will be controlled to avoid traveling in areas where contaminated soils are known to be present, and limit speeds to limit generation of dust.	This measure will be implemented as directed. Vehicle movement will be controlled to avoid traveling in areas where contaminated soils are known to be present, and speeds will be limited to limit generation of dust.	This measure will be implemented as directed, and included in the health and safety plans. Vehicle movement will be controlled to avoid traveling in areas where contaminated soils are known to be present, and speeds will be limited to limit generation of dust.	

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Hazardous Materials	HAZ-2b	b. Pre-mobilization planning shall occur during which the likelihood of encountering contaminated soils shall be reviewed along with the HMBP, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place prior to implementing the field operations.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Pre-mobilization planning will be used to review the likelihood of encountering contaminated soils, the HMBP, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place.	This measure will be implemented as directed. Pre-mobilization planning will be used to review the likelihood of encountering contaminated soils, the HMBP, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place.	This measure will be implemented as directed, and included in the health and safety plans. Pre-mobilization planning will be used to review the likelihood of encountering contaminated soils, the HMBP, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place.	
Hazardous Materials	HAZ-2c	c. Should evidence of contaminated soil be identified during ground disturbing activities (e.g., noxious odors, discolored soil), work in this area will immediately cease until soil samples can be collected and analyzed for the presence of contaminants by the site supervisor or the site safety officer. Contaminated soil shall be managed and disposed of in accordance with a project-specific health and safety plan and soil management plan. The health and safety plan and soil management plan shall be approved by DTSC before beginning any ground disturbing activities. While the project is exempt from the requirements of the San Bernardino County Division of Environmental Health, the health and safety plan and soil management plan shall be prepared in general accordance with the substantive requirements of this agency.	Health and Safety Plan; Soil Management Plan (Volume 4 of O&M Manual)	This measure will be implemented as directed. A Health and Safety Plan and a Soil Management Plan will be prepared as part of the Construction/Remedial Action Work Plan and submitted to DTSC.	This measure will be implemented as directed. Project-specific Health and Safety Plans for construction and O&M activities will be prepared and submitted to DTSC at the 90% design stage.  A Soil Management Plan (SMP) is included in Volume 4 of the O&M Manual, which is Appendix L to the 60% BOD report. The SMP includes procedures and protocols for the management and disposal of potentially contaminated soil displaced during drilling, construction, O&M of the groundwater remedy, and the decommissioning and removal of the IM-3 system.	This mitigation measure will be implemented as directed. A health and safety plan for O&M activities was developed and is included in Volume 5 of the O&M Manual, which is Appendix L to the 90% BOD. Similarly, a health and safety plan for construction activities was developed and is included in an appendix of the Construction/Remedial Action Work Plan.  A Soil Management Plan (SMP) is included in Volume 4 of the O&M Manual. The SMP includes procedures and protocols for the management and disposal of displaced soil, including potentially contaminated soil, during drilling, construction, O&M of the groundwater remedy, and the decommissioning and removal of the IM-3 system.	
Hazardous Materials	HAZ-2d	d. In the event that drilling sites must be located within areas of suspected soil contamination, the appropriate PPE shall be worn by all personnel working in these areas and methods specified in the health and safety plan used to control the generation of dust. When working in these areas, personnel shall be required to follow all guidance presented in the site-specific health and safety plan and soil management plan. The site-specific health and safety plan shall include provisions for site control such as, but not limited to, delineation of the exclusion, contaminant reduction and support zones for each work area, decontamination procedures, and procedures for the handling of contaminated soils and other investigation derived wastes. Soil that is excavated shall be loaded directly into containers such as roll-off bins; dust suppression methods shall be used prior to and during loading of soils into the bins. Suspected contaminated soils shall be segregated from suspected uncontaminated soils.	Health and Safety Plan	This measure will be implemented as directed. A Health and Safety Plan will be prepared as part of the Construction/Remedial Action Work Plan and submitted to DTSC.	This measure will be implemented as directed. Project-specific Health and Safety Plans for construction and O&M activities will be prepared and submitted to DTSC at the 90% design stage.	This mitigation measure will be implemented as directed. A health and safety plan for O&M activities was developed and is included in Volume 5 of the O&M Manual. Similarly, a health and safety plan for construction activities was developed and is included in an appendix of the Construction/Remedial Action Work Plan.	
Hazardous Materials	HAZ-2e	e. Personnel working at the site shall be trained in Hazardous Waste Operations.	Health and Safety Plan	This measure will be implemented as directed. A Health and Safety Plan will be prepared as part of the Construction/Remedial Action Work Plan, and will include requirement for training of personnel working at the site in Hazardous Waste Operations.	This measure will be implemented as directed. Project-specific Health and Safety Plans for construction and O&M activities will be prepared and submitted to DTSC at the 90% design stage, and will include requirement for training of personnel working at the site in Hazardous Waste Operations.	This mitigation measure will be implemented as directed. A health and safety plan for O&M activities was developed and is included in Volume 5 of the O&M Manual. Similarly, a health and safety plan for construction activities was developed and is included in an appendix of the Construction/Remedial Action Work Plan.	

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Hazardous Materials	HAZ-2f	f. All soil excavated and placed in roll-off bins or trucks for transportation off-site shall be covered with a tarp or rigid closure before transporting, and personnel working in the area shall be positioned upwind of the loading location.	Soil Management Plan (Volume 4 of O&M Manual)	This measure will be implemented as directed. A Soil Management Plan will be prepared as part of the Construction/Remedial Action Work Plan, and will include requirement for soil excavated and placed in roll-off bins or trucks for transportation off-site to be covered with a tarp or rigid closure before transporting.	This measure will be implemented as directed. A Soil Management Plan (SMP) is included in Volume 4 of the O&M Manual, which is Appendix L to the 60% BOD report. The SMP includes requirement for soil excavated and placed in roll-off bins or trucks for transportation off-site to be covered with a tarp or rigid closure before transporting.	This measure will be implemented as directed. An SMP is included in Volume 4 of the O&M Manual, which is Appendix L to the 90% BOD report. The SMP includes requirement for soil excavated and placed in roll-off bins or trucks for transportation off-site to be covered with a tarp or rigid closure before transporting (see Section 4.6 of the SMP).	
Hydrology and Water Quality	HYDRO-1	<p><b>Exceedance of Water Quality Standards.</b> The project shall implement BMPs to meet the substantive criteria of NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ NPDES No. CAS000002 (General Permit) (SWRCB 2009) as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA, for purposes of ensuring the protection of receiving water quality. As such, a BMP plan shall be prepared and implemented for the project prior to construction and decommissioning phase activities. Impacts on water quality from pollutants, including soils from erosion, shall be controlled through use of the following types of BMPs, which shall be incorporated into the appropriate project-specific BMP plan. The General Permit requirements include specific BMPs as well as numeric effluent levels (NELs) and numeric action levels (NALs) to achieve the water quality standards (SWRCB 2009:3). Types of BMPs cited in the General Permit (SWRCB 2009:7) include: a) Scheduling of Activities; b) Prohibitions of Practices; c) Maintenance Procedures; d) Other Management Practices to Prevent or Reduce Discharge of Pollutants to Waters of the United States; e) Treatment Requirements; and f) Operating Procedures and Practice to Control Site Runoff, Spillage or Leaks, Sludge or Waste Disposal, or Drainage from Raw Materials Storage.</p> <p>Visual inspections and monitoring and sampling are required under the General Permit to evaluate the effectiveness of the BMPs and to determine whether modifying BMPs or implementing additional BMPs is required. The BMP designations cited below are based on those used by the California Stormwater Quality Association Construction BMP Handbook (California Stormwater Quality Association 2003) and are consistent with the types of BMPs referenced in the General Permit:</p> <p>g) Scheduling (SS-1): Proper scheduling assists in identifying ways to minimize disturbed areas, which allows for a reduction in the active project area requiring protection and also minimizes the length of time disturbed soils are exposed to erosive processes.</p> <p>h) Preservation of Existing Vegetation (SS-2): Preserving existing vegetation to the maximum extent practicable facilitates protection of surfaces from erosion and can also help to control sediments. Sensitive areas should also be clearly identified and protected.</p>	BMP Plan	This measure will be implemented as directed. PG&E will prepare a BMP Plan prior to construction activities which will be included in the Construction/Remedial Action Work Plan.	<p>This measure will be implemented as directed. PG&amp;E will prepare a BMP Plan prior to construction activities (at the 90% design stage) which will be included in the Construction/Remedial Action Work Plan.</p> <p>On December 27, 2011, the Superior Court issued a judgment in response to litigation, and the State Water Board will be amending Order 2009-0009-DWQ (as modified by Order No. 2010-00014-DWQ) in accordance with the related peremptory writ of mandate. As a result, the Numeric Effluent Limits (NELs) are no longer in effect. In addition, further amendments to the permit are possible.</p>	<p>This measure will be implemented as directed. A BMP Plan was prepared and included in an appendix of the Construction/Remedial Action Work Plan.</p> <p>On July 17, 2012, the State Water Resources Control Board amended Order 2009-009-DWQ by adopting Order No. 2012-0006-DWQ NPDES NO. CAS000002. Order 2012-006-DWQ requires effluent monitoring and reporting for pH and turbidity in storm water discharges. The monitoring will be used to evaluate whether numeric action levels (NALs) and numeric effluent limitations (NELs) for Active Treatment Systems included in the Construction General Permit are exceeded. The Permit contains only narrative effluent limitations and does not contain numeric effluent limitations, except for Active Treatment Systems (ATs).</p>	

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		<p>i ) Hydraulic Mulch (S S-3), Straw Mulch (S S-6), and Wood Mulching (SS-8): Using various mulches is a method for temporarily stabilizing soil and can be used on surfaces with little or no slope.</p> <p>j) Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats (SS-7): These erosion control methods can be used on flat or, usually, sloped surfaces, channels, and stockpiles.</p> <p>k) Stabilized Construction Entrance/Exit (TC-1): A graveled area or pad located at points where vehicles enter and leave a construction site can be built. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.</p> <p>l) Runoff Control Measures (SS-9, SS-10, and SC-10): These include graded surfaces to redirect sheet flow, diversion dikes or berms that force sheet flow around a protected area, and stormwater conveyances (swales, channels, gutters, drains, sewers) that intercept, collect, and redirect runoff. Diversions can be either temporary or permanent. Temporary diversions include excavation of a channel along with placement of the spoil in a dike on the downgradient side of the channel, and placement of gravel in a ridge below an excavated swale. Permanent diversions are used to divide a site into specific drainage areas, should be sized to capture and carry a specific magnitude of storm event, and should be constructed of more permanent materials. A water bar is a specific kind of runoff diversion that is constructed diagonally at intervals across a linear sloping surface such as a road or right-of-way that is subject to erosion. Water bars are meant to interrupt accumulation of erosive volumes of water through their periodic placement down the slope, and divert the resulting segments of flow into adjacent undisturbed areas for dissipation.</p> <p>m) Silt Fence (SC-1): A temporary sediment barrier consisting of fabric is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.</p> <p>n) Gravel Bag Berm (SC-6) and Sand/Gravel Bag Barrier (SC-8): A temporary sediment barrier consisting of gravel-filled fabric bags is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.</p> <p>o) Desilting Basin (SC-2) and Sediment Trap (SC-3): Constructing temporary detention structures facilitates the removal of sediment from waters. The devices provide time for sediment particles to settle out of the water before runoff is discharged.</p> <p>Secondary concerns include potential pollutants from inappropriate material storage and handling procedures and nonstormwater discharges. These will be addressed through the following types of BMPs, which shall be incorporated into the stormwater BMP plan:</p> <p>p) Material Delivery and Storage (WM-1): Provide covered storage for materials, especially toxic or hazardous materials, to</p>					



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		<p>prevent exposure to stormwater. Store and transfer toxic or hazardous materials on impervious surfaces that will provide secondary containment for spills. Park vehicles and equipment used for material delivery and storage, as well as contractor vehicles, in designated areas.</p> <p>q) Spill Prevention and Control (WM-4): Ensure that spills and releases of materials are cleaned up immediately and thoroughly. Ensure that appropriate spill response equipment, preferably spill kits preloaded with absorbents in an overpack drum, is provided at convenient locations throughout the site. Spent absorbent material must be managed and disposed of in accordance with applicable regulations. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as nonhazardous.</p> <p>r) Solid Waste Management (WM-5): Provide a sufficient number of conveniently located trash and scrap receptacles to promote proper disposal of solid wastes. Ensure that the receptacles are provided with lids or covers to prevent windblown litter.</p> <p>s) Hazardous Waste Management (WM-6): Provide a sufficient number of proper receptacles to promote proper disposal of hazardous wastes.</p> <p>t) Concrete Waste Management (WM-8): Dispose of excess concrete in specific concrete washout facilities.</p> <p>u) Sanitary/Septic Waste Management (WM-9): Locate sanitary and septic waste facilities away from drainage courses and traffic areas. Maintain the facilities regularly.</p> <p>v) Vehicle and Equipment Cleaning (NS-8): Clean vehicles and equipment that regularly enter and leave the construction site.</p> <p>w) Vehicle and Equipment Fueling (NS-9): Fuel vehicles and equipment off- site whenever possible. If off-site fueling is not practical, establish a designated on-site fueling area with proper containment and spill cleanup materials.</p> <p>x) Vehicle and Equipment Maintenance (NS-10): Use off-site maintenance facilities whenever possible. Any on-site maintenance areas must be protected from stormwater runoff and on-site flooding.</p>					

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Hydrology and Water Quality	HYDRO-1	In addition to BMPs implemented to avoid or reduce impacts from the construction and decommissioning phases, BMPs shall also be implemented to avoid or reduce impacts from the operations and maintenance phases. To address potential violation of water quality standards caused by insufficient treatment, system failure at concentrations in excess of water quality standards, proper design shall include contingency measures such as safeguards to shut down the extraction wells in case of pipeline failure or malfunction. In addition, operation of the proposed project will be governed by and follow an operations and maintenance plan. PG&E will comply with all applicable water quality standards, the General Permit, and any SWRCB or RWQCB resolutions identified as ARAR, as well as a corrective action monitoring program. Under the corrective action monitoring program, data will be collected to measure performance of the remedy, compliance with standards, and progress of the remedial action as a part of the project description. In addition, the project will be operated to continually assess performance issues and to modify the type, method, and configuration of the treatment delivery systems to enhance performance of the remedy to attain the cleanup goals and to respond to site conditions and performance issues as described in the project description.	O&M Plan	This measure will be implemented as directed. An O&M Plan will be developed and will include BMPs to avoid or reduce impacts from the operations and maintenance phases, and a monitoring program in compliance with applicable water quality standards, the General Permit, and identified ARARs.	This measure will be implemented as directed. The Contingency Plan (Volume 3) of the O&M Manual, which is included in the 60% design, includes BMPs to avoid or reduce impacts from the operations and maintenance phases. The Sampling and Monitoring Plan (Volume 2) of the O&M Manual includes a monitoring program in compliance with applicable water quality standards, and identified ARARs. The O&M SWPPP (Appendix E of the O&M Plan) will include a storm water monitoring program in compliance with the General Permit. The outline for the O&M SWPPP is included in the Draft O&M Manual at the 60% design stage; the complete SWPPP will be provided at the 90% design stage.	This measure will be implemented as directed. The Contingency Plan (Volume 3) of the O&M Manual), which is included in the 90% design, includes BMPs to avoid or reduce impacts from the operations and maintenance phases. The Sampling and Monitoring Plan (Volume 2) of the O&M Manual) includes a monitoring program in compliance with applicable water quality standards, and identified ARARs. The O&M (or industrial) SWPPP (Appendix E of the O&M Plan) includes a storm water monitoring program in compliance with the new Statewide Industrial Storm Water General Permit, which will become effective on July 1, 2015.	
Hydrology and Water Quality	HYDRO-1	A SWPPP will also be prepared for the proposed project, which will contain BMPs related to industrial activities (industrial SWPPP). The BMPs are designed to reduce pollutants in discharges that may affect receiving water quality during operations and maintenance of the proposed project. As noted above, BMP designations are based on those used by the <i>California Stormwater Quality Association Construction BMP Handbook</i> (California Stormwater Quality Association 2003) and those referenced in the General Permit The SWPPP will incorporate BMPs such as the following: y) Good Housekeeping: Maintain facility in a clean manner and train facility personnel to contribute to a safe, clean, and orderly environment by properly disposing of trash in designated containers, storing materials in appropriate locations, and keeping equipment clean and in good working condition. z) Preventative Maintenance: Prevent or minimize release of pollutants. Develop Standard Operating Procedures for operation and maintenance of facility components and train employees to follow the procedures. aa) Non-Stormwater Discharges (SC-10): Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Conduct regular inspections of high priority areas. bb) Spill Prevention, Control, and Cleanup (SC-1 1): Store materials properly to prevent spills from entering the storm drain system or surface waters. Ensure that spill cleanup materials are located on-site and are easily accessible. Clean up leaks and spills immediately using proper absorbent materials. Absorbents used to clean up hazardous materials must be	Stormwater Pollution Prevention Plan (SWPPP)/ BMP Plan and Monitoring and Reporting	This measure will be implemented as directed. An industrial Storm Water Pollution Prevention Plan (SWPPP) will be developed as part of the O&M Plan and implemented to reduce pollutants in discharges that may affect receiving water quality during operations and maintenance of the remedy	This measure will be implemented as directed. The O&M SWPPP outline is included as Appendix E of the O&M Plan. The complete SWPPP will be submitted at the 90% design stage. The SWPPP will be developed in compliance with the Industrial Storm Water General Permit Order 97-03-DWQ ( <a href="#">General Industrial Permit</a> ), or the relevant applicable requirements.	This measure will be implemented as directed. The industrial SWPPP was developed and included in Appendix E of the O&M Plan. The O&M (or industrial) SWPPP (Appendix E of the O&M Plan) includes a storm water monitoring program in compliance with the new Statewide Industrial Storm Water General Permit which will become effective on July 1, 2015.	

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		disposed of as hazardous waste. Educate employees about spill prevention and cleanup. cc) Vehicle and Equipment Fueling (SC-20): Maintain clean fuel-dispensing areas using dry cleanup methods, such as sweeping or using rags and absorbents for leaks and spills. Cover the fueling area to prevent contact with stormwater. Train personnel in pollution prevention, focusing on containment of spills and leaks. dd) Outdoor Loading/Unloading (SC-30): Load and unload chemicals during dry weather, if possible, and load and unload in designated areas. Check equipment regularly for leaks. ee) Outdoor Liquid Container Storage (SC-3 1): Cover the storage area with a roof and provide secondary containment. Inspect storage areas regularly for leaks or spills. ff) Outdoor Equipment Operations (SC-32): Perform activities during dry weather, cover the work area with a roof, and use secondary containment. Train employees in proper techniques for spill containment and cleanup. gg) Waste Handling and Disposal (SC-34): Cover storage containers with leak-proof lids, check for leaks weekly, and clean storage areas regularly. Ensure that wastes are disposed of properly. hh) Tank Design System: Ensure that tank systems have sufficient strength to avoid collapse, rupture, or failure and that they are protected against physical damage and excessive stress. Provide adequate secondary containment.					
Hydrology and Water Quality	HYDRO-1	In conformance with the substantive requirements of General Permit (Order No. 2009-0009-DWQ, a monitoring and reporting program will be implemented to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary, to continue to reduce pollutants and impacts on receiving waters. The monitoring program shall include the following minimum elements as per the General Permit: ii) quarterly, nonstormwater visual inspections, jj) storm-related visual inspections within 2 business days of a qualifying rain event (producing precipitation of one-half inch or more of discharge), kk) visual inspection after a storm event, ll) monitoring of nonvisual pollutants based on the calculated risk level for the project, with Risk Level 2 and 3 requiring a minimum of three samples per day during qualifying rain events (SWRCB 2009: Tables 5 and 6, 22–27), and mm) monitoring and reporting for linear projects as per Table 2.7-1A of the General Permit Results of this monitoring shall be reported annually to DTSC and to the Storm Water Multi-Application Reporting and Tracking System (SMARTS). The annual report shall include a summary and evaluation of all sampling and analysis results, original laboratory reports, and chain of custody forms; a summary of all corrective actions taken during the compliance year; and identification of any compliance activities or corrective actions that were not implemented. NEL Violation	Stormwater Pollution Prevention Plan (SWPPP)/ BMP Plan and Monitoring and Reporting	This measure will be implemented as directed. The SWPPP will include a monitoring and reporting program to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary.	This measure will be implemented as directed. The O&M SWPPP and BMP Plan, which will be submitted at the 90% design stage, will include a monitoring and reporting program to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary.  On December 27, 2011, the Superior Court issued a judgment in response to litigation, and the State Water Board will be amending Order 2009-0009-DWQ (as modified by Order No. 2010-00014-DWQ) in accordance with the related peremptory writ of mandate. As a result, the Numeric Effluent Limits (NELs) are no longer in effect. In addition, further amendments to the permit are possible.	This measure will be implemented as directed. The industrial SWPPP and BMP Plan include a monitoring and reporting program to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary.  On July 17, 2012, The State Water Resources Control Board amended Order 2009-009-DWQ by adopting Order No. 2012-0006-DWQ NPDES NO. CAS000002. Order 2012-006-DWQ requires effluent monitoring and reporting for pH and turbidity in storm water discharges. The monitoring will be used to evaluate whether numeric action levels (NALs) and numeric effluent limitations (NELs) for Active Treatment Systems included in the Construction General Permit are exceeded. The Permit contains only narrative effluent limitations and does not contain numeric effluent limitations, except for Active Treatment Systems (ATs).	

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		Reports and/or NAL Violation Reports are required for Risk Level 3 and linear underground/overhead project (LUP) Type 3 Discharges. Should the project meet these criteria, the respective reports shall be submitted within 5 days of the end of the storm event, as per General Permit requirements, and provide the required information identified (SWRCB 2009:26–27 and Table 2.7-1A). The implementation of stormwater plans shall include an education component to train workers on water quality concerns and proper BMP implementation, maintenance, and repair, in addition to stormwater management program training on the construction BMP plan and industrial SWPPP.					
Hydrology and Water Quality	HYDRO-2	<b>Exceedance of Water Quality Standards and/or Waste Discharge Requirements</b> - Implement Mitigation Measure HYDRO-1. Implementation of appropriate BMPs defined in Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling erosion and siltation. Consequently, any impacts associated with erosion and siltation resulting from alterations of drainage and hydrology and water quality during construction, operation and maintenance, and decommissioning.	Stormwater Pollution Prevention Plan (SWPPP)/ BMP Plan and Monitoring and Reporting	This measure will be met through actions to be taken under HYDRO-1.	This measure will be met through actions to be taken under HYDRO-1.	This measure will be met through actions to be taken under HYDRO-1.	
Hydrology and Water Quality	HYDRO-3	<b>Exceedance of Water Quality Standards and/or Waste Discharge Requirements.</b> Implement Mitigation Measure HYDRO-1. Mitigation Measure HYDRO- 1 shall be implemented. Implementation of appropriate BMPs defined in Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling potential pollutants, including sediment, and runoff discharges from the project area. Consequently, any impacts associated with pollutants resulting from alterations of drainage and water quality during construction, operation and maintenance, and decommissioning.	Stormwater Pollution Prevention Plan (SWPPP)/ BMP Plan and Monitoring and Reporting	This measure will be met through actions to be taken under HYDRO-1.	This measure will be met through actions to be taken under HYDRO-1.	This measure will be met through actions to be taken under HYDRO-1.	

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				Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design	
Noise	Noise-1	Short-Term Groundborne Noise and Vibration Levels Caused by Construction Activities near Sensitive Receptors.					
Noise	Noise-1a	a) Construct new wells a minimum of 45 feet from vibration-sensitive receptors. Avoid constructing wells within 30 feet of vibration- sensitive land uses located in California and 275 feet of vibration- sensitive land uses located in Arizona;	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	The EIR defined the Topock Marina Mobile Home Park or single family residences (page 4.9-20) as vibration-sensitive receptors. Since the EIR does not define vibration-sensitive land uses, PG&E assumes that they are residential and mobile home parks. Based on this definition, none of the remediation wells presented in the preliminary (30%) design are located within 45 feet of vibration-sensitive receptors or within 30 feet and 275 feet of vibration-sensitive land uses in California and Arizona, respectively. Locations of new monitoring wells will be presented in the intermediate (60%) design, these wells will be placed to meet the requirements of this mitigation measure.	The EIR defined the Topock Marina Mobile Home Park or single family residences (page 4.9-20) as vibration-sensitive receptors. Based on the EIR discussion, PG&E assumes that vibration-sensitive land uses are residential and mobile home parks. Based on this definition, none of the proposed remediation or new monitoring wells presented in the 60% design is located within 45 feet of vibration-sensitive receptors or within 30 feet and 275 feet of vibration-sensitive land uses in California and Arizona, respectively.	PG&E understands that NOISE-1 analyzes whether construction may result in the exposure of sensitive receptors to groundborne noise and vibration levels that exceed the applicable standards of the San Bernardino County Development Code (83.01.090) and the Mohave County Zoning Ordinance. Potential significant impacts the measure is designed to mitigate are “annoyance and/or architectural/ structural damage.” For the purpose of NOISE-1, the EIR defined the Topock Marina Mobile Home Park or single family residences (page 4.9-20) as vibration-sensitive receptors. Based on this definition, none of the proposed remediation or new monitoring wells presented in the 90% design is located within 45 feet of vibration-sensitive receptors or within 30 feet and 275 feet of vibration-sensitive land uses in California and Arizona, respectively.	
Noise	Noise-1b	b) A disturbance coordinator will be designated by the project applicant, which will post contact information in a conspicuous location near the entrance so that it is clearly visible to nearby receivers most likely to be disturbed. The coordinator will manage complaints resulting from the construction vibration. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby vibration-sensitive receptors, advising them of the construction schedule.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	Noise disturbance coordinators have been designated to manage communication with nearby vibration-sensitive receptors, and noise/vibration issues and complaints.	Noise disturbance coordinators have been designated to manage communication with nearby vibration-sensitive receptors, and noise/vibration issues and complaints.	PG&E disturbance coordinators (Curt Russell and Chris Smith) have been designated to manage both noise and vibration concerns that may arise during construction. The disturbance coordinators will post their contact information in a conspicuous location near the construction trailer entrance so that it is clearly visible to nearby receivers. The disturbance coordinator will send the construction schedule to nearby vibration-sensitive receptors prior to commencement of that construction work.  Should a concern about the actual noise generated by remedy construction arise, PG&E disturbance coordinator will thoroughly investigate and resolve the issue appropriately. A qualified acoustical consultant will evaluate all reoccurring disturbances for compliance with applicable standards. All noise complaints and their resolutions will be recorded, tracked, and reported to DTSC in the quarterly compliance reports.	Disturbance coordinators were designated on November 18, 2011

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Noise	Noise-2	Project-Generated Construction-Related Noise Levels.					
Noise	Noise-2a	a) Construction equipment shall be properly maintained per manufacturer specifications and fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Construction equipment will be maintained and fitted with available noise suppression devices, impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded.	This measure will be implemented as directed. Construction equipment will be maintained and fitted with available noise suppression devices, impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded.	This measure will be implemented as directed. Construction equipment will be maintained and fitted with best available noise suppression devices, applicable impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded.	
Noise	Noise-2b	b) Construction equipment shall not idle for extended periods of time (more than 15 minutes) when not being utilized during construction activities.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. Construction equipment will not be left idle for extended periods of time (more than 15 minutes) when not being used.	This measure will be implemented as directed. Construction equipment will not be left idle for extended periods of time (more than 15 minutes) when not being used.	This measure will be implemented as directed. Construction equipment will not be left idle for extended periods of time (more than 15 minutes) when not being used.	
Noise	Noise-2c	c) Construction activities shall include the use of berms, stockpiles, dumpsters, and or bins to shield the nearest noise-sensitive receptor adjacent to construction activities to within acceptable non-transportation noise level standards. When construction activities are conducted within the distances outlined above (i.e., 1,850 feet and 5,830 feet from California receptors and 330 feet and 735 feet from Arizona receptors for daytime and nighttime noise, respectively) relative to noise-sensitive uses in the project area, noise measurements shall be conducted by a qualified acoustical consultant at the nearest noise-sensitive land use relative to the construction activities with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2) to ensure that construction noise associated with the project component complies with applicable daytime and nighttime noise standards. If noise levels are still determined to exceed noise standards, temporary barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. All acoustical barriers shall be constructed with material having a minimum surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by the American Society for Testing and Materials’ Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by a qualified acoustical consultant.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	This measure will be implemented as directed. The use of berms, stockpiles, dumpsters, and or bins to shield the nearest noise-sensitive receptor adjacent to construction activities will be implemented. When construction activities are within the distance outline, the additional requirements specified in this measure will be implemented.	This measure will be implemented as directed. PG&E interprets the acceptable non-transportation noise level standards cited in the mitigation measure to be San Bernardino County Development Code 83.01.080; specifically Table 83-2 specifies noise standards for stationary noise sources for residential land use to be 55 A-weighted decibels (dBA) from 7 am-10 pm and 45 dBA from 10 pm-7 am, other Commercial land use to be 60 (dBA) all day, and Industrial land use to be 70 (dBA) all day. In addition, Section (g) of the County Code 83.01.080 lists the noise sources that are exempted from the regulations which include a) motor vehicles not under the control of the commercial or industrial use, b) emergency equipment/vehicles/devices, and c) temporary construction, maintenance, repair, or demolition activities between 7 am and 7 pm, except Sundays and Federal holidays. The use of berms, stockpiles, dumpsters, and/or bins to shield the nearest noise-sensitive receptor adjacent to construction activities will be implemented as needed. When construction activities are within the distance outline, the additional requirements specified in this measure will be implemented.	This measure will be implemented as directed. PG&E interprets the acceptable non-transportation noise level standards cited in the mitigation measure to be San Bernardino County Development Code 83.01.080; specifically Table 83-2 specifies noise standards for stationary noise sources for residential land use to be 55 A-weighted decibels (dBA) from 7 am-10 pm and 45 dBA from 10 pm-7 am, other Commercial land use to be 60 (dBA) all day, and Industrial land use to be 70 (dBA) all day. In addition, Section (g) of the County Code 83.01.080 lists the noise sources that are exempted from the regulations which include a) motor vehicles not under the control of the commercial or industrial use, b) emergency equipment/vehicles/devices, and c) temporary construction, maintenance, repair, or demolition activities between 7 am and 7 pm, except Sundays and federal holidays. Figures in Section 4 of the Construction/ Remedial Action Work Plan identify the noise sensitive receptors and potential construction activities that could trigger noise monitoring in accordance with the EIR mitigation measure Noise-2c. Although night-time construction is not planned, activities that could occur within specified distance from the sensitive receptors are identified on both figures for completeness. Noise monitoring locations will be the boundary of the noise receptors facing the project-related construction activities. The precise monitoring locations will be	

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						determined in the field by a qualified acoustical consultant.  The use of berms, stockpiles, dumpsters, and/or bins to shield the nearest noise-sensitive receptor adjacent to construction activities will be implemented as needed, and is included in the Construction/Remedial Action Work Plan.  When construction activities are within the distance outline, the additional requirements specified in this measure will be implemented (additional details are provided in the Construction/Remedial Action Work Plan).	
Noise	Noise-2d	d) A disturbance coordinator will be designated by the project applicant, which will post contact information in a conspicuous location near construction areas so that it is clearly visible to nearby receivers most likely to be disturbed. In addition, mailing of the same information will be sent to nearby receptors and all Tribes. The coordinator will manage complaints resulting from the construction noise. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby noise- sensitive receptors, advising them of the construction schedule.	Construction/Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	Noise disturbance coordinators have been designated to manage communication with nearby vibration-sensitive receptors, and noise/vibration issues and complaints.	Noise disturbance coordinators have been designated to manage communication with nearby vibration-sensitive receptors, and noise/vibration issues and complaints.	PG&E disturbance coordinators (Curt Russell and Chris Smith) have been designated to manage both noise and vibration concerns that may arise during construction. The disturbance coordinators will post their contact information in a conspicuous location near the construction trailer entrance so that it is clearly visible to nearby receivers. The disturbance coordinator will send the construction schedule to nearby noise-sensitive receptors prior to commencement of that construction work.  Should a concern about the actual noise generated by remedy construction arise, PG&E disturbance coordinator will thoroughly investigate and resolve the issue appropriately. A qualified acoustical consultant will evaluate all reoccurring disturbances for compliance with applicable standards. All noise complaints and their resolutions will be recorded, tracked, and reported to DTSC in the quarterly compliance reports.	Disturbance coordinators were designated on November 18, 2011
Noise	NOISE-3	<b>Land Use Compatibility of Future Project Noise Levels with Places of Worship and the Topock Cultural Area.</b>  Provided that the proposed project would be required to achieve the normally acceptable exterior noise level standard for places of worship, the following mitigation measure shall be incorporated in the project design:		This mitigation measure will be met through actions taken to implement NOISE-3a and 3b (see below).	This mitigation measure will be met through actions taken to implement NOISE-3a and 3b (see below).	The project has been designed to meet the normally acceptable exterior noise-level standard for places of worship during operation.  This mitigation measure also will be met through actions taken to implement NOISE-3a and 3b (see below).	
Noise	NOISE-3a	a) Implement all of the mitigation measures outlined for Impact NOISE- 1 and Impact NOISE-2;		This measure will be met through actions to be taken under mitigation measures outlined for Impact NOISE- 1 and Impact NOISE-2.	This measure will be met through actions to be taken under mitigation measures outlined for Impact NOISE- 1 and Impact NOISE-2.	This measure will be met through actions to be taken under mitigation measures outlined for Impact NOISE- 1 and Impact NOISE-2.	

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Noise	NOISE-3b	b) Upon completion of detailed project design, the determination of remediation activities and the schedule established to achieve these activities shall be communicated to Native American Tribes. PG&E shall maintain a liaison with requesting Tribes to alert them to project activities that would generate new noise in the Topock Cultural Area on at least an annual basis.		This measure will be implemented as directed. A liaison with requesting Native American Tribes will alert them to project activities that would generate new noise in the Topock Cultural Area on at least an annual basis.	This measure will be implemented as directed. A liaison with requesting Native American Tribes will alert them to project activities that would generate new noise in the Topock Cultural Area on at least an annual basis.	<p>This measure will be implemented as directed. A liaison with requesting Native American Tribes will alert them to project activities that would generate new noise in the Topock Cultural Area on at least an annual basis. In addition, the following communication protocols developed as part of the CIMP noise protocol CUL-1a-8h (Section 2.8.4) will also be implemented:</p> <p>All project construction activities will be communicated to nearby noise-sensitive receptors and Interested Tribes. Elements of this communication include:</p> <ul style="list-style-type: none"><li>• A detailed project schedule is established and published for all stakeholders.</li><li>• Monthly notification to agencies and Tribes of scheduled field activities. During periods of extensive construction activity, these notifications will be issued more frequently – weekly and/or daily, as appropriate.</li><li>• After issuing these notifications, notify the nearby noise-sensitive receptors and Tribes of any schedule changes.</li><li>• Provide an open-communication process for Tribal representatives to seek more information about Project noise-generating activities. PG&amp;E welcomes Tribal input on timing of Project noise-generating activities and on potential noise-reducing methods. Per CUL-1a-8k, if ceremonies are requested by any Tribe during construction, then PG&amp;E will follow the protocol to accommodate such requests, which could include monitoring to ensure that construction noise does not exceed the normally acceptable exterior noise level standard in San Bernardino County for places of worship.</li><li>• The contact information for the disturbance coordinator will be posted in a conspicuous location near the construction areas. This information will also be mailed to all nearby noise-sensitive receptors and Interested Tribes.</li></ul> <p>In addition to the communication methods described above, PG&amp;E will also consider posting construction schedule information at the information kiosk (CUL-1a-3c). PG&amp;E may also decide to use other communication processes, including a Project website (a Project website could list Project activity schedules and other Project related</p>	



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						information) that could be accessed by computer or smartphone and/or other simple push applications that apply to mobile devices.	
Water Supply	WATER-1	<b>Depletion of Groundwater.</b> To mitigate potentially significant effects on local groundwater levels associated with the freshwater extraction wells, in the event that freshwater is to be supplied from wells rather than from a surface intake, a hydrologic analysis shall be conducted during the design phase of the project to evaluate the proposed pumping rates for extraction, the potential cone of depression, and the extraction effect on any existing wells in proximity. Proximity shall be defined by the cone of depression boundary of any well to be used in the extraction process. Extraction well location and/or extraction rates shall be adjusted during project design based on this analysis to ensure that extraction does not substantially adversely affect the production rates of existing nearby wells (e.g., adversely affect well production such that existing land uses would not be supported). It shall be demonstrated using computer simulations or other appropriate hydrologic analysis that production rates of existing nearby wells will not be substantially affected before the installation of any new freshwater extraction wells.	Alternative Freshwater Sources Evaluation Technical Memorandum	Work on the required hydrologic analysis has commenced and will be reported in the intermediate (60%) design.	A plan for conducting a long-term constant-rate extraction test at HNWR-1 well is included in the <i>Revised Implementation Plan for Evaluation of Alternative Freshwater Sources</i> (CH2M HILL 2013c). Upon receipt of agencies’ approval, PG&E will implement the plan. Data collected will be used to evaluate compliance with this measure.	A 72-hour constant-rate extraction test at Havasu National Wildlife Refuge (HNWR)-1 well was conducted in February 11-14, 2014 in accordance with the <i>Final Implementation Plan for Evaluation of Alternative Freshwater Sources</i> (CH2M HILL, 2013j). In addition, a 72-hour constant-rate extraction test was conducted at the Site B well from February 7 to 10, 2014. Test results indicated that existing nearby wells will not be substantially affected by pumping at the potential freshwater sites. PG&E presented the information to agencies, Tribes, and stakeholders at the March 19, 2014 TWG meeting, and summarized the results in a technical memorandum (CH2M HILL 2014b) for submittal to DTSC and DOI on April 2, 2014.	

Notes:

<sup>1</sup> The intent of this column is to identify what current or future document(s) are intended to satisfy this measure and be transparent on future forthcoming documentation. This column is not intended to document compliance with the mitigation measure.



EXHIBIT L1.1-1

**Protocol for Compliance with EIR MMRP Mitigation Measure BIO-1 and ARAR #32  
at the Topock Compressor Station**

*Operation and Maintenance Manual*

*PG&E Topock Compressor Station, Needles, California*

**Application of Section 404 of the Clean Water Act to the Project**

Pacific Gas & Electric Company (PG&E) has prepared this protocol to identify procedures to be taken to ensure compliance with Section 404 of the Clean Water Act (CWA) and for the Topock Remediation Project (the project) located at the Topock Compressor Station in Needles, California. Section 404 of the CWA is an Applicable or Relevant and Appropriate Requirement (ARAR) for the project. Additionally, the Final Environmental Impact Report (EIR) Mitigation and Monitoring Reporting Program (MMRP; California Department of Toxic Substances Control [DTSC] 2011c) mitigation measure BIO-1 contains applicable mitigation requirements related to CWA Section 404.

The text of MMRP BIO-1 (excerpted) and ARAR #32 are as follows:

**BIO-1:** “If during the design process it is shown that complete avoidance of habitats under U.S. Army Corps of Engineers (USACE) jurisdiction is not feasible, the Section 404 permitting process shall be completed, or the substantive equivalent per CERCLA Section 121(e)(1). In either event, the acreage of affected jurisdictional habitat shall be replaced and/or rehabilitated to ensure ‘no-net-loss’ Before any ground-disturbing Project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland delineation process and to DTSC. For all jurisdictional areas that cannot be avoided as described above, authorization for fill of wetlands and alteration of waters of the United States shall be secured from USACE through the Section 404 permitting process before project implementation. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to USACE and consistent with applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented.

Alternatively, if USACE declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the substantive equivalent of the Section 404 permitting process shall be complied with by ensuring that the acreage of jurisdictional wetland affected is replaced on a “no-net-loss” basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC to document compliance with these mandates.”

**ARAR #32:** “This section of the Clean Water Act prohibits certain activities with respect to on-site wetlands and waterways. No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed activity which would have less adverse impact to the aquatic ecosystem.” Federal Water Pollution Control Act (Clean Water Act), 33 USC § 1344, 40 CFR 230.10.

Under CWA Section 404, activities that discharge dredged or fill material into waters of the United States typically require a CWA Section 404 permit from the USACE.

PG&E has determined that the Topock Remediation Project would result in a discharge of dredged or fill material into jurisdictional waters and wetlands. However, the project is a CERCLA response action, and therefore the permit exemption at CERCLA Section 121(e)(1) applies to the project’s on-site activities.<sup>3</sup> Therefore, PG&E is not required to

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<sup>3</sup> See 42 U.S.C. 9921(e)(1) (“No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site where such remedial action is selected and carried out in compliance with this section.”); DOI Memorandum, dated November 16, 2007.

comply with the procedural permitting requirements under Section 404. Although no CWA Section 404 permit is required for the Project, PG&E must still comply with the substantive requirements of the CWA Section 404.

PG&E received a letter from the USACE Los Angeles District Regulatory Program, dated July 10, 2013 (USACE 2013a), which stated that no permit is required for the Topock Remediation Project because the project is proceeding pursuant to the U.S. Department of the Interior's (DOI) CERCLA authority. Further, the USACE confirmed that no "substantive requirements or applicable conditions" were provided and the USACE would not verify PG&E's wetland delineation because no permit is required for the CERCLA action (USACE 2013b).

Section 404(b)(1) of the CWA requires that alternatives (or proposed actions) be designed to avoid or minimize adverse impacts to aquatic resources and waters of the United States. Compliance with the 404(b)(1) Guidelines can be achieved generally through the use of appropriate and practicable mitigation measures to minimize or compensate for potential adverse impacts of the discharge on the aquatic ecosystem (40 CFR 230.10(d)). Compensatory mitigation is considered after other appropriate and practicable options have been addressed to avoid and minimize adverse impacts to the aquatic environment. "Practicable" is defined in 40 CFR 230.3(q) to mean "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."

Further, Section 404(b)(1) requires the least environmentally damaging practicable alternative be selected. During the course of the groundwater remedy design (including the Alternative Freshwater Source Evaluation), efforts were and will continue to be undertaken to avoid and minimize impacts to jurisdictional waters of the United States. However, it has been determined that in order to meet the goals of protection of human health and the environment, to meet the RAOs for the remedy, to monitor remedy performance, to gather data for demonstration of compliance, as well as in response to resolution of design comments with the Tribes, infrastructure (remediation, monitoring wells, and associated piping/conduits) must be installed in certain washes. There are no practicable alternatives to locating certain infrastructure within waters of the United States. For example, monitoring well Q is sited in a wash because it is designed to monitor the effects of injection from well IRL-4, which was placed in a wash as a result of comment resolution at 30% design. Also, to minimize new infrastructure, the remedy design incorporates all existing monitoring wells into the remedy monitoring program. Some of the existing wells are located in Bat Cave Wash and the East Ravine.

### **1. Avoidance of Adverse Impacts to Wetlands and Non-Wetland Waters of the U.S.**

In order to achieve the goal of no-net loss of jurisdictional waters of the U.S., including wetlands, avoidance and minimization measures (AMMs) will be implemented. PG&E prepared a Final Wetlands and Waters of the U.S. Delineation Report (CH2M HILL 2014c), delineating jurisdictional waters of the U.S., that was submitted to DTSC and DOI in April 2014, and has taken the location of jurisdictional waters of the U.S. into consideration in the design of the groundwater remedy in order to avoid impacts to jurisdictional wetlands and waters of the U.S. to the extent practicable.

During the remainder of the design phase, PG&E's design team will consult the Wetlands and Waters of the U.S. Delineation Report while considering the location of remedy infrastructure. PG&E's design team will prioritize avoidance of all wetland and non-wetland waters of the U.S. During the remainder of the remedy design, PG&E will continue to implement avoidance, to the extent practicable, and impacts to jurisdictional waters would occur only when there is no practicable alternative available.

### **2. Minimization of Adverse Impacts to Wetlands and Non-Wetland Waters of the U.S.**

Consistent with 40 CFR 230.10(d) and Subpart H of Part 40 CFR 230 requirements to minimize the adverse effects of the discharge of dredged or fill material associated with the Topock Remediation Project, PG&E will implement AMMs during the design phase and best management practices (BMPs) during construction of the remedy in order to minimize adverse impacts to wetlands and non-wetland waters of the U.S.

Minimization measures will be implemented to minimize impacts to wetland and non-wetland waters of the United States within the Project area. All efforts will be taken to avoid jurisdictional resources to the extent practicable. Although the USACE did not provide a list of measures that may be taken to reduce impacts to jurisdictional waters and wetlands, the California Department of Fish and Wildlife (CDFW) requires compliance with AMMs in lieu of a Lake or Streambed Alteration Agreement pursuant to CERCLA Section 121(e) for all work conducted in CDFW jurisdictional

washes (CDFW 2013). The geographic extent of CDFW's jurisdiction under California law is broader than the jurisdictional extent of the USACE under CWA 404 and thus avoidance and mitigation measures applied to CDFW jurisdictional waters would as a geographic consequence also be applied to CWA 404 waters. While Arizona does not have a similar state program, PG&E will also implement the same AMMs in Arizona identified by CDFW for California to ensure appropriate protection to CWA 404 jurisdictional areas in the project limits, including those in Arizona. Thirty-four AMMs are to be implemented by PG&E for CDFW jurisdictional washes. Actions taken by PG&E, including in the design phase, to avoid and minimize impacts to jurisdictional wetlands and waters will be recorded in a table and maintained by PG&E for the Project.

Remedy Construction, Operation, Maintenance, and Decommissioning BMPs. During construction, operation, maintenance, and decommissioning, certain best management practices would be implemented to avoid and minimize temporary and permanent impacts for activities occurring within jurisdictional wetlands and non-wetland waters of the U.S. These techniques include flagging or fencing around jurisdictional resources, reducing soil erosion/runoff, sediment controls, spill controls, and other BMPs as described in Best Management Practices and Wetlands Avoidance Measures (see Attachment 1 on the following page) and the CDFW AMMs.

### 3. Compensatory Mitigation

Under the *2008 Compensatory Mitigation for Losses of Aquatic Resources, Final Rule*, compensatory mitigation requires actions that offset the unavoidable adverse impacts to wetlands, streams, and other aquatic resources authorized by Department of the Army permits. Compensatory mitigation is only considered when all appropriate and practicable steps have been taken to avoid and minimize adverse impacts to the aquatic ecosystem. Compensatory mitigation can be implemented by restoration, enhancement, establishment, or preservation. Restoration involves restoring a previously-existing wetland or aquatic site, enhancement involves improving or enhancing the functions of an existing aquatic site, establishment is the creation of a new aquatic site, and preservation involves an existing aquatic site. Compensatory mitigation can be provided by three methods: permittee-responsible compensatory mitigation, mitigation banks, and in-lieu fee mitigation. Further, compensatory mitigation should be commensurate with the amount and type of impact associated with the project.

PG&E will calculate temporary and permanent impacts to jurisdictional waters of the United States resulting from project activities prior to construction and periodically thereafter if additional impacts occur. Temporary impacts to waters of the United States will be restored on site, where possible. Otherwise, impacts will be treated as permanent impacts.

At the Topock Remediation Project, PG&E plans to implement mitigation bank compensatory mitigation for permanent loss of waters of the U.S. at the project site, where reasonably available. Mitigation banks involve off-site compensation under the direction of a third party who ensures that compensation is completed and that no-net loss of wetlands and non-wetland waters is successful. Mitigation bank credits are the preferred option for successfully providing compensatory mitigation under the Final Rule. Restoration is the preferred method of mitigation, and PG&E will attempt to fund a mitigation bank that provides restoration of wetlands at a 1:1 ratio of impact to wetlands, where possible. If a wetland restoration bank is unavailable then an enhancement or preservation bank, or other appropriate option, would be suitable. PG&E will also provide compensatory mitigation for impacts to non-wetland waters of the U.S. at a 1:1 ratio.



**ATTACHMENT 1 TO PROTOCOL FOR PG&E COMPLIANCE WITH EIR MMRP MITIGATION MEASURE BIO-1 AND ARAR #32  
AT THE TOPOCK COMPRESSOR STATION**

**Best Management Practices and Wetlands Avoidance Measures**

The potential impacts to jurisdictional waters associated with implementation of the Final Groundwater Remedy at the Topock Compressor Station may be permanent or temporary. Permanent impacts are those that are associated with the construction of the new remedy facilities themselves, which will remain in place during the operation phase until decommissioning and removal. These facilities include new wells, pipelines, and ancillary facilities (e.g., drainage features, remote monitoring equipment, and security fencing). Temporary impacts are those that are associated with construction activities that may require removal of vegetation or soil disturbance from construction activities (i.e., access roads) but will not result in permanent modifications to the bed, bank or channel of waterways.

The following wetland avoidance measures and Best Management Practices (BMPs) will be employed for the Topock Final Remedy Project:

1. A delineation of wetlands and waters of the United States has been prepared for the proposed project area, and submitted to DTSC (CH2M HILL 2014c). This delineation has informed the remedial design and was used to avoid or minimize impacts to sensitive resources. In addition to the mapping of federal jurisdictional wetlands and waters of the U.S., there was also a determination of the areas that are jurisdictional by CDFW under Section 1600. The CERCLA Section 121(e) exemption for the Topock Program obviates the need to secure permits from the U.S. Army Corps of Engineers or from CDFW, however, the substantive requirements of applicable state and federal laws are satisfied. A March 6, 2013 letter from CDFW confirming application of the CERCLA Section 121(e) exemption to the Topock Final Remedy Project and stating that PG&E need not obtain a Lake or Streambed Alteration Agreement, was accompanied by a list of Avoidance and Minimization Measures for the Project.
2. When planned work activities occur near or within jurisdictional wetland and waters, a biological monitor will provide a worker environmental awareness training to construction crews. The training will include information on sensitive biological resources that may occur in construction areas and the requirements to protect those resources. The training will also include information about BMPs to avoid potential indirect impacts to water quality at the project location or in downstream areas as described in the CDFW AMMs. PG&E's construction foreman will be responsible for verifying that all construction workers completed the training prior to beginning work at the project site.
3. Where boundaries of jurisdictional wetlands or waters are found in close proximity to planned construction activities, these features will be clearly demarcated in the field using flagging or brightly colored mesh fencing in order to ensure that they are not inadvertently impacted. The demarcation will be conducted under the supervision of a qualified biologist. The biologist will also survey any vegetation areas prior to clearing or cutting to ensure that there are no sensitive biological resources (such as active bird nests) that might be affected. The pre-construction survey will also include photographic documentation of pre-project conditions.
4. Access routes that pass through jurisdictional wetlands and waters, if needed, will be identified in order to minimize the impacts to perennial vegetation (e.g., trees and shrubs). Where impacts cannot be avoided to arrowweed stands within the historical floodplain, the stems of these plants will be cut to approximately 1 to 1 ½ feet above the ground surface. Then plastic sheeting or a tarp will be placed over the cut stems prior to crossing the area with construction vehicles. This approach will favor ready re-growth of the cut plants after the completion of construction activities. Any protected perennial trees or shrubs that are removed as a result of this project will be mitigated as part of the revegetation planning process.

5. Pre-construction surveys for listed species or actively nesting birds will be conducted immediately prior to the start of construction and after demarcation. Should any listed individuals or active nests be identified, the PG&E biologist will contact the United States Fish and Wildlife Service (USFWS) to determine an appropriate response. Only a biologist with an active Section 10(a) permit will be authorized to remove any individuals from the construction areas to a USFWS-approved release location.
6. The boundaries of the construction work zones and staging (supporting) areas including access routes will follow existing routes as much as possible. All construction work zones will be shown on detail site maps and demarcated in the field. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion will be allowed outside of the designated construction work zone and staging areas.
7. Equipment will not be operated in areas of ponded or flowing water, and no wet excavations will be performed during construction. Construction vehicles and equipment will be checked periodically to ensure that they are in proper working condition and that there are no apparent oil or fuel leaks. Onsite refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve the use of fuels, lubricants, or solvents, will occur only in locations that are away from jurisdictional wetlands and waters.
8. Compliance with the above AMMs within jurisdictional waters will be tracked and reported to DTSC in the quarterly EIR mitigation measures compliance reports.
9. At project completion, the designated biological monitor will return to the site to document the post-construction conditions at the site. Information on the pre-and post-construction conditions will be documented in the Remedial Action Construction Completion Report. Post-construction conditions will be documented with photographs.



TABLE L1.1-2  
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1	Section 2.1	<p>CUL-1a-8a: Protocols for Continuation of Tribal Communications</p> <p>This protocol requires that communication be consistent with past practices and communication processes previously entered into by PG&amp;E with Interested Tribes, and that PG&amp;E would continue to communicate with Interested Tribes during the design, construction, operation, and decommissioning of the project. Prior to implementation of construction. For examples of communication procedures consistent with past practices, see 2.1. Prior to implementation of construction, PG&amp;E shall communicate with Interested Tribes that place cultural significance on the Topock Cultural Area. Outreach efforts between the Tribes and PG&amp;E shall be communicated by PG&amp;E to DTSC quarterly during the design and construction phase for review and input, and annually during project operations.</p>	<p>PG&amp;E has communicated with the Interested Tribes and will continue to communicate with them during all phases of the Project from design and construction through operation and maintenance as well as decommissioning. Tribes are currently invited to attend monthly meetings to review pieces of the design as they are prepared and to receive updates on the progress of the project. PG&amp;E has also held field meetings with Tribes (e.g., meetings to site well locations, etc. May also see CUL-1a-8d, CUL-1a-8j, and CUL-1a-9) to assist in Tribal understanding of the remedy design. During construction, PG&amp;E will continue to communicate regularly and will also provide updates on field activities so that Tribal monitors may also participate.</p> <p>Outreach efforts are communicated to DTSC on a quarterly basis during design, and will continue to occur quarterly during construction. As required by DTSC, a log of communications with interested Tribes has been maintained and included in the quarterly EIR mitigation measure compliance reports since January 2012.</p>
2	Section 2.2	<p>CUL-1a-8b: Protocols for Appropriate Treatment of Archaeological Materials</p> <p>These protocols include the following components:</p> <ul style="list-style-type: none"><li>• Protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered during implementation of the final remedy<ul style="list-style-type: none"><li>– Avoidance is preferred (by PG&amp;E and Tribes) means of treatment in a discovery situation. If PG&amp;E recommends that avoidance is not feasible and the Agencies make a determination that it is not feasible, then the protocols of Discovery Plan of the CHPMP will be followed for appropriate treatment of discoveries.</li></ul></li><li>• Protocols for the repatriation of significant items of cultural patrimony that may be recovered during the project</li><li>• Protocols for the curation of cultural materials recovered during the project.</li><li>• Treatment of archaeological sites, if data recovery is proposed</li></ul>	<p>During design and construction, if discoveries are made, avoidance is the preferred method of treatment of discoveries. If, however, Agencies make a determination that avoidance is not feasible, PG&amp;E will provide treatment of archaeological materials as outlined in Appendix C (Discovery Plan) of the CHPMP.</p> <p>As described in the protocol, during design and construction, Native American human remains and/or archaeological materials from Federal or Tribal land that are funerary objects, or ceremonial objects, or objects of cultural patrimony will be treated as prescribed in the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations (43 Code of Federal Regulations [CFR] 10), and as discussed in Section 8.2 (Treatment of Any Human Remains, Funerary Objections, Ceremonial Objects and Items of Cultural Patrimony) and Appendix D (Plan of Action) of the CHPMP (BLM 2012).</p> <p>If data recovery is proposed for treatment of an archaeological site, PG&amp;E will follow the steps outlined in Section 2.2.3 of the CIMP.</p>
3	Section 2.3	<p>CUL-1a-8c: Protocols for the Review of Cultural Resource-Related Documents</p> <p>These protocols apply to the extent that the BLM has not consulted with Tribes under the consultation process in the Programmatic Agreement and referenced in the CHPMP, and include the following:</p> <ul style="list-style-type: none"><li>• Review of cultural resource related documents, including timelines and procedures are specified in detail at Section 2.3.2.</li><li>• PG&amp;E will afford the Tribes an opportunity to review and comment on Project cultural resource-related documents</li><li>• Standards as stipulated in the Programmatic Agreement Section XI will be implemented. (Section 2.3.4)</li></ul>	<p>To date, the review of cultural resource related documents has occurred under the procedures identified by the Programmatic Agreement and referenced in the CHPMP. Certain EIR-required cultural resource related documents have also been sent to DTSC for review.</p>
4	Section 2.4	<p>CUL-1a-8d: Protocols for the Review of Project Design Documents</p> <p>These protocols provide for the review of the Topock Compressor Station Groundwater Remediation Project (Project) Design Documents at the Preliminary, Intermediate, and Pre-final phases. In general, at the preliminary phase of each design, PG&amp;E will submit the design document to DTSC/DOI who will then submit to reviewers and invite their initial comments. See CIMP Figure 2-1 for a complete overview of the review process during design.</p>	<p>PG&amp;E has followed the protocols outlined in Figure 2-1 of the CIMP regarding the review of design documents at the 30% and 60% design phases. PG&amp;E will continue to follow the protocol for review of the 90% design.</p>
5	Section 2.5	<p>CUL-1a-8e: Protocols for Restoring the Environment to Its Preconstruction Conditions Upon Decommissioning</p> <p>The protocol presents the general approach for restoration of the areas affected by the groundwater remediation facilities. Restoration activities include grading, contouring, and revegetating the site. The restoration approach will be informed by documentation of the pre-construction condition (e.g., ground photographic records, topographic/aerial maps, disturbed area map, archaeological surveys, historical resource surveys, biological surveys). PG&amp;E will seek ways to restore the affected areas to the conditions prior to construction, as closely as possible. Discussions will take place with the Tribes to develop an understanding of the different restoration techniques and expectations for different environments.</p> <p>For additional details, see Sections 2.5.3 (Restoration Guidelines) and 2.5.4 (Habitat Restoration and Revegetation).</p>	<p>A Plan for Decommissioning of Remedy Facilities and Restoration will be completed within 120 days of DOI’s certification of completion of the remediation and a determination by DOI that removal of such facilities is protective of human health and the environment. This Restoration Plan will be developed in consultation with the land owners and managers, including FMIT, U.S. Bureau of Reclamation (USBR), and BLM. The BLM will consult with Signatories, Tribes, and Invited Signatories to the PA on the Restoration Plan. PG&amp;E will implement the Plan to restore the site to conditions existing prior to the construction of the groundwater remediation facilities to the maximum extent practicable.</p>
6	Section 2.6	<p>CUL-1a-8f: IM-3 Decommissioning Plan</p>	<p>The IM-3 Decommissioning, Removal, and Restoration Work Plan is included as Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan.</p>

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7	Section 2.7	<p>CUL-1a-8g: Protocols for Repatriation of Clean Soils During Construction</p> <p>Specifically, the management protocol for Handling and Disposition of Displaced Site Material requires work plans that involve activities that displace site material (and that are finalized subsequent to the development of the protocol) to include the following information:</p> <ul style="list-style-type: none"><li>• The process for soliciting and considering the inputs of Tribe(s) regarding the management of the material that is displaced as a result of the work.</li><li>• Details on material handling and short-term/long-term storage (including an inventory of materials displaced by the work).</li><li>• Process for assessing contamination assessment.</li><li>• Final disposition alternatives for displaced material.</li></ul>	<p>The Soil Management Plan (SMP) (Volume 4 of the O&amp;M Manual) contains procedures and protocols for the management and disposal of displaced soil including potentially contaminated soil, during drilling, construction, operation, and maintenance of the remedy as well as decommissioning of IM-3 facilities. The procedures and protocols included soil and waste characterization, screening and classification of soils, handling and short-term storage of soils, long-term storage of soils, transportation and disposal of hazardous wastes, and record keeping.</p> <p>Additional procedures and protocols for handling, management, and disposal of other waste streams that could be generated from remedy construction and start-up are included in the Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan.</p>
8	Section 2.8	<p>CUL-1a-8h: Noise Protocols</p> <p><u>Pre-Construction (Section 2.8.3)</u></p> <p>a) Establish a disturbance coordinator, who will coordinate both noise and vibration concerns that may arise during construction.</p> <p>b) Identify and coordinate activities where Noise-2 requires noise monitoring. Noise-2 states that noise monitoring will be conducted when construction activities are conducted within 1,850 feet and 5,830 feet from California receptors and 330 feet and 735 feet from Arizona receptors for daytime and nighttime noise, respectively.</p> <p>c) If noise monitoring during construction is required, noise monitoring locations will be selected in coordination with the Tribes. The EIR MMRP requires that noise measurements be conducted at the nearest noise-sensitive land use relative to the construction activities.</p> <p>d) Examples of noise barriers that could be used during construction to mitigate noise concerns (e.g., berms, stockpiles, dumpsters, bins, and engineered acoustical barriers), and approaches for implementation, will be included in the Construction/Remedial Action Work Plan for review and comment by Tribes and agencies. In the unlikely event that engineered acoustical barriers are required during construction, they will comply with requirements of the EIR.</p> <p><u>Construction (Section 2.8.3)</u></p> <p>e) If noise monitoring finds that the relevant noise thresholds are exceeded, temporary noise barriers will be erected.</p> <p>f) Maintain all construction equipment according to manufacturer guidelines. Equipment will be fitted with the best available noise suppression devices. All impact tools will be shrouded or shielded, and all intake or exhaust ports on power equipment will be muffled or shielded.</p> <p>g) Construction equipment will not be allowed to idle for extended periods of time (more than 15 minutes) when not being used for construction.</p> <p>h) Should a concern about the actual noise generated by remedy construction arise, PG&amp;E disturbance coordinator will thoroughly investigate and resolve the issue appropriately. A qualified acoustical consultant (INCE Board Certified or Professional Engineer in Acoustics) will evaluate all reoccurring disturbances for compliance with applicable standards. Noise measurements will be in accordance with the Topock Sound Measurement Protocol in the Basis of Design Report and the forthcoming Remedial Action Work Plan. All noise complaints and its resolutions will be recorded, tracked, and reported to DTSC in the quarterly compliance reports.</p> <p><u>Operation and Maintenance (Section 2.8.3)</u></p> <p>i) Should a concern about the actual noise generated by remedy operation arise, PG&amp;E disturbance coordinator will thoroughly investigate and resolve the issue appropriately. A qualified acoustical consultant will evaluate all reoccurring disturbances for compliance with applicable standards. Noise measurements will be in accordance with the Topock Project Sound Measurement Protocol. All noise complaints and their resolutions will be recorded, tracked, and reported to DTSC in the quarterly compliance reports.</p> <p>j) If a new well needs to be installed or an existing well has to rebuilt during the operation phase, these activities are considered short-term construction activities and all noise protocols for pre-construction and construction phases will apply.</p> <p><u>Decommissioning (Section 2.8.3)</u></p> <p>k) Decommissioning are considered short-term construction activities. All noise protocols for pre-construction and construction phases will also apply to the decommissioning phase.</p> <p><u>Communication (Section 2.8.4)</u> -All Project construction activities shall be communicated to nearby noise-sensitive receptors and Interested Tribes. Elements of this communication include:</p> <ul style="list-style-type: none"><li>• A detailed project schedule is established and published for all stakeholders.</li><li>• Monthly notification to agencies and Tribes of scheduled field activities. During periods of extensive construction activity, these notifications will be issued more frequently – weekly and/or daily, as appropriate.</li><li>• After issuing these notifications, notify the nearby noise-sensitive receptors and Tribes of any schedule changes.</li><li>• Provide an open-communication process for Tribal representatives to seek more information about Project noise-generating activities. PG&amp;E welcomes Tribal input on timing of Project noise-generating activities and on potential noise-reducing methods.</li><li>• The contact information for the disturbance coordinator will be posted in a conspicuous location near the construction areas. This information will also be mailed to all nearby noise-sensitive receptors and Interested Tribes.</li></ul> <p>In addition to the communication methods described above, PG&amp;E will also consider posting construction schedule information at the information kiosk (CUL-1a-3c). PG&amp;E may also decide to use other communication processes, including a Project website (a Project website could list Project activity schedules and other Project related information) that could be accessed by computer or smartphone and/or other simple push applications that apply to mobile devices.</p>	<p><u>Pre-Construction</u></p> <p>a) PG&amp;E disturbance coordinators, Curt Russell and Chris Smith, will coordinate both noise and vibration concerns that may arise during construction.</p> <p>b) Noise monitoring locations will be the boundary of noise receptors as defined by EIR MMRP NOISE-2 facing the project-related construction activities. The precise monitoring locations will be determined in the field by a qualified acoustical consultant in coordination with the Tribes.</p> <p>c) Section 4 of the Construction/Remedial Action Work Plan contains examples of noise barriers that could be used during construction to mitigate noise concerns.</p> <p>Protocols during construction, operation and maintenance, and decommissioning will be adhered to during implementation of each phase. Compliance actions will be documented and reported to DTSC in the quarterly compliance reports.</p> <p><u>Communication (Section 2.8.4)</u></p> <ul style="list-style-type: none"><li>• A detailed construction schedule is established and included in the Construction/Remedial Action Work Plan for review by agencies, stakeholders, and Tribes.</li><li>• Monthly notification to agencies and Tribes of scheduled field activities has been and will continue to be sent by PG&amp;E (Curt Russell or his designee). During periods of extensive construction activity, these notifications will be issued more frequently – weekly and/or daily, as appropriate. This element has been incorporated into the overall communication framework for construction and start-up (see Table 2.3-1 of the Construction/Remedial Action Work Plan).</li><li>• After issuing these notifications, PG&amp;E will notify the nearby noise-sensitive receptors and Tribes of any schedule changes. Nearby noise-sensitive receptors are residents of the mobile home park at Moabi Regional Park and the Topock Marina, as well as private residents in Topock Marina area. When construction activities occurred within 1850 feet of noise-sensitive receptors to the east, PG&amp;E will post contact information in a conspicuous location near construction areas so that it is clearly visible to nearby sensitive receptors. In addition, mailing of the same information will be sent to those receptors and all Tribes (see Table 2.3-1 of the Construction/Remedial Action Work Plan).</li><li>• Provide an open-communication process for Tribal representatives to seek more information about Project noise-generating activities. PG&amp;E welcomes Tribal input on timing of Project noise-generating activities and on potential noise-reducing methods. Per CUL-1a-8k, if ceremonies are requested by any Tribe during construction, then PG&amp;E will follow the protocol to accommodate any requests for Tribal ceremonies, which could include monitoring to ensure that construction noise does not exceed the normally acceptable exterior noise level standard in San Bernardino County for places of worship.</li><li>• The contact information for the Project disturbance coordinators (Curt Russell and Chris Smith) will be posted in a conspicuous location near the construction areas. This information will also be mailed to all nearby noise-sensitive receptors and Interested Tribes. Nearby noise-sensitive receptors include residents at Moabi Regional Park and the Topock Marina area.</li></ul>

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9	Section 2.9	<p>CUL-1a-8i: Protocols for the Appropriate Methods, consistent with Mitigation Measures, AES-1 and AES-2, to Reduce Visual Intrusion</p> <p><u>Additional Design Protocols that PG&amp;E May Employ to Reduce Visual Intrusions (Section 2.9.2)</u></p> <p>In addition to the specific requirements identified in AES-1 and AES-2, PG&amp;E may employ various feasible design concepts identified by PG&amp;E, Tribes, or other interested parties prior to implementation of a Project activity to reduce visual intrusions of the Project design. Potential design concepts include:</p> <ul style="list-style-type: none"><li>• Construction of aboveground facilities within existing facilities, when appropriate.</li><li>• Building designs that are harmonious with existing buildings and nearby landforms, including low profiles when available.</li><li>• Flush-mount or below-ground installations whenever feasible.</li><li>• Construction within existing transportation corridors.</li><li>• Working only within previously-disturbed sites, whenever possible.</li><li>• Placing aboveground facilities away from traffic, where feasible (i.e., areas where the introduction of the facilities would not create safety issues or visual impacts), to reduce the need for traffic barricades.</li><li>• Design the lighting associated with above ground facilities to minimize glare and to focus lighting within a facility (e.g., using shields on lighting to reflect light downward and focused within a facility).</li></ul> <p><u>Opportunity for Agency, Tribal, and Other Stakeholder Input on the Visual Nature of Project Design (Section 2.9.3)</u></p> <p>Within the design packages, PG&amp;E will include visualizations of various design features described within the text and drawings in the package. Although the visualizations will not be comprehensive of the entire project, they will include many of the aboveground facilities that may be visible to stakeholders after construction.</p> <p><u>Potential Temporary Visual Intrusions Identified During Remedy Implementation (Section 2.9.4)</u></p> <p>During the course of remedy implementation, if agencies, Tribes, or other stakeholders identify temporary visual intrusions that should be addressed by PG&amp;E, they should notify the Project Disturbance Coordinator(s), who will be responsible for resolving the issue or coordinating resolution of the issue with the Tribes, DTSC, other agencies, and/or stakeholders.</p>	<p>See response to EIR mitigation measures AES-1 and AES-2 in Table 6.1-1 for compliance actions.</p> <p><u>Examples of where the additional protocols were employed during the design to reduce visual intrusions:</u></p> <p>Building designs that are harmonious with existing buildings and nearby landforms, including low profiles when available. For example, the remedy building inside the compressor station and the TW Bench are designed to be compatible with existing buildings and/or the environment.</p> <p>Flush-mount or below-ground installations whenever feasible. For example, most well head completion is flush-mount and most piping installations are below ground.</p> <p>Construction within existing transportation corridors. For example, the majority of piping corridors are within existing roads.</p> <p>Working only within previously-disturbed sites, whenever possible. For example, all proposed construction staging areas and yard are located in previously-disturbed areas.</p> <p>Design the lighting associated with above ground facilities to minimize glare and to focus lighting within a facility (e.g., using shields on lighting to reflect light downward and focused within a facility). This design concept is followed in all building design for the project.</p> <p><u>Opportunity for Agency, Tribal, and Other Stakeholder Input on the Visual Nature of Project Design (Section 2.9.3)</u></p> <p>As was done at the 60% design stage, visualizations of various design components are provided in the 90% BOD Report to facilitate review. In addition, photos of typical construction equipment are provided in the Construction/Remedial Action Work Plan to facilitate review of the document.</p> <p><u>Potential Temporary Visual Intrusions Identified During Remedy Implementation (Section 2.9.4)</u></p> <p>During the course of remedy implementation, if agencies, Tribes, or other stakeholders identify temporary visual intrusions that should be addressed by PG&amp;E, they should notify Curt Russell and Chris Smith, the Project Disturbance Coordinator(s), who will be responsible for resolving the issue or coordinating resolution of the issue with the Tribes, DTSC, other agencies, and/or stakeholders.</p>
10	Section 2.10	<p>CUL-1a-8j: Protocols for Tribal Notification in advance of Project-Related Activities</p> <p>Protocols for Tribal notification in advance of project-related activities that the Interested Tribes may feel have the potential to cause adverse impacts to sensitive cultural resources - PG&amp;E will take care in these advance notifications to identify the field activities that have the potential to be ground disturbing. Examples of field activities which may include potentially ground-disturbing aspects include grading, trenching, boring, drilling, or other excavation for new injection, extraction or monitoring wells. In addition, construction of new pipelines, new treatment facilities, new access roads, new staging areas, other new transportation facilities, or other new Project components may include ground-disturbing aspects. PG&amp;E will use communication methods specified in Section 2.10, and will provide two weeks advance notice of covered activities when possible.</p>	<p>PG&amp;E has provided advance notice of ground-disturbing activities to Tribes during pre-construction phases such as the Freshwater Implementation Plan and Utility Potholing. PG&amp;E also sends monthly emails to Tribes and Agencies that outline the field activities occurring at the Topock Compressor Station for the month.</p> <p>PG&amp;E provides a two week advance notice where possible. PG&amp;E will continue to provide advance notice to Tribes during any other ground-disturbing activities that may occur pre-construction. PG&amp;E will also continue to follow this protocol during construction of the remedy and during operation, maintenance, and decommissioning.</p>
11	Section 2.11	<p>CUL-1a-8k: Protocols to Accommodate Tribal Ceremonies or Activities Involving the Topock Cultural Area</p> <p>Protocols to be followed by project personnel to accommodate, if feasible as determined by DTSC, key Tribal ceremonies that involve the Topock Cultural Area. Under the protocol, any Tribe(s) wishing to perform such a ceremony may contact PG&amp;E’s Site Manager at the Topock Compressor Station by telephone, email, or in writing to discuss the specific request. PG&amp;E will communicate directly with the requester (by telephone or in person) as soon as the request has been evaluated. PG&amp;E will indicate if all of the requests can be accommodated and, if not, suggest alternatives that PG&amp;E can accommodate. The requestor and PG&amp;E will also discuss the details of other services that PG&amp;E may agree to provide for the benefit of the ceremonial activity, including, power, water, parking, signage, or other support. PG&amp;E will also identify any reasonable and necessary stipulations regarding health and safety, logistical, communication, or site access procedures to be followed in the Topock Compressor Station Groundwater Remediation Project (Project) Area. One stipulation will clearly state that the Topock Compressor Station is excluded, and that access to it cannot be provided.</p>	<p>No requests to conduct Tribal ceremonies have been submitted. If ceremonies are requested during design, construction, operation and maintenance, then PG&amp;E will follow the protocol to accommodate any requests for Tribal ceremonies.</p>

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			Pre-Final (90%) Design
12	Section 2.12	<p>CUL-1a-8l: Protocols for Tribal Monitors to Observe Ground Disturbance Activities</p> <p>Provisions affording sufficient Tribal monitors to observe ground disturbing activities and/or other scientific surveying (e.g., biological surveys) that may occur in preparation for construction activities. Ground-disturbing activities include trenching, excavation, grading, well excavation/drilling, decommissioning the IM-3 Facility and subsurface pipeline, or other construction-related activities.</p> <p>Pacific Gas and Electric Company (PG&amp;E) will notify the Interested Tribes (Tribes) as defined by the Environmental Impact Report (EIR) of planned ground-disturbing activities and other scientific surveying that is conducted in anticipation of construction activities. This provides the opportunity for Tribes to send Tribal monitors to the site to observe these activities, if they wish. While on site, Tribal monitors will have the opportunity to discuss their concerns directly with the PG&amp;E project team while the activities are proceeding, as well as reporting their observations and any issues of concern directly to the Tribe(s) that they represent. Sufficient time (a minimum of 1 week notice) will be allowed between the notification and the beginning of the field activity that the Tribe(s) will be able to prepare adequately without undue haste and arrange for one or more monitors.</p>	PG&E has provided notification to Tribes in advance of ground-disturbing activities during the design phase, including during the Alternative Freshwater Evaluation and Utility potholing activities. PG&E will continue to notify Tribes in accordance with the protocol throughout the remainder of the design, construction, operation and maintenance, and decommissioning.
13	Section 2.13	<p>CUL-1a-8m: Provision of Reasonable Compensation for Tribal Monitors</p> <p>Provisions of reasonable compensation for Tribal monitors consistent with historic rates. PG&amp;E will provide reasonable compensation for Tribal monitors who work on the Project. PG&amp;E will negotiate with Tribes, taking into account the requirements of any pertinent MOUs or other legal agreements, to establish pay rates for monitors consistent with historic rates. The negotiated compensation rates will then be formalized in a separate MOU, or in amendments to an existing MOU, with each Tribe that will be supplying the services of one or more monitors.</p>	PG&E has been operating under MOUs and has provided compensation for Tribal monitors currently and will continue to provide compensation during construction, operation and maintenance, and decommissioning phases.
14	Section 2.14	<p>CUL-1a-8n: Protocols for Protective Measures for Archaeological/Historical Sites During Construction</p> <p>Locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction.</p> <p>2.14.1 Pre-Construction Measures to Identify Sites Requiring Protection. Pre-construction planning efforts will: (1) identify the location and boundaries of any archaeological, historical, and other cultural sites requiring protective measures during construction; and (2) establish zones within which construction may proceed. PG&amp;E and BLM will consult with the Tribes during this process.</p> <p>2.14.2 Identification of Protective Measures Prior to Construction. Avoidance will be implemented. Avoidance of known cultural sites/sensitive areas may be accomplished by using existing or approved routes of travel, and by carefully avoiding archaeological and historical sites when selecting laydown, access, and temporary work areas appurtenant to construction activities.</p> <p>2.14.3 Measures to Identify New Sites Requiring Protection during Construction. PG&amp;E’s qualified archaeologist would inspect and evaluate any previously unidentified or suspected archaeological or historical resources found during construction, operation, or decommissioning. If resources are discovered, earth-disturbing activities will be temporarily suspended at the location of the find. The find will then be treated by modifying the extent of the construction zone to avoid and protect the resource(s). Thereafter, earth-moving activities may resume within the modified construction zone. Tribal notification will occur under requirements of the CHPMP and PA.</p> <p>2.14.4 Implementation of Protective Measures. If warranted, protective measures may be employed on or around the archaeological or historical site to protect the resource from disturbance. These measures may include, but are not limited to, protective coverings of soil or riprap, onsite personnel to prevent access to sensitive areas, use of flagging, blaze orange mesh fencing secured to steel posts, bollards, natural barriers of rocks or piled brush, cables suspended between secure posts, and/or signage (e.g., “This Area Closed” or “Exclusion Zone: Keep Out”). Any such measures will be temporary (only as needed during construction), and will, to the extent practicable, not call undue attention to the nature of the resource being protected.</p> <p>Ongoing work within the established construction zone may continue. PG&amp;E, in consultation with DTSC and BLM (if Federal and/or Tribal land is involved) and the Tribes, will determine the appropriate protective measures on a case-by- case basis, and may increase or reduce the size of the Environmentally Sensitive Area (ESA) or Exclusion Zone (EZ) if agreed to by representatives of these parties in the field.</p> <p>The protective measures set forth in this section will be thoroughly covered in the Worker Education Program.</p> <p>2.14.5 Installation and Inspection of Protective Measures during Construction. PG&amp;E’s qualified archaeologists will monitor the installation of all protective measures and their removal after construction. Similarly, Tribal Monitors will be notified and invited to monitor the installation of all protective measures and their removal. PG&amp;E construction inspectors will conduct and document systematic inspections of the integrity of protective measures during the entire period of construction activity.</p> <p>2.14.6 Protection of New Sites Discovered during Construction. PG&amp;E’s qualified archaeologist will inspect and evaluate any new sites that may be discovered during construction and will notify Tribal Monitors of the discovery. Tribal Monitors will then inspect and evaluate the new site(s). Every effort will be made to avoid adverse effects on the discovered site(s) to the maximum extent practicable. Details on the initial inspection procedures are provided in Section 2.14.6.</p> <p>2.14.7 Restoration After Removal of Protective Measures. After removal of protective measures (e.g., fencing, poles), the areas will be restored to pre-construction conditions. For details on documentation of pre-construction condition and post-construction condition, see Section 2.14.7.</p>	<p>PG&amp;E will implement the protocols for protective measures for archaeological/historical sites during the construction of the remedy. As stated in the protocol, avoidance is the preferred protective measure and will be implemented where any identified archaeological, historical, or other cultural sites require protective measures during construction.</p> <p>If protective measures are used, the measures identified in Section 2.14.4 would be implemented. PG&amp;E’s archaeologist would monitor the installation and removal of all protective measures, and Tribal monitors would also be invited to monitor installation and removal. After removal, restoration would occur to pre-construction conditions.</p>

TABLE L1.1-2  
**Summary of Compliance with Cultural Impact Mitigation Program (CIMP) Protocols**  
*Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Item No.	Reference Location in CIMP Document	Protocols/Relevant Excerpts from Document	Action (Compliance Status)
			Pre-Final (90%) Design
15	Section 2.15	<p>CUL-1a-8o: Protocols for Reporting Discoveries of Cultural Importance</p> <p>Protocols for the reporting of discoveries of cultural importance consistent with existing statutes and regulations. In the event that any previously unidentified or suspected historic or archeological resource, such as human remains and/or associated funerary objects or graves, is discovered during construction, PG&amp;E will immediately notify the DTSC, BLM, and Tribal representatives if the resource is Native American, consistent with the CHPMP and the EIR Chapter 5.1.1. Human remains, items of cultural patrimony, or funerary objects that may be found shall be handled with utmost cultural and religious sensitivity. As specified in Section 2.2.1, avoidance of cultural resources is preferred over excavation, removal, or further disturbance, particularly in discoveries involving human remains, items of cultural patrimony, or funerary objects. Where human remains and funerary objects, ceremonial items, and items of cultural patrimony are discovered, PG&amp;E will implement the reporting protocols provided in Appendix D (Plan of Action [POA]) of the CHPMP and consistent with Mitigation Measure CUL-4 in EIR Chapter 5.1.1.</p> <p>During initial inspection, PG&amp;E’s qualified Cultural Resources Consultant (as specified in CUL-1a-3(a)) will document the discovery. Tribal monitors will be invited to assist in the preparation of the documentation and identification of Tribal cultural values. Discoveries identified as having cultural importance will be documented in a culturally sensitive manner acceptable to the Interested Tribe(s). PG&amp;E will consult with the BLM, and BLM will consult with the Tribal representatives if the resource is Native American in nature, to define the nature and extent of any further studies that may be required.</p>	PG&E will follow the protocol for reporting discoveries, in addition to complying with the CHPMP and PA.
16	Section 2.16	<p>CUL-1a-8p: Protocols for Inspecting Remediation Facilities and/or Staging Areas During Construction</p> <p>Protocols for the inspection of remediation facilities and/or staging areas throughout the construction phase. The locations of remediation facilities and staging areas will be examined for cultural resources throughout the construction phase. This process will include advance notification of interested parties, including Interested Tribes, implementation of procedures for the review of Project design documents, selecting previously impacted land wherever feasible for re-use as staging areas and/or for the siting of remediation facilities, and avoiding direct physical impacts to the Topock Maze as it is manifested archaeologically.</p> <p>PG&amp;E’s qualified archaeologist, in coordination with the Tribes, will perform background research and field verification to identify and evaluate any cultural, historical, or archaeological resources within the location of remediation facilities and/or staging areas. Any resources present will be avoided to the extent feasible during construction and use of staging areas and/or remediation facilities pursuant to CUL-1b/c and CUL-2. Further, construction monitoring and treatment of any unanticipated discoveries will be as specified in CUL-1b/c-4 and CUL- 1a-8o. Accordingly, archaeological and Native American monitors will be invited to observe all earth-disturbing activities at remediation facilities and/or staging areas during construction. These monitors will at all times comply with Project-wide and job site-specific safety requirements.</p>	PG&E has included Tribes in review of Project design documents at the 30% and 60% phases, and PG&E has selected previously disturbed land for staging areas and siting of remediation facilities wherever feasible. PG&E’s remedial design avoids direct impact to the Topock Maze as it is manifested archaeologically. During construction, PG&E will implement the procedures of the protocol to identify and evaluate any cultural, historical, or archaeological resources within the vicinity of staging areas and remediation facilities. Avoidance will then be implemented for any identified resources, and monitoring and treatment in the case of unanticipated discoveries. PG&E will invite Tribal monitors to observe all earth-disturbing activities.



TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
Chemical-Specific										
1	Federal Chemical-Specific	<u>Federal Safe Drinking Water Act</u> - 42 USC § 300f, et seq.; 40 CFR 141 -- Subpart F— Maximum Contaminant Level Goals (MCLGs)	ARAR Relevant and Appropriate	MCLGs are not federally enforceable drinking water standards, but CERCLA § 121(d) identifies MCLGs as relevant and appropriate requirements.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal maximum contaminant level goal (MCLG) for Cr(T) of 100 µg/L.  There is no federal MCLG for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L Cr(VI) at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation, institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal MCLG for Cr(T) of 100 µg/L.  There is no federal MCLG for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L Cr(VI) at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation, institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal MCLG for Cr(T) of 100 µg/L.  There is no federal MCLG for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L Cr(VI) at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation, institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
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Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
2	Federal Chemical-Specific	<u>Federal Safe Drinking Water Act</u> - 42 USC § 300g-1; 40 CFR 141 -- Subpart G – National Primary Drinking Water Regulations (MCLs)	ARAR Relevant and Appropriate	These MCLs are relevant and appropriate standards, which establish the maximum permissible level of contaminants (e.g., chromium) in sources (or potential sources) of drinking water. MCLs may be applicable where water at a CERCLA site is delivered through a public water supply system.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer below the federal maximum contaminant level (MCL) for Cr(T) of 100 µg/L.  There is no federal MCL for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ by-products (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation, institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional controls.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer below the federal MCL for Cr(T) of 100 µg/L.  There is no federal MCL for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Concentrations of Cr(VI) and in-situ by-products (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona, and will be removed to below MCL prior to injection. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation.  Institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional controls.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer below the federal MCL for Cr(T) of 100 µg/L.  There is no federal MCL for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Concentrations of Cr(VI) and in-situ by-products (e.g., arsenic, manganese) may fluctuate within the treatment area during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation and freshwater injection are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation and the cessation of freshwater injection, respectively.  Institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional controls.
3	Federal Chemical-Specific	<u>Federal Water Pollution Control Act (Clean Water Act)</u> - 33 USC §§ 1251-1387; 40 CFR 131.38	ARAR Applicable	These are federally promulgated Water Quality Standards for surface waters. Such water quality standards include specific criteria for water bodies in California, including standards for hexavalent chromium.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	Surface water sampling in the Colorado River near the site show concentrations less than the federal water quality criteria (California Toxics Rule) for Cr(VI) of 11 µg/L. Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will increase the level of certainty that surface water quality will continue to remain below this level. The remedy is designed to prevent migration of contaminants to the Colorado River that would result in an exceedance of California Toxics Rule criteria.	Surface water sampling in the Colorado River near the site show concentrations less than the federal water quality criteria (California Toxics Rule) for Cr(VI) of 11 µg/L. Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will prevent any and all discharges to the Colorado River from the groundwater contamination. The remedy is designed to prevent migration of contaminants to the Colorado River that would result in an exceedance of applicable water quality standards.	Surface water sampling in the Colorado River near the site show concentrations less than the federal water quality criteria (California Toxics Rule) for Cr(VI) of 11 µg/L. Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will prevent any and all discharges to the Colorado River from the groundwater contamination. The remedy is designed to prevent migration of contaminants to the Colorado River that would result in an exceedance of applicable water quality standards, including federal, California, and Arizona standards.



TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
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PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
52	California Chemical-Specific	<u>California Safe Drinking Water Act</u> - Title 22, CCR, Div 4, Ch 15, §64431, §64444	ARAR Applicable	Maximum Contaminant Levels (MCLs) which shall not be exceeded in the water supplied to the public. California state MCLs for drinking water standards are more stringent than primary federal standards.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the state MCL for Cr(T) of 50 µg/L.  There is no state MCL for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation, institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the state MCL for Cr(T) of 50 µg/L.  There is no state MCL for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona, and will be removed to below MCL prior to injection. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation.  Institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.	Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the state MCL for Cr(T) of 50 µg/L.  The State MCL for Cr(VI) is 10 µg/L. The RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation and freshwater injection are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation and the cessation of freshwater injection, respectively.  Institutional controls will prevent use of affected groundwater as a drinking water source until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.

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53	California Chemical-Specific	<u>Secondary MCLs list for drinking water</u> - Title 22, CCR, Div 4, Ch 15, §64449	ARAR Relevant and Appropriate	State secondary MCLs for drinking water standards are more stringent than federal standards. These secondary MCLs are relevant and appropriate standards, which establish the maximum permissible level of contaminants in sources (or potential sources) of drinking water. These secondary MCLs would be applicable if water at the site was used as drinking water and delivered through a community water supply system.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	There is no secondary MCL for Cr(VI) or Cr(T). Secondary MCLs are community acceptance standards for constituents that may adversely affect the taste, odor or appearance of drinking water. An institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source.	There is no secondary MCL for Cr(VI) or Cr(T). Secondary MCLs are community acceptance standards for constituents that may adversely affect the taste, odor or appearance of drinking water. Concentrations of in-situ by-products (arsenic, manganese [secondary MCL of 50 µg/L]) may fluctuate within the treatment area during remedy implementation. Institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source. Additionally, there are currently no municipal or private wells in the chromium plume area, to PG&E’s knowledge.	There is no secondary MCL for Cr(VI) or Cr(T). Secondary MCLs are community acceptance standards for constituents that may adversely affect the taste, odor or appearance of drinking water. Concentrations of in-situ by-products (arsenic, manganese [secondary MCL of 50 µg/L]) may fluctuate within the treatment area during remedy implementation. Institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source. Additionally, there are currently no municipal or private wells in the chromium plume area, to PG&E’s knowledge.
55	California Chemical-Specific	<u>Groundwater and vadose zone protection standards</u> - Title 22, CCR, Div 4.5, Ch 15, Article 6, §66265.94	ARAR Applicable	RCRA hazardous waste Interim Status TSD facilities shall comply and ensure that hazardous constituents entering the groundwater, surface water, and soil from a regulated unit do not exceed the concentration limit from contaminants of concern in the uppermost aquifer underlying the waste management area beyond the point of compliance.	Remedy Implementation	PG&E	Quarterly progress reports during remedy O&M  Other data/reports requested by agencies	Compliance with this requirement will be achieved by reducing the concentration of Cr(VI) in the affected aquifer to the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation, institutional controls will prevent use of affected groundwater until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation.	Compliance with this requirement will be achieved by reducing the concentration of Cr(VI) in the affected aquifer to the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation, institutional controls will prevent use of affected groundwater until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation.	Compliance with this requirement will be achieved by reducing the concentration of Cr(VI) in the affected aquifer to the regional background concentration of 32 µg/L at the conclusion of remedy implementation. Although concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate during remedy implementation, institutional controls will prevent use of affected groundwater until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation.
Action-Specific										
31	Federal Action-Specific	<u>Federal Safe Drinking Water Act</u> - 42 USC §300f, et seq. Part C – Protection of Underground Sources of Drinking Water; 40 CFR 144-148	ARAR Applicable	These Underground Injection Control Regulations assure that any underground injection performed on-site will not endanger drinking water sources. Substantive requirements include, but are not limited to, regulation of well construction and well operation. These requirements will be applicable if underground injection is proposed as a part of a site remedy.	Underground injection activities	PG&E	Filing of inventory of injection wells	Injection wells are classified as Class V injection wells and will be registered with USEPA prior to installation. The injection wells will be monitored to ensure they will not endanger drinking water sources. An institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source. All injection wells will be properly closed upon completion of the remedy.	Injection wells are classified as Class V injection wells and will be registered with USEPA prior to installation. The injection wells will be monitored to ensure they will not endanger drinking water sources. An institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source. All injection wells will be properly closed upon completion of the remedy.	Injection wells are classified as Class V injection wells and will be registered with USEPA prior to installation.  An institutional control will be enforced throughout the chromium plume area during implementation of the remedial action to prohibit use of the groundwater as a drinking water source. All injection wells will be properly closed upon completion of the remedy.

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
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32	Federal Action-Specific	<u>Federal Water Pollution Control Act (Clean Water Act)</u> - 33 USC § 1344 ; 40 CFR 230.10	ARAR Applicable	This section of the Clean Water Act prohibits certain activities with respect to on-site wetlands and waterways. No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed activity which would have less adverse impact to the aquatic ecosystem.	Activities that occur in the Colorado River or in jurisdictional waters of the United States that result in discharge of dredged or fill material.	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	The preliminary (30%) design includes facilities in the jurisdictional water of the U.S. (see Figure 2-16 of the 30% BOD Report). PG&E will work with the USACE to ensure compliance with the substantive requirements of Section 404 per CERCLA Section 121(e)(1). It is anticipated that a wetland delineation will be conducted in the Spring of 2012.	The intermediate (60%) design includes facilities in the jurisdictional waters of the U.S. (see Figure 2.4-5 in the 60% BOD Report document). PG&E will work with the USACE to ensure compliance with the substantive requirements of Section 404 per CERCLA Section 121(e)(1). A wetlands delineation was completed in March 2012 and is to be revised in April 2013; results will be summarized in a forthcoming report for DTSC review.	<p>A report titled “<i>Wetlands and Waters of the United States Final Delineation Report for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California</i>” (CH2M HILL 2014c) was prepared to summarize results of efforts to delineate jurisdictional areas in the project area, and was submitted to DTSC and DOI on April 18, 2014. The report is also included in Appendix A3 of the 90% BOD Report.</p> <p>On July 10, 2013, the USACE confirmed that CERCLA 121(e)(1) permit exemption applies to the Topock remediation project, and therefore, PG&amp;E is not required to comply with the administrative and procedural elements of Section 404 of the Clean Water Act, however PG&amp;E is obligated to comply with the substantive elements of Section 404 of the Clean Water Act.</p> <p>The locations of jurisdictional wetlands and waters have been incorporated into the design. At the 90% design stage, the final remedy avoids almost all permanent impacts within USACE jurisdictional areas with the following exceptions. There is one well, IRL-4 and one or two associated arsenic monitoring wells that will occur within a jurisdictional waters of the US. There is also a freshwater pipeline that will be installed within an existing unpaved access road within the 100-year of the Colorado River.</p> <p>However, complete avoidance of other jurisdictional non-wetland waters is not feasible. It has been determined that in order to meet the goals of protection of human health and the environment, to meet the RAOs for the remedy, to monitor remedy performance, to gather data for demonstration of compliance, as well as in response to resolution of design comments with the Tribes, infrastructure (remediation, monitoring wells, and associated piping/conduits) must be installed in certain washes. There are no practicable alternatives to locating certain infrastructure within waters of the United States.</p> <p>Figure 2.4-5 in the 90% BOD Report shows the unavoidable overlaps between planned remedy infrastructure and the USACE jurisdictional waters. In such cases where complete avoidance</p>

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										<p>is not feasible, certain best management practices (BMPs) will be implemented to avoid and minimize temporary and permanent impacts for activities occurring within jurisdictional wetlands (if any) and non-wetland waters of the U.S.</p> <p>Although the USACE did not provide a list of measures that may be taken to reduce impacts to jurisdictional waters and wetlands, the California Department of Fish and Wildlife (CDFW) requires compliance with avoidance and mitigation measures (AMMs) for all work conducted in CDFW jurisdictional washes. The geographic extent of CDFW's jurisdiction is broader than the jurisdictional extent of the USACE under CWA 404 and thus, avoidance and mitigation measures applied to CDFW jurisdictional waters would as a geographic consequence also be applied to CWA 404 waters. While Arizona does not have a similar state program, PG&amp;E will also implement the same AMMs in Arizona identified by CDFW for California as well to ensure appropriate protection to CWA 404 jurisdictional areas in the project area, including those in Arizona.</p> <p>In addition to the CDFW AMMs, PG&amp;E has identified additional BMPs for implementation during remedy construction, operation and maintenance, as well as decommissioning. The additional BMPs are described in the <i>Protocol for Compliance with EIR Mitigation and Monitoring Reporting Program BIO-1 and Applicable or Relevant and Appropriate Requirement (ARAR) #32 at the Topock Compressor Station</i> (see <b>Exhibit 6.1-1</b> at the end of Table 6.1-1).</p> <p>A Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o) was also prepared and submitted as an appendix of the Construction/Remedial Action Work Plan.</p>
33	Federal Action-Specific	Federal Water Pollution Control Act (Clean Water Act) - 33 USC § 1342; 40 CFR 122; 40 CFR 125	ARAR Applicable	These National Pollutant Discharge Elimination System (NPDES) requirements regulate discharges of pollutants from any point source into waters of the United States.	Point source discharges to waters of the US.	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action required. The remedy as presented in the preliminary (30%) design does not result in point source discharges to waters of the United States that will require an NPDES permit.	No further action required. The remedy as presented in the 60% design does not result in point source discharges to waters of the United States that will require an NPDES permit.	No further action required. The remedy as presented in the 90% design does not result in point source discharges to waters of the United States that will require an NPDES permit.

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34	Federal Action-Specific	<u>Federal Water Pollution Control Act (Clean Water Act)</u> -40 CFR 122.26	ARAR Applicable	These regulations define the necessary requirements with respect to the discharge of storm water under the NPDES program. These regulations will apply if proposed remedial actions result in storm water runoff which comes in contact with any construction activity from the site remediation.	Ground disturbance as a result of construction is > 1 acre	PG&E	SWPPP, BMP Plans and Monitoring & Reporting, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 and Site Restoration, Decommissioning Plan for Remedy Facilities and Restoration	PG&E will prepare a BMP Plan prior to construction activities that will be included in the Construction/Remedial Action Work Plan.	PG&E will prepare a BMP Plan to address construction activities which will be included in the Construction/Remedial Action Work Plan and the IM-3 Decommissioning Work Plan that will be submitted as part of the 90% design.  In addition, PG&E will prepare an industrial or O&M SWPPP that will include a storm water monitoring program in compliance with the General Permit. The outline for the O&M SWPPP is included in Appendix E of the O&M Plan (Volume 1) at the 60% design stage; the complete industrial SWPPP will be provided at the 90% design stage.	A BMP Plan for construction activities was prepared and is included as an appendix in the Construction/Remedial Action Work Plan and the IM-3 Decommissioning Work Plan.  In addition, an industrial SWPPP was also prepared and included in Appendix E of the O&M Plan (Volume 1). The SWPPP includes BMPs for O&M activities and a storm water monitoring program in compliance with the General Permit.
35	Federal Action-Specific	<u>River and Harbor Act of 1899</u> - 33 USC §§ 401 and 403	ARAR Applicable	This Act prohibits the creation of any obstruction in navigable waters, in addition to banning activities such as depositing refuse, excavating, filling, or in any manner altering the course, condition, or capacity of navigable waters. These requirements will apply if proposed activities at the Topock site have the potential of affecting any navigable waters on the site.	Activities with the potential to affect any navigable waters on the site	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action required. The remedy, as presented in the preliminary (30%) design, will not affect navigable waters.	No further action required. The remedy, as presented in the 60% design, will not affect navigable waters.	No further action required. The remedy, as presented in the 90% design, will not affect navigable waters.
38	Federal Action-Specific	<u>Clean Air Act</u> - USC §§ 7401, et seq. (National Emission Standards for Hazardous Air Pollutants (NESHAP)); 40 CFR 61; 40 CFR 63	ARAR Applicable	NESHAPs are regulations which establish emissions standards for certain hazardous air pollutants (HAPs) identified in the regulations. NESHAPs will apply if remediation activities on the site produce identified HAP emissions.	Activities produce identified HAP emissions	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action required. The remedy, as presented in the preliminary (30%) design does not include activities subject to NESHAPs.	No further action required. The remedy, as presented in the 60% design does not include activities subject to NESHAPs.	No further action required. The remedy, as presented in the 90% design does not include activities subject to NESHAPs.

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39	Federal Action-Specific	<u>Religious Freedom Restoration Act</u> - 42 USC § 2000bb	ARAR Applicable	Pursuant to this Act, the government shall not substantially burden a person’s exercise of religion, unless the application of the burden is in furtherance of a compelling government interest, and it is the least restrictive means of furthering that interest. To constitute a “substantial burden” on the exercise of religion, a government action must (1) force individuals to choose between following the tenets of their religion and receiving a governmental benefit or (2) coerce individuals to act contrary to their religious beliefs by the threat of civil or criminal sanctions. If any remedial action selected imposes a substantial burden on a person’s exercise of religion, it must be in furtherance of a compelling government interest and be the least restrictive means of achieving that interest.	Activities with the potential to impose a substantial burden on a person’s exercise of religion.	DOI/BLM	Design submittals, Construction/ Remedial Action Work Plan, O&M Plan, Progress Reports, Decommissioning Plan	<p>The remedy, as presented in the preliminary (30%) design does not substantially burden a person’s exercise of religion. Additionally, in compliance with the PA, a Tribal Access Plan is being developed for Tribal access to areas within the Topock site for traditional religious, cultural, or spiritual purposes during implementation of the Remedy. BLM is also developing a <i>Cultural and Historic Properties Management Plan</i> (CHPMP) to avoid, minimize and mitigate potential affects to historic properties, including the Topock TCP during implementation of the Remedy. BLM distributed a draft CHPMP on November 1, 2011. Comments on the draft CHPMP are due December 5, 2011. The BLM is anticipating that the final CHPMP will be issued by January 20, 2012</p> <p>The preliminary (30%) design was submitted on November 18, 2011. PG&amp;E will prepare future design submittals, a Construction/Remedial Action Work Plan, a Plan for decommissioning, removal, and restoration of IM-3 facility, and a Decommissioning Plan for Remedy Facilities and Restoration. The other documents will be prepared and submitted.</p>	<p>The remedy, as presented in the intermediate (60%) design, does not substantially burden a person’s exercise of religion. Additionally, in compliance with the PA, a Tribal Access Plan (BLM 2011) was completed for Tribal access to lands under federal management within the Topock site for traditional religious, cultural, or spiritual purposes during implementation of the Remedy. PG&amp;E has initiated work on an Access Plan for the lands not under federal management, taking into consideration the information in the BLM Access Plan, for submittal with the final design (target 2013). BLM also developed the CHPMP to avoid, minimize and mitigate potential affects to historic properties, including the Topock TCP, during implementation of the Remedy. BLM issued the final CHPMP on January 20, 2012. The CHPMP can be modified and updated, as needed, to address new information and ongoing activities related to the project. Therefore, subsequently to the issuance of the CHPMP, BLM continues to hold periodic working meetings on the CHPMP. It should be noted that treatment measures are included in the CHPMP and a treatment plan will continue to be developed throughout the design to address mitigation measures.</p> <p>The intermediate (60%) design was submitted on April 5, 2013. PG&amp;E will prepare and submit future design submittals; a Construction/Remedial Action Work Plan; a plan for decommissioning, removal, and restoration of the IM-3 facility; and a Decommissioning Plan for Remedy Facilities and Restoration.</p>	<p>The remedy, as presented in the 90% design, does not substantially burden a person’s exercise of religion. Additionally, in compliance with the PA, a Tribal Access Plan (BLM 2011) was completed for Tribal access to lands under federal management within the Topock site for traditional religious, cultural, or spiritual purposes during implementation of the Remedy. On October 21, 2013, PG&amp;E provided the Tribes a draft of the Access Plan for lands not under federal management for review and comment. Tribal comments were received on November 22, 2013. PG&amp;E has updated and discussed the plan at the July 24, 2014 TMU. The Access Plan is included in an appendix of the Construction/Remedial Action Work Plan. PG&amp;E has initiated work on an Access Plan for the lands not under federal management, taking into consideration the information in the BLM Access Plan, for submittal with the final design (target 2013).</p> <p>BLM also developed the CHPMP to avoid, minimize and mitigate potential affects to historic properties, including the Topock TCP, during implementation of the Remedy. BLM issued the final CHPMP on January 20, 2012. The CHPMP can be modified and updated, as needed, to address new information and ongoing activities related to the project. Therefore, subsequently to the issuance of the CHPMP, BLM continues to hold periodic working meetings on the CHPMP. It should be noted that treatment measures are included in the CHPMP and a treatment plan will be prepared and submitted to DTSC shortly after submission of the 90% design.</p> <p>The 90% design was submitted on September 8, 2014. A Construction/Remedial Action Work Plan and a plan for decommissioning, removal, and restoration of the IM-3 facility were submitted concurrently with the 90% design.</p> <p>In compliance with the CD (Appendix C Scope of Work, Item 9), a Decommissioning Plan for Remedy Facilities will be submitted within 120 days of receipt of DOI’s certification of completion of the RA and a determination by DOI that removal of such facilities is protective of human health and the environment.</p>

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40	Federal Action-Specific	<u>Endangered Species Act</u> of 1973 - 16 USC §§ 1531-1544;50 CFR 402	ARAR Applicable	The ESA makes it unlawful to remove or “take” threatened and endangered plants and animals and protects their habitats by prohibiting certain activities. Examples of such species in or around the Topock site may include, but are not limited to, southwestern willow flycatcher, Mojave Desert tortoise, Yuma clapper rail, Colorado pike minnow, razorback sucker, and bonytail chub. Any remedial action selected for the Topock site will not result in the take of, or adverse impacts to, threatened and endangered species or their habitats, as determined based on consultation with the Fish and Wildlife Service under section 7 of the ESA.	Extension of existing PBA through December 31, 2017 or construction of remedy, whichever is sooner	DOI/USFWS/ PG&E	PBA, Construction/ Remedial Action Work Plan, Plan for decommissioning, removal, and restoration of IM-3 facility, Plan for Decommissioning of Remedy Facilities and Restoration.	PG&E, USFWS, and DOI are coordinating on the Programmatic Biological Assessment (PBA) for the final groundwater remedy. Goal is to complete the PBA in time for the completion of ESA Section 7 consultation prior to the approval of the Construction/Remedial Action Work Plan.	Preparation of the PBA for the final groundwater remedy and coordination with USFWS and DOI are ongoing. Goal is to complete the PBA in time for the completion of ESA Section 7 consultation prior to the approval of the Construction/Remedial Action Work Plan.	The Final Groundwater Remedy PBA was prepared to support informal consultations for actions to be conducted under the remedial action, including activities located on BLM and U.S. Fish and Wildlife Service administered lands. Coordination with USFWS, BLM, and DOI on the PBA had occurred. This ESA Section 7 consultation was concluded with receipt of USFWS concurrency letter on July 7, 2014 which preceded the approval of the Construction/ Remedial Action Work Plan.
41	Federal Action-Specific	<u>Migratory Bird Treaty Act</u> - 16 USC 703-712	ARAR Applicable	This Act makes it unlawful to “take, capture, kill,” or otherwise impact a migratory bird or any nest or egg of a migratory bird. The Havasu National Wildlife Refuge, which is part of the Topock site, was created as a refuge and breeding ground for migratory birds and other wildlife, therefore, there is potential for contact with migratory birds during proposed remediation activities. Any remedial action selected for the Topock site will be designed and implemented so as to not take, capture, kill, or otherwise impact a migratory bird, nest, or egg.	Remedial action for Topock site	PG&E	Construction/ Remedial Action Work Plan, Plan for decommissioning, removal, and restoration of IM-3 facility, Plan for Decommissioning of Remedy Facilities and Restoration	Avoidance and minimization measures will be included in the Construction/Remedial Action Work Plan to the extent necessary to not take, capture, kill, or otherwise impact a migratory bird, nest, or egg.	Avoidance and minimization measures will be included in the Construction/Remedial Action Work Plan, which will be submitted as part of the 90% design, to the extent necessary to not take, capture, kill, or otherwise impact a migratory bird, nest, or egg.  Regarding decommissioning activities, the Avoidance and Minimization Plan and Habitat Restoration Plan will be based on surveys conducted prior to decommissioning, and during the breeding season; therefore these Plans will be prepared in the future, prior to decommissioning.  The IM-3 Decommissioning Work Plan will describe the general procedures for restoration of the land and habitats.	PG&E submitted the Final Bird Impact Avoidance and Minimization Plan (CH2M HILL, 2014d) on April 30, 2014. The plan is also included as an appendix of the Construction/Remedial Action Work Plan, and Appendix I of the IM-3 Decommissioning Work Plan.  Regarding decommissioning activities, the Avoidance and Minimization Plan and Habitat Restoration Plan will be based on surveys conducted prior to decommissioning, and during the breeding season; therefore these Plans will be prepared in the future, prior to decommissioning.

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45	Arizona Action-Specific	<u>Arizona Well Standards</u> - A.A.C. R-12-15-850	ARAR	These requirements on the placement of wells will apply if the selected remedy includes placement of wells in Arizona.	During project design and construction of wells in Arizona	PG&E		The preliminary (30%) design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. In addition, new monitoring wells may also be constructed in Arizona, the locations of the monitoring wells will be presented in the intermediate (60%) design. Wells constructed in Arizona will comply with the Arizona Well Standards	The 60% design assumes that freshwater supply comes from the existing well (HNWR-1) on the Refuge in Arizona, and does not include any new monitoring wells in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. If any new wells are constructed in Arizona they will comply with the Arizona Well Standards.	While the 90% design includes freshwater supply from existing wells in Arizona, these supply wells are part of the alternative freshwater source evaluation (also known as the Fresh Water Implementation Plan [FWIP]). Compliance with ARARs, including the Arizona Well Standards, for the supply wells are included in the FWIP. If additional wells in Arizona are required, they will comply with the Arizona Well Standards.
46	Arizona Action-Specific	Design criteria for treatment units - A.A.C. R18-5-(501-502)	ARAR	These minimum design criteria will apply if the selected remedy includes construction of a groundwater treatment plant.	Construction of wells in Arizona	PG&E		No further action is required. The preliminary (30%) design does not involve the construction of a groundwater treatment plant in Arizona.	No further action is required. The 60% design does not involve the construction of a groundwater treatment plant in Arizona.	No further action is required. The 90% design does not involve the construction of a groundwater treatment plant in Arizona.
47	Arizona Action-Specific	Requirements for wells, groundwater withdrawal, treatment, and reinjection -A.R.S. §45-454.01	ARAR	This statute exempts new well construction, withdrawal, treatment, and reinjection into a groundwater aquifer as a part of a CERCLA Remedial Action from the requirements of the Arizona Groundwater Code, except that they must comply with the substantive requirements of A.R.S. 45-594, 45-595, 45-596, and 45-600. If groundwater that is withdrawn is not reinjected into the aquifer, the groundwater shall be put to reasonable and beneficial use.	Construction of wells in Arizona	PG&E		This remediation project is a CERCLA remedial action. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S 45-594) by a State-licensed well driller( A.R.S. 45-595). A notice of intention to drill will be filed (A.R.S. 45-596), and a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600). Most of the groundwater that is withdrawn will be reinjected into the aquifer. Any groundwater that is withdrawn but not reinjected into the aquifer shall be put to reasonable and beneficial use.	This remediation project is a CERCLA remedial action. The 60% design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona, and does not include any new monitoring wells in Arizona. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S. 45-594) by a State-licensed well driller (A.R.S. 45-595). A notice of intention to drill will be filed (A.R.S. 45-596), and a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600). Most of the groundwater that is withdrawn will be reinjected into the aquifer. Any groundwater that is withdrawn but not reinjected into the aquifer shall be put to reasonable and beneficial use.	While the 90% design includes freshwater supply from existing wells in Arizona, these supply wells are part of the alternative freshwater source evaluation (also known as the Fresh Water Implementation Plan [FWIP]). Compliance with ARARs, including the Arizona Well Standards, for the supply wells are included in the FWIP. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S. 45-594) by a State-licensed well driller (A.R.S. 45-595). A notice of intention to drill will be filed (A.R.S. 45-596), and a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600). Most of the groundwater that is withdrawn will be reinjected into the aquifer. Any groundwater that is withdrawn but not reinjected into the aquifer shall be put to reasonable and beneficial use.



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48	Arizona Action-Specific	Well construction standards -A.R.S. §45-594 and 595	ARAR	These provisions identify the well construction standards and requirements for new well construction in the State of Arizona. These requirements will apply if the selected remedy involves the construction of wells in Arizona.	Construction of wells in Arizona	PG&E		The preliminary (30%) design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. In addition, new monitoring wells may also be constructed in Arizona, the locations of the monitoring wells will be presented in the intermediate (60%) design. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S 45-594) by a State-licensed well driller( A.R.S. 45-595).	The 60% design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona, and does not include any new monitoring wells in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S. 45-594) by a State-licensed well driller( A.R.S. 45-595).	While the 90% design includes freshwater supply from existing wells in Arizona, these supply wells are part of the alternative freshwater source evaluation (also known as the Fresh Water Implementation Plan [FWIP]). Compliance with ARARs, including the Arizona Well Standards, for the supply wells are included in the FWIP. If a new freshwater supply well or additional monitoring wells in Arizona are required they will be constructed in conformance with State construction standards (A.R.S. 45-594) by a State-licensed well driller (A.R.S. 45-595).
49	Arizona Action-Specific	Notice of intention to drill - A.R.S. §45-596	ARAR	Substantive requirements will apply if the selected remedy involves the construction of wells in Arizona.	Construction of wells in Arizona	PG&E		The preliminary (30%) design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. In addition, new monitoring wells may also be constructed in Arizona, the locations of the monitoring wells will be presented in the intermediate (60%) design. If a new freshwater supply well or additional monitoring wells in Arizona are required, a notice of intention to drill will be filed (A.R.S. 45-596).	The 60% design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona, and does not include any new monitoring wells in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. If a new freshwater supply well or additional monitoring wells in Arizona are required, a notice of intention to drill will be filed (A.R.S. 45-596).	While the 90% design includes freshwater supply from existing wells in Arizona, these supply wells are part of the alternative freshwater source evaluation (also known as the Fresh Water Implementation Plan [FWIP]). Compliance with ARARs, including the Arizona Well Standards, for the supply wells are included in the FWIP. If a new freshwater supply well or additional monitoring wells in Arizona are required, a notice of intention to drill will be filed (A.R.S. 45-596).
50	Arizona Action-Specific	Report by driller - A.R.S. §45-600	ARAR	Substantive requirements will apply if the selected remedy involves the construction of wells in Arizona.	Construction of wells in Arizona	PG&E		The preliminary (30%) design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. In addition, new monitoring wells may also be constructed in Arizona, the locations of the monitoring wells will be presented in the intermediate (60%) design. If a new freshwater supply well or additional monitoring wells in Arizona are required, a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600).	The 60% design assumes that freshwater supply comes from the existing irrigation well (HNWR-1) on the Refuge in Arizona, and does not include any new monitoring wells in Arizona. If the Refuge irrigation well is not used in the final design, placement of new freshwater supply wells will be needed. If a new freshwater supply well or additional monitoring wells in Arizona are required, a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600).	While the 90% design includes freshwater supply from existing wells in Arizona, these supply wells are part of the alternative freshwater source evaluation (also known as the Fresh Water Implementation Plan [FWIP]). Compliance with ARARs, including the Arizona Well Standards, for the supply wells are included in the FWIP. If a new freshwater supply well or additional monitoring wells in Arizona are required, a well driller's report will be filed within 30 days of completion of drilling (A.R.S. 45-600).

TABLES

OPERATION AND MAINTENANCE MANUAL

PRE-FINAL (90%) DESIGN SUBMITTAL FOR THE FINAL GROUNDWATER REMEDY

PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA

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Summary of Compliance with Identified ARARs

Operation and Maintenance Manual

PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
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51	Arizona Action-Specific	Arizona Remedial Action Requirements - A.R.S. §49-282.06(A)(2)	ARAR	Any treatment of groundwater must be conducted in a manner to provide for the maximum beneficial use of the waters of the state.	Treatment of groundwater in Arizona	PG&E		No further action is required. The preliminary (30%) design does not involve treatment of groundwater in Arizona.	No further action is required. The intermediate (60%) design does not involve treatment of groundwater in Arizona.	No further action is required. The pre-final (90%) design does not involve treatment of groundwater in Arizona.
74	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards applicable to generators of hazardous waste Title 22, CCR, Div 4.5, Ch 12, Article 1, §66262.11	ARAR Applicable	Owners or operators who generate waste shall determine whether waste is a hazardous waste. Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities are hazardous shall be made when the wastes are generated.	Activity that generates waste that could potentially be hazardous	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Waste generated during construction and operation of the remedy will be evaluated when the wastes are generated to determine if they are hazardous wastes.	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. The Construction/Remedial Action Work Plan will be submitted as part of the 90% design. The Plan for Decommissioning of the IM-3 Facility will also be submitted as part of the 90% design. Waste generated during construction and operation of the remedy will be evaluated when the wastes are generated to determine if they are hazardous wastes.	Waste management procedures are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials, describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual), includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.

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75	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> -Title 22, CCR, Div 4.5, Ch 12, Article 1, §66262.12	ARAR Applicable	A generator shall not treat, store, dispose of, transport or offer for transportation, hazardous waste without having received an identification number. Substantive requirements will be applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities are hazardous shall be made when the wastes are generated.	Activity that generates waste that could potentially be hazardous	PG&E	USEPA ID Number	Hazardous waste generated by the final remedy will be managed under the existing USEPA ID number for the Topock groundwater remediation area, CAR000151118.	Hazardous waste generated by the final remedy will be managed under the existing USEPA ID number for the Topock groundwater remediation area, CAR000151118.	Hazardous waste generated by the final remedy will be managed under the existing USEPA ID number for the Topock groundwater remediation area, CAR000151118.
76	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards for owners and operators of hazardous waste transfer and TSD facilities Title 22, CCR, Div 4.5, Ch 14, Article 2	ARAR Applicable	Establish requirements for a hazardous waste treatment facility to have a plan for waste analysis, develop a security system, conduct regular inspections, provide training to facility personnel, and use a quality assurance program during construction. The requirements may be applicable if CERCLA response action includes treatment, storage, or disposal as defined under RCRA, or may be relevant and appropriate if the requirements address problems or situations sufficiently similar to the specific circumstances at the site that their usage will be well suited.	Activity associated with construction and operation of a treatment facility or long term (longer than 90 days) storage of hazardous waste. If waste is simply removed, stored in appropriate containers after characterization, and removed off-site within 90 days, PG&E will be required to follow the substantive requirements of PG&E of a generator, including use of manifests, record keep, segregation of incompatibles, etc.	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	In-situ treatment of contaminated groundwater or conditioning of remedy-produced water does not comprise a hazardous waste treatment facility as defined in the hazardous waste regulations. However, a variety of these provisions will be addressed in documents such as the O&M Plan, Soil Management Plan prepared under EIR mitigation measure HAZ-2c, and the Security Plan prepared under EIR mitigation measure CUL-1a-3b. Waste analysis procedures will be addressed in standard operating procedures for the treatment/conditioning process that will be developed.	In-situ treatment of contaminated groundwater or conditioning of remedy-produced water does not comprise a hazardous waste treatment facility as defined in the hazardous waste regulations. However, a variety of these provisions will be addressed in documents such as the O&M Plan, Soil Management Plan prepared under EIR mitigation measure HAZ-2c, and the Security Plan prepared under EIR mitigation measure CUL-1a-3b. Waste management, including waste analysis, is described in Section 6 of the O&M Manual, which is included in this BOD Report for the 60% design as Appendix L. The Soil Management Plan is also included in the O&M Manual (Volume 4).	In-situ treatment of contaminated groundwater or conditioning of remedy-produced water does not comprise a hazardous waste treatment facility as defined in the hazardous waste regulations. However, a variety of these provisions are addressed in documents such as the O&M Plan, the Soil Management Plan prepared under EIR mitigation measure HAZ-2c, the Construction/Remedial Work Plan (including the Construction Quality Assurance Project Plan), and the Security Plan prepared under EIR mitigation measure CUL-1a-3b.  Waste management, including waste analysis, is described in:  a) Section 6 of the O&M Plan, which is included in the BOD Report for the 90% design as Volume 1 of the O&M Manual (Appendix L),  b) The Soil Management Plan, which is included in Volume 4 of the O&M Manual (Appendix L),  c) The Waste Management Plan, which is included as an appendix of the Construction/ Remedial Action Work Plan, and  d) Section 5 of the IM-3 Decommissioning, Removal, and Restoration Work Plan (appendix to the CIMP and to the Construction/Remedial Action Work Plan).

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77	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards applicable to generators of hazardous waste Title 22, CCR, Div 4.5, Ch 12, Article 2, §66262.20, §66262.22	ARAR Applicable	A generator of hazardous waste who transports or offers hazardous waste for transportation shall prepare a manifest. Substantive requirements will be applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities are hazardous shall be made when the wastes are generated.	Preparation of offsite shipment of hazardous waste	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Hazardous waste manifests will be prepared for each off-site shipment of hazardous waste.	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. Hazardous waste manifests will be prepared for each off-site shipment of hazardous waste.	Waste management procedures are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual) includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.  Hazardous waste manifests will be prepared for each off-site shipment of hazardous waste.

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78	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards applicable to generators of hazardous waste Title 22, CCR, Div 4.5, Ch 12, Article 3, §66262.30, §66262.31, §66262.32, §66262.33	ARAR Applicable	Before transporting hazardous waste or offering hazardous waste for transportation off-site, the generator must do the following in accordance with DOT regulations: package the waste, label and mark each package of hazardous waste, and ensure that the transport vehicle is correctly placarded.	Preparation of offsite shipment of hazardous waste	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Hazardous waste will be managed in accordance with Title 22 CCR Div 4.5, Ch 12, Article 3, §66262.30, §66262.31, §66262.32, and §66262.33..	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. Hazardous waste will be managed in accordance with Title 22 CCR Div 4.5, Ch 12, Article 3, §66262.30, §66262.31, §66262.32, and §66262.33.	Waste management procedures are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials, describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual), includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.

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79	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards applicable to generators of hazardous waste Title 22, CCR, Div 4.5, Ch 12, Article 3, §66262.34	ARAR Applicable	Requirements with respect to accumulation of waste on-site.	Accumulation of hazardous waste onsite	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration; Operations documents (e.g., manifests, inspection records)	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Hazardous waste generated onsite will meet the accumulation requirements of 22 CCR §66262.34.	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. Hazardous waste generated onsite will meet the accumulation requirements of 22 CCR §66262.34.	Waste management procedures (including accumulation requirements) are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials, describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual), includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.

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80	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards applicable to generators of hazardous waste Title 22, CCR, Div 4.5, Ch 12, Article 4, §66262.40, §66262.41	ARAR Applicable	Establishes requirements for record keeping of manifests, test results, waste analyses, and Biennial Reports. Any substantive requirements shall be attained.	Activity generating hazardous waste	PG&E	O&M Plan, Construction/ Remedial Action Work Plan, Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration, Operations documents (e.g., manifests, waste profiling records)	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures. Hazardous waste generated onsite will meet the recordkeeping requirements of 22 CCR §66262.40, §66262.41.	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. Hazardous waste generated onsite will meet the recordkeeping requirements of 22 CCR §66262.40, §66262.41.	Waste management procedures (including record keeping requirements) are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials, describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual), includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.
81	California Action-Specific	<u>Corrective Action</u> - Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.100 (a) through (d), (f), (g)(1), and (h)	ARAR Relevant and Appropriate	The owner or operator is required to take corrective action under Title 22, CCR, §66264.91 to remediate releases from the regulated unit and to ensure that the regulated unit achieves compliance with the water quality protection standard. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Remedy implementation	PG&E	O&M Plan (sampling and monitoring plan, contingency plan), Progress Reports, Construction/ Remedial Action Completion Report	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IME Facility prior to construction activities. These plans will describe spill control and response procedures and will incorporate requirements of mitigation measure HAZ-1a, HAZ-1b, and HYDRO-1for spill prevention, control, and cleanup during O&M, construction, and decommissioning activities.. In addition the O&M Plan will include a sampling and monitoring plan for groundwater.	The O&M Manual, which is included in this BOD Report for the 60% design as Appendix L, includes a Sampling and Monitoring Plan in Volume 2 to ensure that the regulated unit achieves compliance with the water quality protection standard, and a Contingency Plan in Volume 3 to address circumstances that may adversely affect the operation of the remedy.	The O&M Manual, which is included in the BOD Report for the 90% design as Appendix L, includes a Sampling and Monitoring Plan in Volume 2 to ensure that the regulated unit achieves compliance with the water quality protection standard, and a Contingency Plan in Volume 3 to address circumstances that may adversely affect the operation of the remedy.

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82	California Action-Specific	<u>Corrective Action for Waste Management Units</u> -Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.101	ARAR Relevant and Appropriate	The owner or operator is required to take corrective action to remediate releases from any solid or hazardous waste management unit at the facility to protect public health and the environment. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Remedy implementation	PG&E	O&M Plan (sampling and monitoring plan, contingency plan), Progress Reports, Construction/ Remedial Action Completion Report	PG&E will prepare O&M Plan and a Construction/Remedial Action Work Plan. These plans will describe spill control and response procedures and will incorporate requirements of mitigation measure HAZ-1a, HAZ-1b, and HYDRO-1for spill prevention, control, and cleanup during O&M and construction activities. In addition, the O&M Plan will include a sampling and monitoring plan for groundwater.	The O&M Manual, which is included in this BOD Report for the 60% design as Appendix L, includes a Sampling and Monitoring Plan in Volume 2 to ensure that the regulated unit achieves compliance with the water quality protection standard, and a Contingency Plan in Volume 3 to address circumstances that may adversely affect the operation of the remedy.	The O&M Manual, which is included in the BOD Report for the 90% design as Appendix L, includes a Sampling and Monitoring Plan in Volume 2 to ensure that the regulated unit achieves compliance with the water quality protection standard, and a Contingency Plan in Volume 3 to address circumstances that may adversely affect the operation of the remedy.
83	California Action-Specific	<u>Closure and post-closure care</u> -Title 22, CCR, Div 4.5, Ch 14, Article 7, §66264.111, §66264.112, §66264.115 through 120	ARAR Applicable	Owners and operators shall close a facility and perform post-closure care when contaminated subsurface soil cannot be practically removed or decontaminated. Contaminated soil, residues, or groundwater from remedial action at a site will achieve clean closure; otherwise, post-closure care requirements will be relevant and appropriate.	Decommissioning	PG&E	Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration, Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare a Decommissioning Plan for Remedy Facility and Site Restoration. Achievement of RAOs will be considered clean closure and that will remove any post-closure care obligations.	PG&E will prepare a Decommissioning Plan for Remedy Facility and Site Restoration that will be submitted prior to decommissioning. Achievement of RAOs will be considered clean closure and that will remove any post-closure care obligations.	The IM-3 Decommissioning, Removal, and Restoration Work Plan was prepared and is included in Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan. Achievement of RAOs will be considered clean closure and that will remove any post-closure care obligations.  In compliance with the CD (Appendix C Scope of Work, Article 9), PG&E will prepare a site-specific Plan for Decommissioning and Restoration of remedy facilities within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment.



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84	California Action-Specific	<u>Use and management of containers</u> -Title 22, CCR, Div 4.5, Ch 14, Article 9	ARAR Applicable	Containers used for the transfer or storage of hazardous waste must be in good condition, compatible with the waste, kept closed except to add or remove materials and be inspected weekly. The area used to store the containers must provide adequate secondary containment and be designed with runoff controls. Also, appropriate closure of the containers must take place.	Design and management of hazardous waste containers	PG&E	Design Submittals; O&M Plan; Construction/ Remedial Action Work Plan.	PG&E will prepare an O&M Plan, and a Corrective Measure/Remedial Action Construction Work Plan. These plans will describe waste management procedures. Containers used to transfer, store or treat hazardous waste will comply with requirements in 22 CCR §66262.171-§66262.179.	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. Containers used to transfer, store or treat hazardous waste will comply with requirements in 22 CCR §66262.171-§66262.179.	Waste management procedures (including containers requirements) are described in the following documents:  1) O&M Plan (Volume 1 of O&M Manual), Section 6, Waste Management Plan and Recoverable Materials, describes procedures for the collection, characterization, storage, transportation, and disposal of waste generated during operation and maintenance of the remedy.  2) Soil Management Plan (Volume 4 of O&M Manual), includes procedures and protocols for the management and disposal of potentially contaminated or contaminated soils displaced during drilling, construction, operation and maintenance of the remedy, and decommissioning and removal of IM-3 facilities.  3) The Waste Management Plan in an appendix of the Construction/Remedial Action Work Plan includes procedures for the management of wastes (other than soil) generated during construction and startup of the remedy.  4) IM-3 Decommissioning, Removal, and Restoration Work Plan, Section 5, Waste Management Plan and Recoverable Materials includes procedures for collection, characterization, storage, transportation, and disposal of wastes (other than soil) generated during the decommissioning and removal of IM-3 facilities.

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85	California Action-Specific	<u>Tank systems</u> - Title 22, CCR, Div 4.5, Ch 14, Article 10	ARAR Applicable	The remedial activities may involve storage and/or treatment in tanks. These tanks are required to have secondary containment, be monitored and inspected, be provided with overfill and spill protection controls, and operated with adequate freeboard. Also, appropriate closure must take place.	During project design, operation and maintenance activities where tank systems are used to transfer, store or treat hazardous waste	PG&E	Design Submittals; O&M Plan;	PG&E will prepare O&M Plan, and Corrective Measure/Remedial Action Construction Work Plan. Tank systems used to transfer, store or treat hazardous waste will comply with requirements in 22 CCR §66262.192-§66262.195.	At the 60% design stage, there is no transfer, storage and/or treatment of hazardous waste in tank systems.	<p>At the 90% design stage, there are two design elements that could trigger compliance with this ARAR:</p> <p><b><u>Sampling Purge Water Holding Tank in MW-20 Bench Carbon Amendment Building</u></b></p> <p>If the purge water or decon pad water accumulated in this tank exhibits hazardous waste characteristics, the water tank and any ancillary equipment handling hazardous waste will comply with the requirements for hazardous waste tank systems. It will be labeled as a hazardous waste tank, be equipped with secondary containment and overfill prevention controls, daily inspections will be performed and documented, and an engineer’s assessment of the tank system’s integrity will be performed.</p> <p><b><u>Portable Treatment Unit for Well Rehabilitation at Well Head</u></b></p> <p>Treatment of well rehabilitation water with a pH below 2.0 at the well head may be performed in a portable treatment unit that is subject to the requirements for a fixed treatment unit (FTU) operating under the Conditional Authorization permit tier if it operates entirely onsite, or to the requirements for a transportable treatment unit (TTU) operating under the Permit By Rule permit tier if it operates at multiple sites. If the treatment unit includes tanks that accumulate or treat waste with hazardous characteristics, the tanks and any ancillary equipment that handles hazardous waste will comply with the requirements for hazardous waste tank systems, including labeling, having secondary containment and overfill prevention controls, being subject to documented daily inspections, and having an engineer’s assessment of the tank system’s integrity performed. If the treatment unit operates as a TTU, compliance will be the obligation of the TTU owner.</p>

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86	California Action-Specific	<u>Waste piles</u> - Title 22, CCR, Div 4.5, Ch 14, Article 12	ARAR Applicable	The waste piles should be placed upon a lined foundation or base with a leachate system, protected from precipitation and wind dispersal, designed to prevent run on and run off. Also, closure and post-closure care requirements. Remedial action may involve soil excavation and the compiling of soil in a temporary waste pile. This requirement is applicable if the excavated waste meets RCRA hazardous waste criteria.	Under broad application, a triggering event could be any temporary stockpiling of haz soil	PG&E	Soil Management Plan (Volume 4 of O&M Manual)	PG&E will prepare a Soil Management Plan in conformance with EIR mitigation measures HAZ-2 and HAZ-2f to describe management procedures in the event that evidence of contaminated soil is identified during ground disturbing activities (e.g., noxious odors, discolored soil). It is not anticipated that regulated waste piles will be constructed.	A Soil Management Plan is included in Volume 4 of the O&M Manual as part of the 60% design. In conformance with EIR mitigation measures HAZ-2 and HAZ-2f, the Soil Management Plan describes management procedures in the event that evidence of contaminated soil is identified during ground disturbing activities (e.g., noxious odors, discolored soil).  It is not anticipated that long-term storage of soil requiring construction of a waste pile meeting Chapter 14, Article 12 requirements for soil exhibiting RCRA hazardous waste characteristics will occur. If necessary to facilitate characterization or staging for offsite transportation, RCRA and non-RCRA hazardous waste soil will be temporarily accumulated in a staging pile that meets the design standards specified in California Health and Safety Code Section 25123.3 for up to 90 days prior to transportation to a permitted offsite disposal facility.	A Soil Management Plan is included in Volume 4 of the O&M Manual as part of the 60% design. In conformance with EIR mitigation measures HAZ-2 and HAZ-2f, the Soil Management Plan describes management procedures in the event that evidence of contaminated soil is identified during ground disturbing activities (e.g., noxious odors, discolored soil).  It is not anticipated that long-term storage of soil requiring construction of a waste pile meeting Chapter 14, Article 12 requirements for soil exhibiting RCRA hazardous waste characteristics will occur. If necessary to facilitate characterization or staging for offsite transportation, RCRA and non-RCRA hazardous waste soil will be temporarily accumulated in a staging pile that meets the design standards specified in California Health and Safety Code Section 25123.3 for up to 90 days prior to transportation to a permitted offsite disposal facility.
87	California Action-Specific	<u>Landfills</u> - Title 22, CCR, Div 4.5, Ch 14, Article 14	ARAR Relevant and Appropriate	The requirements for landfills include the design and operation, action leakage rate, monitoring and inspection, response actions, surveying and recordkeeping and closure and post-closure care.	Design, construct, O&M, and closure of landfills (66260.10 defines “Landfill” as a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.)	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action is required. The preliminary (30%) design does not include construction of a landfill.	No further action is required. The 60% design does not include construction of a landfill.	No further action is required. The 90% design does not include construction of a landfill.

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88	California Action-Specific	<u>Miscellaneous Units</u> - Title 22, CCR, Div 4.5, Ch 14, Article 16	ARAR Applicable	Applies to waste management unit not otherwise regulated under RCRA. It may include pumps, auxiliary equipment, air strippers, etc. The substantive requirements include design, construction, operation, maintenance and closure of the unit that will ensure protection of human health and the environment. The actions include general inspections for safety and operation efficiency, testing and maintenance of the equipment (including testing of warning systems). Applicable if pumps are used for extraction and treatment of leachate that meets RCRA hazardous waste criteria.	Design, construct, O&M, and closure of waste management units not otherwise regulated under RCRA	PG&E	Design Submittals; O&M Plan; Construction/ Remedial Action Work Plan	No further action is required. The preliminary (30%) design assumes that the only pumps used for extraction of groundwater meeting RCRA hazardous waste criteria are submersible well pumps in the IRZ wells along National Trails Highway.	No further action is required. The 60% design assumes that the only pumps used for extraction of groundwater meeting RCRA hazardous waste criteria are submersible well pumps in the IRZ wells along National Trails Highway.	No further action is required. The 90% design assumes that the only pumps used for extraction of groundwater meeting RCRA hazardous waste criteria are submersible well pumps in the IRZ wells along National Trails Highway.
89	California Action-Specific	<u>Land Disposal Restrictions (LDR) for RCRA wastes and non-RCRA wastes</u> -Title 22, CCR, Div 4.5, Ch 18, Articles 1, 3, 4, 10, 11	ARAR Applicable	Movement of hazardous waste to new locations and placed in or on land will trigger LDR. General applicability, dilution prohibited, waste analysis and record keeping, and special rules apply for wastes that exhibit a characteristic waste. Best Demonstrated Available Technology (BDA) standards for each hazardous constituent in each listed waste, if residual is to be disposed. Utilize treatment standards table when necessary. Where applicable, hazardous waste generated from remedial activities must comply with LDR and meet the treatment standards or notify the disposal facility of the treatment standards before disposal at an appropriate offsite disposal facility.	Activity that generates hazardous waste	PG&E	O&M Plan, Construction/ Remedial Action Work Plan; Plan for Decommissioning and Removal of IM-3 Facility and Site Restoration; Plan for Decommissioning of Remedy Facilities and Restoration	PG&E will prepare an O&M Plan, a Construction/Remedial Action Work Plan, and a Plan for Decommissioning of IM-3 Facility prior to construction activities. These plans will describe waste management procedures during construction, operation, and decommissioning. The remedy is not expected to involve onsite placement of hazardous waste that will trigger the LDR requirements. Hazardous waste generated will be characterized to determine if LDR treatment standards are exceeded. A notification will be submitted to the disposal facility indicating whether the waste is restricted from land disposal and whether it exceeds an applicable treatment standard.	Waste management is described in Section 6 of the O&M Plan (Volume 1), which is included in this BOD Report for the 60% design as Appendix L. Waste management will also be described in the Construction/Remedial Action Work Plan and the Plan for Decommissioning of the IM-3 Facility that will be submitted as part of the 90% design. The remedy is not expected to involve onsite placement of hazardous waste that will trigger the LDR requirements. Hazardous waste generated will be characterized to determine if LDR treatment standards are exceeded. A notification will be submitted to the disposal facility indicating whether the waste is restricted from land disposal and whether it exceeds an applicable treatment standard.	The remedy is not expected to involve onsite placement of hazardous waste that will trigger the LDR requirements. Hazardous waste generated will be characterized to determine if LDR treatment standards are exceeded. A notification will be submitted to the disposal facility indicating whether the waste is restricted from land disposal and whether it exceeds an applicable treatment standard.

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90	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Standards for owners and operators of hazardous waste transfer and TSD facilities, Title 22, CCR, Div 4.5, Ch 14, Articles 3 and 4	ARAR Applicable	Establish requirements for a facility to plan for emergency conditions. In addition, the design and operation of the facility must be done to prevent releases. Other requirements include testing and maintenance of equipment and incorporation of communication and alarm systems and contingency plan. The requirements may be applicable if CERCLA response action includes treatment, storage, or disposal as defined under RCRA, or may be relevant and appropriate if the requirements address problems or situations sufficiently similar to the specific circumstances at the site that their usage will be well suited.	Design, construction, operation and maintenance of the remedy	PG&E	Design submittals; Project-specific HMBP; O&M Plan; Construction/ Remedial Action Work Plan	PG&E will prepare a Project-specific HMBP; an O&M Plan; and a Construction/Remedial Action Work Plan that will address procedures for emergencies.	<p>The Contingency Plan (Volume 3) of the O&amp;M Manual includes contingency planning for potential failure modes (including large releases), assess and mitigate risks, and prioritize risk management in order to prevent problems before they arise. The O&amp;M Plan (Volume 1) of the O&amp;M Manual covers routine O&amp;M activities which includes testing and maintenance of communication and alarm.</p> <p>Project-specific HMBP and a Construction/ Remedial Action Work Plan will address procedures for emergencies. The outline for the HMBP is presented in Appendix F of the O&amp;M Plan, which is included in the 60% design. The complete HMBP and Construction/Remedial Action Work Plan will be included in the 90% design.</p>	<p>The Contingency Plan (Volume 3) of the O&amp;M Manual includes contingency planning for potential failure modes (including large releases), assess and mitigate risks, and prioritize risk management in order to prevent problems before they arise. The O&amp;M Plan (Volume 1) of the O&amp;M Manual covers routine O&amp;M activities which includes testing and maintenance of communication and alarm.</p> <p>Section 5 of the Construction/Remedial Action Work Plan includes contingency planning for failure modes during construction (including large releases), assess and mitigate risks, and prioritize risk management in order to prevent problems before they arise.</p> <p>The project-specific HMBP (Appendix F of the O&amp;M Plan) also addresses procedures for emergencies.</p> <p>Communication protocols including contacts and notification in emergency conditions are presented in Exhibit L2.2-1 of the O&amp;M Manual, Table 2.3-1 of the Construction/Remedial Action Work Plan, and the HMBP.</p>

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91	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Groundwater monitoring and response, Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.91 (a) and (c)	ARAR Relevant and Appropriate	Owners or operators of a RCRA surface impoundment, waste pile, land treatment unit, or landfill shall conduct a monitoring and response program for each regulated unit. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Design, construction, operation and maintenance of the remedy	PG&E	Design submittals, O&M Plan (sampling and monitoring plan, contingency plan); Construction/ Remedial Action Work Plan, Progress Reports	PG&E will prepare a project-specific HMBP; an O&M Plan (include sampling and monitoring plan); and a Construction/Remedial Action Work Plan. The preliminary (30%) design does not include regulated units.	PG&E will prepare a project-specific HMBP; an O&M Manual (including a sampling and monitoring plan); and a Construction/Remedial Action Work Plan. The O&M Manual, which includes a sampling and monitoring plan for groundwater and surface water, is included as Appendix L in this BOD Report for the 60% design. The outline for the HMBP is presented in Appendix F of the O&M Plan, which is included in the 60% design. The complete HMBP and Construction/Remedial Action Work Plan will be included in the 90% design. Although the 60% design does not include regulated units, these plans present a monitoring and response program that is functionally equivalent and will provide a level of protection to water quality equivalent to the cited requirement.	Although the 90% design does not include regulated units, the following plans present a monitoring and response program that is functionally equivalent and will provide a level of protection to water quality equivalent to the cited requirement:  1) Appendix E of the O&M Plan (Volume 1 of the O&M Manual) includes an industrial SWPPP that involves BMPs designed to reduce pollutants in discharges that may affect receiving water quality during operations and maintenance of the remedy.  2) Volume 2 of the O&M Manual includes a sampling and monitoring plan for groundwater and surface water.  3) The Construction/Remedial Action Work Plan includes a BMP Plan for construction activities that involves visual inspections and monitoring and sampling for purposes of ensuring the protection of receiving water quality.  4) The project-specific HMBP addresses procedures for emergencies.
92	California Action-Specific	<u>Hazardous Waste Control Act (HWCA)</u> - Monitoring, Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.97 (b), (c), (d) and (e)(1) through (e)(5)	ARAR Relevant and Appropriate	Requirements for monitoring groundwater, surface water, and vadose zone. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Design, operation and maintenance of the remedy	PG&E	Design submittals, O&M Plan (sampling and monitoring plan, contingency plan); Progress Reports	PG&E will prepare an O&M Plan and Progress Reports. The O&M Plan will include a sampling and monitoring plan for groundwater and surface water.	The O&M Manual, which includes a sampling and monitoring plan for groundwater and surface water, is included as Appendix L in this BOD Report for the 60% design. PG&E will prepare Progress Reports that presents the results and analysis of monitoring data.	The O&M Manual, which includes a sampling and monitoring plan for groundwater and surface water, is included as Appendix L in the BOD Report for the 90% design. PG&E will prepare quarterly Progress Reports that presents the results and analysis of monitoring data.
93	California Action-Specific	Hazardous Waste Control Act (HWCA) - Detection Monitoring Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.98	ARAR Relevant and Appropriate	Requires the owner or operator of a regulated unit to develop a detection monitoring program that will provide reliable indication of a release. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Design, operation and maintenance of the remedy	PG&E	Design submittals, O&M Plan (sampling and monitoring plan, contingency plan); Progress Reports	PG&E will prepare an O&M Plan and Progress Reports. The O&M Plan will include a sampling and monitoring plan for groundwater and surface water that provides a level of protection equivalent to a detection monitoring program that will provide reliable indication of a release	PG&E will prepare an O&M Manual and Progress Reports. The O&M Manual, which includes a sampling and monitoring plan for groundwater and surface water, is included as Appendix L in this BOD Report for the 60% design. Although the 60% design does not include regulated units, the programs described in these documents provide a level of protection equivalent to a detection monitoring program that will provide reliable indication of a release.	Although the 90% design does not include regulated units, the programs described in the sampling and monitoring plan for groundwater and surface water (Volume 2 of the O&M Manual) and future quarterly progress reports provide a level of protection equivalent to a detection monitoring program that will provide reliable indication of a release.

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94	California Action-Specific	Hazardous Waste Control Act (HWCA) - Evaluation Monitoring, Title 22, CCR, Div 4.5, Ch 14, Article 6, §66264.99	ARAR Relevant and Appropriate	Requires the owner or operator of a regulated unit to develop an evaluation monitoring program that can be used to assess the nature and extent of a release from the unit. Substantive technical requirements are potentially relevant and appropriate for remedial action including groundwater monitoring.	Design, operation and maintenance of the remedy	PG&E	Design submittals, O&M Plan (sampling and monitoring plan, contingency plan); Progress Reports	PG&E will prepare an O&M Plan and Progress Reports. The O&M Plan will include a sampling and monitoring plan for groundwater and surface water that provides a level of protection equivalent to an evaluation monitoring program, based on site-specific conditions.	PG&E will prepare an O&M Plan and Progress Reports. Reports. The O&M Manual, which includes a sampling and monitoring plan for groundwater and surface water, is included as Appendix L in this BOD Report for the 60% design. Although the 60% design does not include regulated units, the programs described in these documents provide a level of protection equivalent to an evaluation monitoring program, based on site-specific conditions.	Although the 90% design does not include regulated units, the programs described in the sampling and monitoring plan for groundwater and surface water (Volume 2 of the O&M Manual) and future quarterly progress reports provide a level of protection equivalent to an evaluation monitoring program, based on site-specific conditions.
95	California Action-Specific	Discharges of Waste to Land - Title 23 CCR, Div 3, Ch 15	ARAR Relevant and Appropriate	The regulations in this chapter pertain to water quality aspects of hazardous waste discharge to land, establishing waste and site classifications and waste management requirements for waste treatment, storage, or disposal in landfills, surface impoundments, waste piles, and land treatment facilities. Requirements in this chapter are minimum standards for proper management of each waste category. Pursuant to Section 2511 (Exemptions), because this remediation constitutes actions taken by public agencies to cleanup unauthorized releases of waste, these regulations will only apply if the proposed remedial activities include (1) removal of waste from the immediate place of release, or (2) keeping some contamination in place.	Activities involve (1) removal of waste from the immediate place of release, or (2) keeping some contamination in place.	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.

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96	California Action-Specific	Consolidated Regulations for Storage, Treatment, Processing, or Disposal of Solid Waste - Title 27 CCR, Div 2, Subdivision 1	ARAR Relevant and Appropriate	The regulations in this subdivision (promulgated by the State Water Resources Control Board (SWRCB)) pertain to water quality aspects of discharges of solid waste to land for treatment, storage, or disposal. Pursuant to Section 20090 (Exemptions), because this remediation constitutes actions taken by public agencies to cleanup unauthorized releases of waste, these regulations will only apply if the proposed remedial activities include (1) removal of waste from the immediate place of release, or (2) keeping some contamination in place.	Activities involve (1) removal of waste from the immediate place of release, or (2) keeping some contamination in place.	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.	No further action is required. The remedy design does not involve removal of waste from the immediate place of release and is not designed to keep some contamination in place.
97	California Action-Specific	Requirements for land-use covenants - Cal. Code Regs. Title 22, § 67391.1	ARAR Applicable	This regulation requires appropriate restrictions on use of property in the event that a proposed remedial alternative results in hazardous materials remaining at the property at levels which are not suitable for unrestricted use of the land. This is an ARAR with respect to PG&E-owned land at the Topock site.	A decision document finding that hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels which are not suitable for unrestricted use of the land.	DTSC	A land use covenant imposing appropriate limitations on land use shall be executed and recorded when hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels which are not suitable for unrestricted use of the land. The land use restrictions must be clearly stated in any response action decision document approved by DTSC. The following information must be specified: (1) the	The final groundwater remedy includes restrictions on use of the groundwater for potable use, based on the conclusions of the groundwater risk assessment. The land use covenants (institutional controls) are described in Section 5.0.	The final groundwater remedy includes restrictions on use of the groundwater for potable use. The land use covenants (institutional controls) are described in Section 5.0 of the 60% BOD Report.	The final groundwater remedy includes restrictions on use of the groundwater for potable use. The land use covenants (institutional controls) are described in Section 5.0 of the 90% BOD Report.



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								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
							limitations or controls that will be incorporated into an appropriate land use covenant and (2) a description of the implementation and enforcement provisions, including but not limited to frequency of inspections and reporting requirements, necessary to ensure the integrity and long-term protectiveness of the land use covenant.			
98	California Action-Specific	California Water Code - Section 1380[c], California Well Standards, Bulletin 74-90 (Supplement to Bulletin 74-81)	ARAR Applicable	These standards for water, cathodic, and monitoring wells will be applicable if the remediation requires use of such wells.	Design, construction, decommission of groundwater wells	PG&E	Design submittals, Construction/ Remedial Action Work Plan, Plan for Decommissioning of IM-3 Facility and Site Restoration, Plan for Decommissioning of Remedial Facilities and Restoration.	PG&E will prepare Design submittals, a Construction/Remedial Action Work Plan, Plan for Decommissioning of IM-3 Facility and Site Restoration, and a Decommissioning Plan for Remedial Facility and Site Restoration. The remedy will include water and monitoring wells, and will adhere to the standards specified in this ARAR. Well construction and decommissioning standards will be described in the Construction /Remedial Action Work Plan.	The remedy includes water and monitoring wells, and will adhere to the standards specified in this ARAR. Note that the general approach for well decommissioning is currently being developed by a subgroup that includes PG&E, DTSC, DOI, and Interested Tribes. Protocols for well decommissioning will be based on this general approach and be presented in Appendix B of the O&M Plan (Volume 1 of the O&M Manual), at the 90% design stage. Well construction and decommissioning standards will also be described the Construction/ Remedial Action Work Plan.	The remedy includes water and monitoring wells, and will adhere to the standards specified in this ARAR. An approach for well decommissioning has been developed by a subgroup that includes PG&E, DTSC, DOI, and Interested Tribes. Protocols for well decommissioning developed based on this approach, are presented in the O&M Plan (Volume 1 of the O&M Manual). Well construction and decommissioning procedures are also described in the Construction/Remedial Action Work Plan.

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99	California Action-Specific	State Water Resources Control Board Resolution No. 88-63 Adoption of Policy Entitled “Sources of Drinking Water”	ARAR Applicable	With certain exceptions, all surface and ground waters of the State of California are to be considered suitable, or potentially suitable, for municipal or domestic water supply. The Regional Water Quality Control Board and State Water Resources Board have designated the beneficial use of the ground and surface waters in the Topock Site area as “municipal and domestic water supply.” This designation is set forth in the Basin Plan.	Remedy implementation	PG&E	O&M Plan (sampling and monitoring plan, contingency plan), Progress Reports, Corrective Measure/Remedial Action Completion Report	<p>Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal and state MCLs of 100 µg/L and 50 mg/L respectively which represent the chemical concentrations in drinking water considered safe for human consumption.</p> <p>There are no MCLs or MCLGs for Cr(VI) and the RAO has been established based on the regional background concentration of 32 µg/L Cr(VI) at the conclusion of remedy implementation.</p> <p>The establishment of RAOs (see Section 1.2.1) is based on the conclusions of the groundwater risk assessment which assumed a hypothetical future use of groundwater within the plume as a drinking water supply.</p> <p>The final groundwater remedy includes an institutional control to restrict use of the groundwater for potable use until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.</p>	<p>Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal and state MCLs of 100 µg/L and 50 mg/L respectively, which represent the chemical concentrations in drinking water considered safe for human consumption.</p> <p>There are no MCLs or MCLGs for Cr(VI) and the RAO of 32 µg/L (based on the regional background concentration) has been established at the conclusion of remedy implementation.</p> <p>Concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate above baseline levels within the treatment area during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona, will be pre-treated to below MCL prior to injection. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation are localized, will attenuate under site conditions, and will return to pre-remedy baseline levels after the end of active remediation.</p> <p>Modeling also indicates that manganese generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.</p> <p>The final groundwater remedy includes an institutional control to restrict use of the groundwater for potable use until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.</p>	<p>Compliance with this requirement will be achieved by reducing the concentration of Cr(T) in the affected aquifer to a concentration below the federal and state MCLs of 100 µg/L and 50 mg/L respectively, which represent the chemical concentrations in drinking water considered safe for human consumption.</p> <p>The state MCL for Cr(VI) is 10 µg/L. The RAO has been established based on the regional background concentration of 32 µg/L at the conclusion of remedy implementation.</p> <p>Concentrations of Cr(VI) and in-situ byproducts (e.g., arsenic, manganese) may fluctuate above baseline levels within the treatment area during remedy implementation. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation and freshwater injection are localized, will attenuate under site conditions, and will return to pre-remedy baseline levels after the end of active remediation and the cessation of freshwater injection, respectively.</p> <p>Modeling also indicates that manganese generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.</p> <p>The final groundwater remedy includes an institutional control to restrict use of the groundwater for potable use until the remedy is complete. Groundwater monitoring will be used to track performance of the remedy and verify that the RAOs have been achieved at the conclusion of remedy implementation and prior to removing the institutional control.</p>

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								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
100	California Action-Specific	Water Quality Control Plan; Colorado River Basin-Region 7, June 2006 (Basin Plan)	ARAR Applicable	This Basin Plan designates the Colorado River and the Colorado Hydrologic unit as having the beneficial use of “MUN” (or, municipal or domestic water supply). The Basin Plan also prescribes General Surface Water Objectives and Ground Water Objectives, in addition to Specific Surface Water Objectives for the Colorado River, which include a flow-weighted average annual numeric criterion for salinity for the portion of the Colorado River on the Topock Site of 723 mg/L. This TDS value must not be exceeded in any remedial alternative being considered	Remedy implementation	PG&E	O&M Plan (sampling and monitoring plan, contingency plan), Progress Reports, Corrective Measure/Remedial Action Completion Report	<p>Surface water sampling in the Colorado River near the site show concentrations of Cr(T) less than the federal and state MCLs of 100 µg/L and 50 mg/L (drinking water supply standards). Surface water sampling in the Colorado River also show concentrations of Cr(VI) less than the California Toxics Rule criteria of 11 µg/L (protection of freshwater aquatic life). Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will increase the level of certainty that surface water quality will continue to remain below these levels.</p> <p>PG&amp;E will prepare an O&amp;M Plan, Progress Reports, and a Corrective Measure/Remedial Action Completion Report. The remedy is intended to restore groundwater to the regional background Cr(VI) concentration of 32 µg/L, thereby addressing any contribution by PG&amp;E affecting potential beneficial uses. The operation of the River Bank Extraction Wells will prevent migration of contaminants to the Colorado river that could impact beneficial uses or result in a failure to meet surface water quality objectives.</p>	<p>Surface water sampling in the Colorado River near the site show concentrations of Cr(T) less than the federal and state MCLs of 100 µg/L and 50 mg/L (drinking water supply standards). Surface water sampling in the Colorado River also show concentrations of Cr(VI) less than the California Toxics Rule criteria of 11 µg/L (protection of freshwater aquatic life). Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will increase the level of certainty that surface water quality will continue to remain below these levels.</p> <p>The remedy is intended to restore groundwater to the regional background Cr(VI) concentration of 32 µg/L, thereby addressing any contribution by PG&amp;E affecting potential beneficial uses. The operation of the River Bank Extraction Wells will prevent migration of contaminants to the Colorado River that could impact beneficial uses or result in a failure to meet surface water quality objectives.</p> <p>The remedy is also designed and will be implemented to control the generation and migration of in-situ by-products (arsenic, manganese). The MCL for arsenic is 10 µg/L and the secondary MCL for manganese is 50 µg/L. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L (which is typical of water quality in the vicinity of Topock, Arizona) will be pre-treated to below MCL prior to injection. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation. Modeling also indicates that manganese generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.</p> <p>The O&amp;M Manual is Appendix L of this BOD Report for the 60% design. PG&amp;E will prepare Progress Reports and a Corrective Measure/Remedial Action Completion Report.</p>	<p>Surface water sampling in the Colorado River near the site show concentrations of Cr(T) less than the federal and state MCLs of 100 µg/L and 50 mg/L (drinking water supply standards). Surface water sampling in the Colorado River also show concentrations of Cr(VI) less than the California Toxics Rule criteria of 11 µg/L (protection of freshwater aquatic life). Surface water data in the Colorado River show concentrations of TDS less than the Surface Water Objectives for the Colorado River of 723 mg/L.</p> <p>Calculations show that remedy operations have insignificant impact on TDS in the river.</p> <p>Reducing Cr(VI) concentrations in groundwater by implementation of the remedy will increase the level of certainty that surface water quality will continue to remain below these levels. The remedy is intended to restore groundwater to the regional background Cr(VI) concentration of 32 µg/L, thereby addressing any contribution by PG&amp;E affecting potential beneficial uses. The operation of the River Bank Extraction Wells will prevent migration of contaminants to the Colorado River that could impact beneficial uses or result in a failure to meet surface water quality objectives.</p> <p>The remedy is also designed and will be implemented to control the generation and migration of in-situ by-products (arsenic, manganese). The MCL for arsenic is 10 µg/L and the secondary MCL for manganese is 50 µg/L. In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project’s Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation and freshwater injection are localized, will attenuate under site conditions and will return to pre-remedy baseline levels after the end of active remediation and the cessation of freshwater injection, respectively.</p> <p>Modeling also indicates that manganese</p>

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Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
										generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.
101	California Action-Specific	State Water Resources Control Board Resolution No. 68-16 ("Antidegradation Policy") - Statement of Policy with respect to Maintaining High Quality of Waters in California	ARAR Applicable	Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.	Remedy implementation	PG&E	O&M Plan (sampling and monitoring plan, contingency plan), Progress Reports, Corrective Measure/Remedial Action Completion Report	PG&E will prepare an O&M Plan, Progress Reports, and a Corrective Measure/Remedial Action Completion Report. Although constituent concentrations will fluctuate inside the footprint of the remedy during implementation, at the conclusion of the remedy the RAOs will achieve background levels for chromium. Therefore, the remedy will comply with the substantive provisions of the SWRCB Resolution 68-16 that requires maintenance of the highest water quality consistent with maximum benefit to the people of the State, and with the substantive provisions of SWRCB Resolution 92-49 that require restoration of background water quality.	<p>The O&amp;M Manual is Appendix L of the BOD Report for the 60% design. PG&amp;E will prepare Progress Reports and a Corrective Measure/Remedial Action Completion Report.</p> <p>Although constituent concentrations will fluctuate inside the footprint of the remedy during implementation, at the conclusion of the remedy the RAOs will achieve background levels for chromium.</p> <p>In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project's Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona, will be pre-treated to below MCL prior to injection. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation will attenuate under site conditions, are localized, and will return to pre-remedy baseline levels after the end of active remediation.</p> <p>Modeling also indicates that manganese generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.</p> <p>Therefore, the remedy will comply with the substantive provisions of the SWRCB Resolution 68-16 that requires maintenance of the highest water quality consistent with maximum benefit to the people of the State, and with the substantive provisions of SWRCB Resolution 92-49 that require restoration of background water quality.</p>	<p>The O&amp;M Manual is Appendix L of the BOD Report for the 90% design. PG&amp;E will prepare Progress Reports and a Corrective Measure/Remedial Action Completion Report.</p> <p>Although constituent concentrations will fluctuate inside the footprint of the remedy during implementation, at the conclusion of the remedy the RAOs will achieve background levels for chromium.</p> <p>In addition, as part of the remedy fresh water from a well in Arizona will be injected west of the plume, within the project's Area of Potential Effects. The naturally occurring arsenic concentration in water from the well exceeds the MCL of 10 µg/L, which is typical of water quality in the vicinity of Topock, Arizona. Modeling indicates that arsenic concentrations that may temporarily be elevated by the generation from in-situ remediation and freshwater injection will attenuate under site conditions, are localized, and will return to pre-remedy baseline levels after the end of active remediation and the cessation of freshwater injection, respectively.</p> <p>Modeling also indicates that manganese generated from in-situ remediation does not exceed the upper tolerance level of background manganese concentration at the site.</p> <p>Therefore, the remedy will comply with the substantive provisions of the SWRCB Resolution 68-16 that requires maintenance of the highest water quality consistent with maximum benefit to the people of the State, and with the substantive provisions of SWRCB Resolution 92-49 that require restoration of background water quality.</p>

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102	California Action-Specific	State Water Resources Control Board Resolution No. 92-49 -- Policies and Procedures for investigation and Cleanup and Abatement of Discharges under Water Code Section 13304	ARAR Relevant and Appropriate	Section III.A of this Resolution states that the Regional Water Board shall “concur with any investigative and abatement proposal which the discharger demonstrates and the Regional Water Board finds to have a substantial likelihood to achieve compliance within a reasonable time frame...”	Remedy implementation	PG&E	Corrective Measure/ Remedial Action Completion Report	PG&E will prepare a Corrective Measure/Remedial Action Completion Report. Because RAOs will achieve background levels for chromium, the remedy will comply with the substantive provisions of the SWRCB Resolution 92-49 that require restoration of background water quality.	PG&E will prepare a Corrective Measure/ Remedial Action Completion Report. Because RAOs will achieve background levels for chromium, the remedy will comply with the substantive provisions of the SWRCB Resolution 92-49 that require restoration of background water quality.	PG&E will prepare a Corrective Measure/ Remedial Action Completion Report. Because RAOs will achieve background levels for chromium, the remedy will comply with the substantive provisions of the SWRCB Resolution 92-49 that require restoration of background water quality.
Location-Specific										
5	Federal Location-Specific	<u>Federal Land Policy and Management Act</u> - (FLPMA);43 USC § 1701, et seq.; 43 CFR 2800	ARAR Applicable	In managing public lands, BLM is directed to take any action necessary to prevent unnecessary or undue degradation of the lands. Actions <sup>3</sup> taken on the public land (i.e. BLM-managed land) portions of the Topock site should provide the “optimal balance between authorized resource use and the protection and long-term sustainability of sensitive resources.”	Activities on public lands	BLM	Design submittals, Construction/ Remedial Action Work Plan, O&M Plan, Progress Reports, Plan for Decommissioning of Remedy Facilities and Restoration	The preliminary (30%) design was submitted by PG&E to DOI on November 18, 2011, and includes proposed facilities on BLM land. PG&E will prepare future design submittals, a Construction/ Remedial Action Work Plan, an O&M Plan, Progress Reports, and a Decommissioning Plan for review by DOI. PG&E understands that DOI will coordinate its review of these submittals with BLM.	The 60% design was submitted to DOI on April 5, 2013, and includes proposed facilities on BLM land. Engineering drawings are included as Appendix D to this 60% design report and an O&M Manual is included as Appendix L. PG&E will submit a Construction/Remedial Action Work Plan as part of the 90% design, a Decommissioning Plan prior to decommissioning, and progress reports for review by DOI. PG&E understands that DOI will coordinate its review of these submittals with BLM.	The 90% design was submitted to DOI on September 8, 2014, and includes proposed facilities on BLM land. Engineering drawings are included as Appendix D to the 90% design report and an O&M Manual is included as Appendix L. The Construction/Remedial Action Work Plan was also submitted concurrently with the 90% design as part of the 90% design. Progress reports will be submitted during the construction and operation and maintenance of the remedy.  PG&E understands that DOI will coordinate its review of these submittals with BLM.  In compliance with the CD (Appendix C Scope of Work, Article 9), PG&E will prepare a site-specific Plan for Decommissioning and Restoration of remedy facilities within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment.

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7	Federal Location-Specific	<u>National Wildlife Refuge System Administration Act, as amended</u> - 16 USC §§ 668dd-ee; 50 CFR Part 27	ARAR Applicable	This Act governs the use and management of National Wildlife Refuges. The Act requires that USFWS evaluate ongoing and proposed activities and uses to ensure that such activities are appropriate and compatible with both the mission of the overall National Wildlife Refuge System, as well as the specific purposes for which the Havasu National Wildlife Refuge (HNWR) was established. The Topock site includes portions of the HNWR. Prior to selection of a remedial action <sup>3</sup> by DOI/USFWS, that remedial action must be found by the Refuge Manager to be both an appropriate use of the HNWR and compatible with the mission of the HNWR and the Refuge System as a whole. <sup>2</sup>	Activities on the HNWR	USFWS/DOI	Design submittals, Construction/ Remedial Action Work Plan, O&M Plan, Progress Reports, Plan for Decommissioning of Remedy Facilities and Restoration	The preliminary (30%) design was submitted by PG&E to agencies on November 18, 2011 and includes proposed facilities on HNWR land. PG&E will prepare future design submittals, a Construction/ Remedial Action Work Plan, an O&M Plan, Progress Reports, and a Decommissioning Plan for review by DOI. PG&E understands that DOI will coordinate its review of these submittals with USFWS.	The 60% design was submitted to DOI on April 5, 2013, and includes proposed facilities on HNWR land. Engineering drawings are included as Appendix D to this 60% design report and an O&M Manual is included as Appendix L. PG&E will submit a Construction/Remedial Action Work Plan as part of the 90% design, a Decommissioning Plan prior to decommissioning, and progress reports for review by DOI. PG&E understands that DOI will coordinate its review of these submittals with USFWS.	See <b>Table 6.2-1A (Supplemental Information for ARAR #7_AUA_CD)</b> .

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								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
13	Federal Location-Specific	<u>Fish and Wildlife Coordination Act</u> - 16 USC §§ 661-667e	ARAR Applicable	This Act requires that any federally-funded or authorized modification of a stream or other water body must provide adequate provisions for conservation, maintenance, and management of wildlife resources and their habitat. Necessary measures should be taken to mitigate, prevent, and compensate for project-related losses of wildlife resources. Any remedial action selected for the Topock site that includes any modification of a water body will be subject to these requirements.	Any modification of a water body	PG&E	N/A. No further action required unless design change triggers; reconfirm in design submittals.	No further action is required. The preliminary (30%) design does not include modification of a water body.	Figure 2.4-5 in the 60% BOD Report document shows the overlaps between remedy infrastructure and the USACE and CDFW jurisdictional waters/wetlands. As shown in Figure 2.4-5, PG&E determined in the 60% Design that complete avoidance of washes is not feasible due to the need to install remediation and monitoring wells and associated pipes and components in washes (e.g., a wash in the Upland, Bat Cave Wash).  For activities to be conducted in CDFW jurisdictional washes, PG&E will comply with the avoidance and minimization measures specified in the CDFW letter dated March 6, 2013 (CDFW 2013), and any additional measures PG&E's biologist determines to be necessary.  PG&E will work with USACE and USFWS to determine and comply with the substantive requirements, per CERCLA 121(e), of Section 404 and the Fish and Wildlife Coordination Act, respectively.	Figure 2.4-5 in the 90% BOD Report document shows the overlaps between remedy infrastructure and the USACE and CDFW jurisdictional waters/wetlands. As shown in Figure 2.4-5, PG&E determined in the 90% Design that complete avoidance of washes is not feasible due to the need to install remediation and monitoring wells and associated pipes and components in washes (e.g., a wash in the Upland, Bat Cave Wash).  For activities to be conducted in CDFW jurisdictional washes, PG&E will comply with the avoidance and minimization measures specified in the CDFW letter dated March 6, 2013 (CDFW 2013), and any additional measures PG&E's biologist determines to be necessary.  PG&E will also comply with avoidance, minimization and mitigation measures specified in the Section 404 protocol (see Exhibit 6.1-1 at the end of Table 6.1-1) and the requirements of the Programmatic Biological Assessment. USFWS will be consulted on the 90% BOD Report.
14	Federal Location-Specific	<u>National Historic Preservation Act</u> - 16 USC § 470, et seq.;36 CFR 800.1, et seq.	ARAR Applicable	This statute and the implementing regulations direct federal agencies to consider the effects of their undertakings on historic properties included in or eligible for inclusion in the National Register of Historic Places and to consult with certain parties before moving forward with the undertaking. The agency must determine, based on consultation, if an undertaking's effects would be adverse and consider feasible and prudent alternatives that could avoid, mitigate, or minimize such adverse effects on a National Register or eligible property. The agency must then specify how adverse effects will be avoided or mitigated or acknowledge that such effects cannot be	Remedial action selected for the Topock site qualifies as an undertaking under NHPA	BLM, Advisory Council on Historic Preservation, California and Arizona State Historic Preservation Offices, USFWS and PG&E are parties to the PA	PA, CHPMP, Design Submittals, Construction/Remedial Action Work Plan, Plan for decommissioning, removal, and restoration of IM-3 facility, Plan for Decommissioning of Remedy Facilities and Restoration, Documents related to ongoing consultation, Brochure, Annual Report, Tribal Access Plan	Documents led by BLM include the PA, the CHPMP, the Brochure, the Annual Report, and the Tribal Access Plan. The PA has been completed. The Brochure to notify other state and federal agencies of the Signatories and Invited Signatories with the actions to be taken within the vicinity of the Topock Remediation Project, and the Topock Maze, is completed. The CHPMP, which is a requirement of the PA, is under preparation and the goal is to have a plan in place by January 20, 2012. BLM distributed a draft CHPMP on November 1, 2011. Comments on the draft CHPMP are due December 5, 2011. The Tribal Access Plan is also under preparation and the goal is to complete the Plan by November 26, 2011 (note that the PA-required Tribal Access Plan will be coordinated with the EIR-required Access Plan).Annual reports of cultural resources activities will be prepared and submitted to all Signatories, Tribes, and Invited Signatories as directed in the PA.  Documents led by PG&E include design	Documents led by BLM include the PA, the CHPMP, the Brochure, the Annual Report, and the Tribal Access Plan. The PA has been completed. The Brochure to notify other state and federal agencies of the Signatories and Invited Signatories with the actions to be taken within the vicinity of the Topock Remediation Project, and the Topock Maze, is completed.  The CHPMP, which is a requirement of the PA, was issued on January 20, 2012. The CHPMP can be modified and updated, as needed, to address new information and ongoing activities related to the project. Therefore, subsequent to the issuance of the CHPMP, BLM continues to hold periodic working meetings on the CHPMP. It should be noted that treatment measures are included in the CHPMP and a treatment plan will continue to be developed throughout the design to address mitigation measures.  The Tribal Access Plan for lands under federal management was completed on November 26, 2011 (note that the PA-required Tribal Access Plan will be coordinated with the EIR-required Access Plan).  Annual reports of cultural resources activities	Documents led by BLM include the PA, the CHPMP, the Brochure, the Annual Report, and the Tribal Access Plan. The PA is completed. The Brochure to notify other state and federal agencies of the Signatories and Invited Signatories with the actions to be taken within the vicinity of the Topock Remediation Project, and the Topock Maze, is also completed.  The CHPMP, which is a requirement of the PA, was issued on January 20, 2012. The CHPMP can be modified and updated, as needed, to address new information and ongoing activities related to the project. Therefore, subsequent to the issuance of the CHPMP, BLM continues to hold periodic working meetings on the CHPMP. It should be noted that treatment measures are included in the CHPMP and a treatment plan will be prepared and submitted to DTSC shortly after the submission of the 90% design.  The Tribal Access Plan for lands under federal management was completed on November 26, 2011. On October 21, 2013, PG&E provided the Tribes a draft of the Access Plan for lands not under federal management for review and comment. Tribal comments were received on

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				avoided or mitigated. The Topock site includes historic properties in or eligible for inclusion in the National Register and remedial action selected for the Topock site qualifies as an undertaking pursuant to the NHPA. Measures to avoid or mitigate adverse effects of any selected remedial action that are adopted by the agency through consultation must be implemented by the remedial action to comply with the NHPA.				submittals, a Construction/Remedial Action Work Plan, a Plan for decommissioning, removal, and restoration of IM-3 facility, and a Decommissioning Plan for Remedy Facilities and Restoration. The preliminary (30%) design was submitted on November 18, 2011. The other documents will be prepared and submitted.	will be prepared and submitted to all Signatories, Tribes, and Invited Signatories as directed in the PA. BLM published the first Annual Report on November 25, 2011, and the second Annual Report on January 29, 2013. The PA requires that such reports will be prepared and submitted by December 1 each year for the first five years after execution of the PA and every two years thereafter.  Documents led by PG&E include design submittals; a Construction/Remedial Action Work Plan; a Plan for decommissioning, removal, and restoration of the IM-3 facility; and a Decommissioning Plan for Remedy Facilities and Restoration. The intermediate (60%) design submittal was submitted on April 5, 2013. The other documents will be prepared and submitted.	November 22, 2013. PG&E has updated the plan and included the plan in an appendix of the Construction/Remedial Action Work Plan. (note that the PA-required Tribal Access Plan will be coordinated with the EIR-required Access Plan).  Annual reports of cultural resources activities will be prepared and submitted to all Signatories, Tribes, and Invited Signatories as directed in the PA. BLM published the first Annual Report on November 25, 2011, and the second Annual Report on January 29, 2013. The Third Annual Report was provided by BLM to the Signatories, Tribes, and Invited Signatories for comment on June 18, 2014. The PA requires that such reports will be prepared and submitted by December 1 each year for the first five years after execution of the PA and every two years thereafter.  Documents led by PG&E include design submittals; a Construction/Remedial Action Work Plan; a Plan for decommissioning, removal, and restoration of the IM-3 facility; and a Decommissioning Plan for Remedy Facilities and Restoration. The 90% design, the Construction/ Remedial Action Work Plan, and the IM-3 decommissioning, removal, and restoration work plan were submitted on September 8, 2014.  In compliance with the CD (Appendix C Scope of Work, Article 9), PG&E will prepare a site-specific Plan for Decommissioning and Restoration of remedy facilities within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment.



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								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
17	Federal Location-Specific	<u>National Archaeological and Historic Preservation Act</u> – 16 USC § 469, et seq.; 36 CFR 65	ARAR Applicable	This statute requires the evaluation and preservation of historical and archaeological data which might otherwise be irreparably lost or destroyed through any alteration of terrain as a result of federal construction projects or a federally-licensed activity. The Topock site includes historical and archaeological data. Any remedial action selected for the Topock site must include measures for the evaluation and preservation of historical and archaeological data that might be lost or destroyed as a result of the remedial action.	Alteration of terrain that threatens significant scientific, historical or archaeological data.	Federal Agencies, PG&E	PA, CHPMP, Design Submittals, Construction/ Remedial Action Work Plan	Requirements in the PA and the forthcoming CHPMP will be adhered to.  Documents led by PG&E include design submittals, a Construction/Remedial Action Work Plan, a Plan for decommissioning, removal, and restoration of IM-3 facility, and a Decommissioning Plan for Remedy Facilities and Restoration. The preliminary (30%) design was submitted on November 18, 2011. The other documents will be prepared and submitted.	Requirements in the PA and the CHPMP will be adhered to.  Documents led by PG&E include design submittals; a Construction/Remedial Action Work Plan; a Plan for decommissioning, removal, and restoration of the IM-3 facility; and a Decommissioning Plan for Remedy Facilities and Restoration. The intermediate (60%) design submittal was submitted on April 5, 2013. The other documents will be prepared and submitted.	Requirements in the PA and the CHPMP will be adhered to. These requirements include implementation of mitigation measures identified in the PA and the CHPMP and through ongoing consultation activities with the Tribes that will avoid, mitigate, or otherwise minimize adverse effects from the undertaking. Tables 6.2-2 and 6.2-3 summarize actions by PG&E to implement the applicable provisions under the PA and the CHPMP.  Documents led by PG&E include design submittals; a Construction/Remedial Action Work Plan; a Plan for decommissioning, removal, and restoration of the IM-3 facility; and a Decommissioning Plan for Remedy Facilities and Restoration. The 90% design, the Construction/ Remedial Action Work Plan, and the IM-3 decommissioning, removal, and restoration work plan were submitted on September 8, 2014.  In compliance with the CD (Appendix C Scope of Work, Article 9), PG&E will prepare a Plan for Decommissioning and Restoration of the remedy facilities within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment.

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								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
18	Federal Location-Specific	<u>Archaeological Resources Protection Act</u> - 16 USC § 470aa-ii, et seq.;43 CFR 7.1, et seq.	ARAR Applicable	This statute provides for the protection of archeological resources located on public and Tribal lands. The Act establishes criteria which must be met for the land manager’s approval of any excavation or removal of archaeological resources if a proposed activity involves soil disturbances. The Topock site includes archaeological resources on public land. Any remedial action selected for the Topock site must satisfy the criteria applicable to excavation or removal of archaeological resources that might be affected as a result of the remedial action.	Disturbance of archaeological and historical sites	Federal Agencies, PG&E	PA, CHPMP, Design Submittals, Construction/ Remedial Action Work Plan	Requirements in the PA and the forthcoming CHPMP will be adhered to. PG&E will prepare and submit design submittals and the Construction/Remedial Action Work Plan. The preliminary (30%) design was submitted on November 18, 2011.	Requirements in the PA and the CHPMP will be adhered to. PG&E will submit a Construction/ Remedial Action Work Plan as part of the 90% design. The 60% design was submitted on April 5, 2013.	Requirements in the PA and the CHPMP will be adhered to. These requirements include implementation of mitigation measures identified in the PA and the CHPMP and through ongoing consultation activities with the Tribes that will avoid, mitigate, or otherwise minimize adverse effects from the undertaking. Tables 6.2-2 and 6.2-3 summarize actions by PG&E to implement the applicable provisions under the PA and the CHPMP.  The 90% design and the Construction/Remedial Action Work Plan were submitted on September 8, 2014.
19	Federal Location-Specific	<u>Historic Sites Act</u> - 16 USC 461-467	ARAR Applicable	Pursuant to this Act, federal agencies are to consider the existence and location of historic sites, buildings, and objects of national significance using information provided by the National Park Service to avoid undesirable impacts upon such landmarks. There are no designated historic landmarks within the APE, although 16 USC 461, through Public Law 106-45, provides for a cooperative program "for the preservation of the Route 66 corridor" through grants and other measures. Undesirable impacts on this site that might result from any remedial action selected for the Topock site will be evaluated and mitigated to the maximum extent practicable.	Existence of a historic landmark	Federal Agencies	Reevaluate in design documents if designated historic landmark exist	There are no historic landmarks in the APE. No further action is required.	There are no historic landmarks in the APE. No further action is required.	There are no historic landmarks in the APE. No further action is required.

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
21	Federal Location-Specific	<u>Native American Graves Protection and Repatriation Act (NAGPRA)</u> - 25 USC § 3001, et seq.; 43 CFR 10.1, et seq.	ARAR Applicable	NAGPRA establishes requirements regulating the removal and trafficking of human remains and cultural items, including funerary and sacred objects. The Topock site may contain human remains. If remediation activities result in the discovery of Indian human remains or related objects, NAGPRA requirements must be met.	Federal Lands only - Discovery of human remains	PG&E	PA, CHPMP	Requirements of the PA and the forthcoming CHPMP (led by BLM) will be adhered to during the implementation of the remedy.	Requirements of the PA and the CHPMP (led by BLM) will be adhered to during the implementation of the remedy.	Requirements in the PA and the CHPMP will be adhered to. These requirements include implementation of mitigation measures identified in the PA and the CHPMP and through ongoing consultation activities with the Tribes that will avoid, mitigate, or otherwise minimize adverse effects from the undertaking. Tables 6.2-2 and 6.2-3 summarize actions by PG&E to implement the applicable provisions under the PA and the CHPMP.
22	Federal Location-Specific	<u>American Indian Religious Freedom Act</u> - 42 USC § 1996, et seq.	ARAR Relevant and Appropriate	The United States must “protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise [their] traditional religions...” Any remedial action selected for the Topock site must satisfy this requirement.	Remedy selection	Federal Agencies (BLM Lead), PG&E	Tribal Access Plan	BLM leads the preparation of the Tribal Access Plan. Goal is to complete the plan by November 26, 2011. Note that the EIR-required Access Plan will be coordinated with the PA-required Access Plan.	BLM led the preparation of the Tribal Access Plan for lands under federal management, and the Plan was completed on November 26, 2011. Note that the EIR-required Access Plan is under preparation.	BLM led the preparation of the Tribal Access Plan for lands under federal management, and the Plan was completed on November 26, 2011. The EIR-required Access Plan was prepared and is included in an appendix of the Construction/ Remedial Action Work Plan.

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
27	Federal Location-Specific	<u>Resource Conservation and Recovery Act</u> - 42 USC § 6901, et.seq.; 40 CFR 264.18	ARAR Applicable	These regulations promulgated under RCRA establish Seismic and Floodplain considerations which must be followed for treatment, storage, or disposal facilities constructed, operated, or maintained within certain distances of fault lines and floodplains. Portions of the Topock site are located on or near a 100-year floodplain.	Infrastructure in 100-year floodplain/ regulatory floodway	PG&E	Design submittals	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C.</p> <p>The 100-year floodplain is defined in the Flood Insurance Rate Map (FIRM), Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008. The base flood elevation shown on the current FIRM is 464 at River Mile (RM) 234 of the Colorado River. The effective Flood Insurance Study (FIS) for San Bernardino County lists a regulatory base flood elevation of 463.90. This design uses the more conservative elevation of 464 as the base flood elevation. Wells and pipelines are included in the preliminary (30%) design in areas of the Colorado River floodplain necessary for capture and treatment of the chromium plume. The infrastructure in this preliminary (30%) design (wells, pipes) is mostly outside the 100-year floodplain, see Sheet C-2, well FP-EX-5.</p>	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C of this BOD Report for the 60% design.</p> <p>The 100-year floodplain is defined in the Flood Insurance Rate Map (FIRM), Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008, and Panel 5675 of 6700 for Mohave County, Arizona and Unincorporated Areas, Revised November 18, 2009 (Map Number 04015C5675G). The base flood elevation shown on the current FIRM is 464 at River Mile (RM) 234 of the Colorado River. A review of the Mohave County Flood Insurance Study (FIS) shows that this elevation is specific to the California side of the River only, and is different from information found in the newer FIS for Mohave County, AZ.</p> <p>The effective FIS for San Bernardino County lists a regulatory base flood elevation of 463.90 feet. This design uses the more conservative elevation of 464 feet as the base flood elevation for the project on the California side of the Colorado River. The vertical datum for all flood elevations shown on the San Bernardino County FIRM is NAVD88.</p> <p>The effective FIS for Mohave County lists a regulatory base flood elevation of 465.3 feet NAVD. This is used as the base flood elevation for the project on the Arizona side of the Colorado River. The vertical datum for all flood elevations shown on the Mohave County FIRM is NAVD88.</p> <p>In this 60% design, certain infrastructure (piping) cannot be located outside of 100-year floodplain as defined by the above baseline flood elevation. PG&amp;E will work with San Bernardino County and Mohave County Flood Administrator to ensure compliance with the county requirements for construction in the floodplain.</p>	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C of this BOD Report for the 90% design.</p> <p>The 100-year floodplain is defined in the Flood Insurance Rate Map (FIRM), Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008, and Panel 5675 of 6700 for Mohave County, Arizona and Unincorporated Areas, Revised November 18, 2009 (Map Number 04015C5675G). The base flood elevation shown on the current FIRM is 464 at River Mile (RM) 234 of the Colorado River. A review of the Mohave County Flood Insurance Study (FIS) shows that this elevation is specific to the California side of the River only, and is different from information found in the newer FIS for Mohave County, AZ.</p> <p>The effective FIS for San Bernardino County lists a regulatory base flood elevation of 463.90 feet. This design uses the more conservative elevation of 464 feet as the base flood elevation for the project on the California side of the Colorado River. The vertical datum for all flood elevations shown on the San Bernardino County FIRM is NAVD88.</p> <p>The effective FIS for Mohave County lists a regulatory base flood elevation of 465.3 feet NAVD. This is used as the base flood elevation for the project on the Arizona side of the Colorado River. The vertical datum for all flood elevations shown on the Mohave County FIRM is NAVD88.</p> <p>In the 90% design, certain infrastructure (piping) cannot be located outside of 100-year floodplain as defined by the above baseline flood elevation. PG&amp;E has worked with Mohave County Flood Administrator to ensure compliance with the county requirements for construction in the floodplain.</p>

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
43	Arizona Location-Specific	Archeological Discoveries - A.R.S. § 41-841 through 847	ARAR	This Act prohibits any person from knowingly excavating on Arizona State or State agency owned land which is a historic or prehistoric ruin, burial ground, archaeological or paleontological site. These requirements will apply if the selected remedy involves excavation in Arizona.	Only if remedy in Arizona - Discovery of any archaeological, paleontological or historical site or object (including human remains) that is at least fifty years old	PG&E	PA, CHPMP, Construction/ Remedial Action Work Plan	Requirements from the PA and the forthcoming CHPMP (led by BLM) will be adhered to during implementation of the remedy. PG&E will prepare and submit the Construction/Remedial Action Work Plan.	Requirements from the PA and the CHPMP (led by BLM) will be adhered to during implementation of the remedy. PG&E will prepare and submit the Construction/Remedial Action Work Plan as part of the 90% design.	Requirements in the PA and the CHPMP will be adhered to. These requirements include implementation of mitigation measures identified in the PA and the CHPMP and through ongoing consultation activities with the Tribes that will avoid, mitigate, or otherwise minimize adverse effects from the undertaking. Tables 6.2-2 and 6.2-3 summarize actions by PG&E to implement the applicable provisions under the PA and the CHPMP.  The Construction/Remedial Action Work Plan was prepared and submitted concurrently with the 90% design on September 8, 2014.
44	Arizona Location-Specific	Historic Preservation - A.R.S. § 41-865	ARAR	This Act restricts any person from disturbing human remains or funerary objects on lands other than lands <sup>2</sup> owned or controlled by the State. These requirements will apply if the selected remedy involves excavation in Arizona.	Only if remedy in Arizona on private lands - Discovery of human remains/funerary objects	PG&E	PA	Requirements from the PA and the forthcoming CHPMP will be adhered to during implementation of the remedy.	Requirements from the PA and the CHPMP will be adhered to during implementation of the remedy.	Requirements in the PA and the CHPMP will be adhered to. These requirements include implementation of mitigation measures identified in the PA and the CHPMP and through ongoing consultation activities with the Tribes that will avoid, mitigate, or otherwise minimize adverse effects from the undertaking. Tables 6.2-2 and 6.2-3 summarize actions by PG&E to implement the applicable provisions under the PA and the CHPMP.

TABLE L1.1-3  
Summary of Compliance with Identified ARARs  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No. <sup>1</sup>	Category <sup>1</sup>	Citation <sup>1,2</sup>	Determination <sup>1,2</sup>	Description in DOI's ARARs Table <sup>1,2</sup>	Triggering Event	Compliance Responsibility	Which existing/ future document(s) will document continued compliance with this ARAR? <sup>4</sup>	Action (Compliance Status)		
								Preliminary (30%) Design	Intermediate (60%) Design	Pre-Final (90%) Design
63	California Location-Specific	<u>Seismic and Floodplain standards</u> -Title 22, CCR, Div 4.5, Ch 14, Article 2, §66264.18	ARAR Relevant and Appropriate	These standards are relevant and appropriate for TSD facilities constructed, operated, or maintained within certain distances of fault lines, floodplains, or the maximum high tide.	Infrastructure in 100-year floodplain/ regulatory floodway	PG&E	Design submittals, Construction/ Remedial Action Work Plan	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C.</p> <p>The 100-year floodplain is defined in the Flood Insurance Rate Map (FIRM), Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008. The base flood elevation shown on the current FIRM is 464 at River Mile (RM) 234 of the Colorado River. The effective Flood Insurance Study (FIS) for San Bernardino County lists a regulatory base flood elevation of 463.90. This design uses the more conservative elevation of 464 as the base flood elevation. Wells and pipelines are included in the preliminary (30%) design in areas of the Colorado River floodplain necessary for capture and treatment of the chromium plume. The infrastructure in this preliminary (30%) design (wells, pipes) is mostly outside the 100-year floodplain, see Sheet C-2, well FP-EX-5.</p>	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C of the BOD report for the 60% design.</p> <p>The 100-year floodplain is defined in the FIRM, Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008. The base flood elevation shown on the current FIRM is 464 at RM 234 of the Colorado River. The effective FIS for San Bernardino County lists a regulatory base flood elevation of 463.90 feet. The vertical datum for all flood elevations shown on the San Bernardino County FIRM is NAVD88.This design uses the more conservative elevation of 464 feet as the base flood elevation.</p> <p>In this 60% design, certain infrastructure (piping) cannot be located outside of 100-year floodplain as defined by the above baseline flood elevation. PG&amp;E will work with San Bernardino County and Mohave County Flood Administrator to ensure compliance with the county requirements for construction in the floodplain.</p>	<p>The groundwater remedial facilities are not a permitted RCRA treatment, storage or disposal facility.</p> <p>Seismic load design criteria and geotechnical design criteria are described in Appendix C of the BOD report for the 90% design.</p> <p>The 100-year floodplain is defined in the FIRM, Panel 5705 of 9400 for San Bernardino County, California and Unincorporated Areas, Revised August 28, 2008. The base flood elevation shown on the current FIRM is 464 at RM 234 of the Colorado River. The effective FIS for San Bernardino County lists a regulatory base flood elevation of 463.90 feet. The vertical datum for all flood elevations shown on the San Bernardino County FIRM is NAVD88.This design uses the more conservative elevation of 464 feet as the base flood elevation.</p> <p>In the 90% design, certain infrastructure (piping) cannot be located outside of 100-year floodplain as defined by the above baseline flood elevation. PG&amp;E has worked with Mohave County Flood Administrator to ensure compliance with the county requirements for construction in the floodplain.</p>

**Notes:**  
<sup>1</sup>Source: Table 2 of the Groundwater Record of Decision, Pacific Gas and Electric Company Topock Compressor Station, Needles, San Bernardino County, California, December 2010 (DOI 2010).  
<sup>2</sup> As corrected by the Department of the Interior.  
<sup>3</sup> The “action” notation in Location-specific ARARs #5 and 7 refers to the DOI Record of Decision (DOI 2010), surnamed by the Bureaus (BLM, BOR, USFWS) and Bureau of Indian Affairs.  
<sup>4</sup> The intent of this column is to identify what current or future document(s) are intended to satisfy this measure and be transparent on future forthcoming documentation. This column is not intended to document compliance with the ARARs.

TABLE L1.1-3A  
**Information for the Havasu National Wildlife Refuge’s Appropriate Use Analysis and Compatibility Determination (AUA/CD)**  
*Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Items listed in DOI’s October 23, 2008 letter “ <i>PG&amp;E Topock Compressor Station Remediation Site – Evaluation of Attainment of Fish and Wildlife Service Location-Specific ARARs for the Proposed Remedial Alternatives</i> ”	Action (90% Design Compliance Status)
What the proposed actions/facilities are – including specifics (such as how many wells, the spacing of wells, detailed sizes/lengths of facilities, etc.)	<p>The 90% design was submitted to DOI on September 8, 2014. Section ES. 3 and Table ES-1 (Summary of Engineering Design Parameters and Key features) of the 90% BOD report provide an executive summary and high level description of the remedy features (wells, pipelines, supporting systems and utilities, structures/buildings, access roads, etc.) including references to specific report figures that show the locations of these features. Detailed descriptions of the remedy features are provided throughout the BOD report, specifically:</p> <ul style="list-style-type: none"><li>• Section 3.2 describes the in-situ remediation system and its configuration including the IRZ wells, the River Bank Extraction Wells, the Inner Recirculation Loop wells, the TCS Recirculation Loop wells, the Freshwater Injection Wells, and the associated pipeline alignment.</li><li>• Section 3.3 describes the source of freshwater, the contingent arsenic treatment system, and freshwater piping conveyance including storage.</li><li>• Section 3.4 describes the remedy-produced water management system.</li><li>• Section 3.5 describes the utilities and other supporting facilities including power supply, SCADA, and structures/buildings to support the remedy.</li><li>• Section 3.6 describes the monitoring network/wells.</li><li>• Section 5 describes the ICs which are also required components of the remedy.</li></ul>
Where the use would be conducted – including specific areas of use, habitat types and acres, key wildlife species that occur there, proportion of refuge or habitat type involved, and other areas affected incidental to use – provide in site maps	Section 2.4 (Other Site Conditions Affecting Design) of the 90% BOD report describes the baseline site conditions that affect remedy design. Among the documented conditions related to ecological resources at the site are surface water quality, USACE/CDFW jurisdictional waters and wetlands, vegetation communities, special status plants, and special status wildlife, avian, and aquatic species. Select maps were provided in Section 2.4 that overlays the remedy features on surveyed ecological resources.
When the use would be conducted—including time of day and year; duration of use; and a timeline of implementing, performing/maintaining, and closing out the actions/facilities	An estimated project schedule is included in Exhibit 7.5-1 in Section 7. Exhibit 7.5-1 provides an estimated timeline for implementing the remedial action through remedy start-up and start of full remedy operations (anticipated June 2019). Consistent with the CMS/FS and Agencies Decision Documents (ROD, Statement of Basis), it is anticipated that this remedy could require 30 years of operations on refuge lands. Per the November 20, 2013 State Water Resources Control Board letter, monitoring on refuge land will be required in order to demonstrate that the water quality objective for arsenic in the receiving groundwater is met “within the earlier of (i) 20 years after achieving the remedial action objective for chromium or (ii) 20 years after ceasing injection of the water containing naturally occurring arsenic at concentrations above the water quality objective.” After the remedial action is complete, the remedy facilities will be decommissioned. An updated project schedule will be included in the 90% design and the future Remedial Action Work Plan.
How the use would be conducted—including techniques and equipment used, the number of people involved, routine operation and maintenance procedures	O&M procedures are described in Volume 1 of the Draft O&M Manual (Appendix L of the 90% BOD Report). Details related to construction of the remedy are included in the Construction/Remedial Action Work Plan, submitted concurrently with the 90% design.
What would be the anticipated impacts—identifying and describing the impacts; citing available sources of information (plans, environmental assessments, narratives, research, state plans, field experience, consultation with others); distinguishing between long-term and short-term impacts; documenting direct, indirect, and cumulative impacts on refuge resources	<p>Section 2.4 (Other Site Conditions Affecting Design) of the 90% BOD report describes the baseline site conditions that affect remedy design. Among the documented conditions related to ecological resources at the site are surface water and wetlands, vegetation communities, special status plants, and special status wildlife, avian, and aquatic species.</p> <p>PG&amp;E, USFWS, and DOI coordinated on the Programmatic Biological Assessment (PBA) for the final groundwater remedy. The Final Groundwater Remedy PBA (CH2M HILL 2014k) was prepared to support informal consultations for actions to be conducted under the remedial action, including activities located on BLM and U.S. Fish and Wildlife Service administered lands. This ESA Section 7 consultation was concluded with receipt of USFWS concurrency letter on July 7, 2014 which preceded the approval of the Construction/Remedial Action Work Plan. Measures outlined in the PBA and associated USFWS determination will be implemented before and during construction activities. Biological completion reports will be submitted to USFWS documenting areas of impacts and monitoring of construction activities.</p> <p>Impact analyses for proposed construction and operation activities are described in the Final Groundwater Remedy PBA (CH2M HILL 2014k) for the action area, and also in the Habitat Restoration Plans for the HNWR lands (CH2M HILL 2014n) and for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o) (these plans are included as appendices to the Construction/Remedial Action Work Plan). Impacts analysis are also described in the EIR Section 4.3.3.3 and include: BIO-1 – Potential Fill of Wetlands and Other Waters of the U.S. or removal of Riparian Habitat; BIO-2 – Direct Disturbance of and Loss of Habitat for Special-Status Birds and Desert Tortoise; and BIO-3 Fish Mortality, Interference with Spawning Habitat, and Other Adverse Effects. Of these, only BIO-1 and BIO-2 are related to the proposed activities. The certified EIR summarizes results from site-specific surveys that were conducted for Southwestern willow flycatcher, Mojave desert tortoise, Yuma clapper rail, and other avian species which were also identified during these surveys. Implementation of the EIR mitigation measures would reduce all of these impacts to a less-than-significant level. Subsequent studies have been conducted to document the type and extent of jurisdictional wetlands and waters of the U.S. (Wetland Delineation Report, Aug 2013); as well as the type and location of rare and protected plants (Floristic Survey Report, Aug 2013) and culturally significant plants (Ethnobotany Survey Report, Aug 2013). Additional survey for lycium and arrowweed was conducted in response to comment #311 DOI-140. Potential impacts to sensitive resources during remedy implementation will be documented as required by the EIR.</p> <p>Additionally, applicable cultural resource mitigation measures included in the Programmatic Agreement (PA) (BLM 2010), Cultural and Historic Properties Management Plan (CHPMP), Cultural Impact Mitigation Program (CIMP), and the EIR Section 4.4 are being and will continue to be implemented to avoid, minimize, or mitigate adverse effects to cultural and historic properties on refuge land.</p>
What mitigation is planned for loss of functional value of refuge while use is in operation	The Construction/Remedial Action Work Plan includes a Habitat Restoration Plan in compliance with the CD, Appendix C (Scope of Work), Article 3. This plan has been prepared to provide information requested by the HNWR for its Appropriate Use Analysis and Compatibility Determination (AUA/CD) regarding planned mitigation for potential loss of functional value of refuge while use is in operation.

TABLE L1.1-3A  
Information for the Havasu National Wildlife Refuge’s Appropriate Use Analysis and Compatibility Determination (AUA/CD)  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Items listed in DOI’s October 23, 2008 letter “PG&E Topock Compressor Station Remediation Site – Evaluation of Attainment of Fish and Wildlife Service Location-Specific ARARs for the Proposed Remedial Alternatives”	Action (90% Design Compliance Status)
How and when the actions/facilities would be closed out—including restoration plans	<p>In addition to the Habitat Restoration Plan described above, a Plan for Decommissioning of Remedy Facilities and Restoration will include procedures for the removal and decommissioning of the groundwater remedy. The Plan will also incorporate planning/approaches for post-remedy restoration (including, but not limited, to a series of photo points). This future Plan will be submitted to DOI within 120 days of DOI’s certification of completion of the remedial action and a determination by DOI that removal of such facilities is protective of human health and the environment.</p> <p>In addition to the plans mentioned above, three other restoration plans also pertain to HNWR lands including the Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (CH2M HILL 2014o), the Aesthetics and Visual Resources Protection and Revegetation Plan (CH2M HILL 2014l), and the Mitigation and Monitoring Plan for Culturally Significant Plants (CH2M HILL 2014p).</p>
What contingency plans will be in place—identifying actions that will be taken should an accident, unintended discharge, etc. occur.	Contingency Plans are described in Volume 3 of the O&M Manual of the 90% BOD report. Additional details on Contingency Plans for the Remedy Construction are included in the Construction/Remedial Action Work Plan.



TABLE L1.1-4  
Summary of Compliance with Applicable Programmatic Agreement (PA) Stipulations  
Operation and Maintenance Manual  
PG&E Topock Compressor Station, Needles, California

Item No.	Reference Location in PA Document	Relevant Excerpt from Document	Triggering Event	Action (Compliance Status)	
				Intermediate (60%) Design	Pre-Final (90%) Design
1	Stipulation I(A)	The Federal Agencies, in consultation with the Tribes, SHPOs, ACHP, PG&E, and other interested parties, agree to select and implement, or cause to be implemented, an alternative or combination of alternatives to remediate the groundwater and soil contamination in a manner that fulfills the requirements of CERCLA and the CERCLA Records of Decision (RODs) and protects the Colorado River, human populations, and the natural environment to the maximum extent practicable.	Implementation of Selected Groundwater Remedy	PG&E is implementing the groundwater remedy selected by DOI and DTSC.	PG&E is implementing the groundwater remedy selected by DOI and DTSC.
2	Stipulation I(B)	The Federal Agencies, in consultation with the Tribes, SHPOs, ACHP, PG&E, and other interested parties, agree to Subject to I(A) above, carry out, and require others under their jurisdiction to carry out, all investigative, testing and remediation activities, including all supporting operations and maintenance activities, in ways that avoid, minimize, or mitigate adverse effects to cultural and historic properties within the APE, to the maximum extent practicable.	Implementation of Selected Groundwater Remedy	PG&E remediation resources specialist (Glenn Caruso) participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with the ongoing in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	PG&E Cultural Resources Expert (Glenn Caruso) participated in field reviews of planned remedial facilities with the design team on April 7-10, 2014. The purpose of these field reviews along with the ongoing in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.
3	Stipulation I(C)	The BLM, USFWS, USBR and PG&E shall consult with the Tribes that attach cultural significance to the TCP within the APE to develop a plan to ensure Tribal access to areas within the APE for religious, cultural, or spiritual purposes. Access shall be consistent with applicable laws, regulations and agreements governing property within the APE and may not impede the Topock Remediation Project, may not create health and safety concerns, and shall exclude the Topock Compressor Station and related facilities.	Development of Access Plan (Tribal Access)	The Tribal Access Plan for lands under federal management was completed on November 26, 2011. PG&E has initiated work on an Access Plan for the lands not under federal management, taking into consideration the information in the BLM Access Plan, for submittal with the final design (target 2013).	The Tribal Access Plan for lands under federal management was completed on November 26, 2011. PG&E has prepared an Access Plan in coordination with Tribes, for the lands not under federal management, taking into consideration the information in the BLM Access Plan. The Access Plan is included in an appendix of the Construction/Remedial Action Work Plan and submitted on September 8, 2014.
4	Stipulation I(D)	The Federal Agencies, in consultation with the Tribes, SHPOs, ACHP, PG&E, and other interested parties, agree to ensure that PG&E shall to the extent practicable restore the areas affected by the Topock Remediation Project within the APE, including, but not limited to, the site of the existing treatment plant and related facilities but excluding the Topock Compressor Station and related facilities, to the conditions existing prior to the construction of the PG&E investigation and remediation related appurtenances and facilities.	Planning for Restoration	The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP, which will be submitted with the 90% Design.	<p>The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration was prepared and submitted as Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan.</p> <p>Section 8 of the Plan includes restoration guidelines (steps to be followed during restoration), elements of the restoration of habitat and revegetation and demobilization, and a draft annotated outline of a future more detailed, site specific IM-3 Restoration Plan.</p> <p>In coordination with the FMIT and other Tribes, PG&amp;E has developed a schedule for developing the more detailed Restoration Plan.</p> <p>PG&amp;E anticipates that some details of the restoration plan, in particular the amount of earthwork and earth movement involved in the restoration, will be deferred to the completion of decommissioning, so that PG&amp;E and the Tribes can evaluate which approach may minimize further disturbance (and may minimize the amount of earth movement) while achieving the required restoration.</p>
4	Stipulation I(E)	The Federal Agencies, in consultation with the Tribes, SHPOs, ACHP, PG&E, and other interested parties, agree to consult with other Signatories, Tribes and Invited Signatories, following the guidelines in Appendix B of this PA, regarding actions proposed in this Undertaking, including establishment of any rights of way, time critical or emergency actions.	Groundwater Remedy Design and Implementation	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol.	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol.

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5	Stipulation II(B)	At each phase (work plan or design document) of implementation of the Undertaking, an evaluation will occur to determine if the APE should be amended. This evaluation will coincide with the development of the work plan or design document for the specific phase of the Undertaking. Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to conduct identification and evaluation efforts (36 CFR §800.4(b)(2)). Prior to implementation of each phase (work plan or design document) of the Undertaking, BLM will determine, in consultation with the AZ SHPO, CA SHPO, Tribes, and PG&E, what, if any, changes are required in the APE. If BLM determines that the APE must be revised, BLM will redefine the APE taking the input from those parties into account. Should such revision to the APE be needed, BLM will amend the CHPMP to include any changes to the APE.	Groundwater Remedy Design and Implementation	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol, including on the APE.	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol, including on the APE.
6	Stipulation III(B)(1), III(B)(2)(a) - Remediation of GW contamination	Should Alt E be selected, the Federal Agencies will ensure that, consistent with the general principals in Stipulation I, existing monitoring wells and related facilities shall be used to the maximum extent practicable.	Implementation of Selected Groundwater Remedy	In the intermediate (60%) design, all existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.	In the pre-final (90%) design, existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.
7	Stipulation III(B)(2)(b) - Remediation of GW contamination	Should Alt E be selected, the Federal Agencies will ensure that, consistent with the general principals in Stipulation I, the need for and placement of any new facilities or activities will be determined in consultation with the Tribes and the Consulting Parties following the guidelines in Appendix B.	Implementation of Selected Groundwater Remedy	The 60% design presented planned facilities and activities for the implementation of the groundwater remedy. BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol.	The 90% design presents planned facilities and activities for the implementation of the groundwater remedy. The Construction/Remedial Action Work Plan includes procedures and protocols to be implemented and contingencies during remedy construction and start-up. The O&M Manual includes procedures for implementation and contingencies during operation and maintenance of the remedy. BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol, and will consult the Tribes on the Construction/Remedial Action Work Plan and O&M Manual.
8	Stipulation III(B)(2)(c) - Remediation of GW contamination	Should Alt E be selected, the Federal Agencies will ensure that, consistent with the general principals in Stipulation I, that new facilities or activities be placed in areas already disturbed by previous grading or other mechanized activities to the maximum extent practicable, consistent with protecting human health and the environment and achieving cleanup in a timely manner.	Implementation of Selected Groundwater Remedy	<p>The design has been and is carried out in a manner that gives: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including IM-3 facilities. A disturbed area map was prepared in compliance with an EIR mitigation measure (CUL-1a-9), to facilitate placement of infrastructure; a current version of the map is included in Appendix A2 of the 60% Basis of Design (BOD) Report.</p> <p>In addition, in compliance with the directive to give priority to re-use of existing physical improvements and to previously disturbed areas for new physical improvements, the intermediate (60%) design proposes the following:</p> <ul style="list-style-type: none"><li>• All existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.</li><li>• The freshwater supply for the remedy will be the existing HNWR-1 well.</li><li>• The freshwater supply storage will be the existing water</li></ul>	<p>The design has been and is carried out in a manner that gives: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including IM-3 facilities. A disturbed area map was prepared in compliance with an EIR mitigation measure (CUL-1a-9), to facilitate placement of infrastructure; an updated version of the map is included in Appendix A2 of the 90% Basis of Design (BOD) Report.</p> <p>In addition, in compliance with the directive to give priority to re-use of existing physical improvements and to previously disturbed areas for new physical improvements, the pre-final (90%) design proposes the following:</p> <ul style="list-style-type: none"><li>• All existing monitoring wells have been incorporated into the monitoring well network for the remedy, thereby reducing the need for drilling new monitoring wells.</li><li>• The piping corridor is located almost entirely in existing roadways, right of ways and previously disturbed areas.</li><li>• Most of the existing access roads have been incorporated</li></ul>

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				Intermediate (60%) Design	Pre-Final (90%) Design
				storage tanks at the Compressor Station. <ul style="list-style-type: none"><li>The remedy-produced water treatment plant and freshwater pre-injection treatment system will be located entirely within the footprint of Compressor Station.</li><li>The central maintenance facility for the remedy will be located entirely on PG&amp;E property, at the Transwestern Bench. By centralizing maintenance functions into one location, this reduces the footprint of remedy structure outside of PG&amp;E property.</li></ul>	into the 90% design. <ul style="list-style-type: none"><li>The remedy-produced water conditioning plant and the contingent systems (arsenic treatment and dissolved metals removal) are located entirely within the footprint of the Compressor Station.</li><li>The operation building and carbon storage/amendment facilities are located on the existing Transwestern Bench and MW-20 Bench.</li><li>All of the proposed soil storage and construction staging areas are located on previously disturbed areas.</li><li>The main construction headquarter and staging area is located on previously disturbed areas at Moabi Regional Park.</li></ul>
9	Stipulation III(B)(2)(e) - Remediation of GW contamination	Should Alt E be selected, the Federal Agencies will ensure that, consistent with the general principals in Stipulation I, the performance of all field activities in support of the remedy shall be executed in such a way as to avoid and/or minimize adverse effects to cultural and historic properties to the maximum extent practicable.	Implementation of Field Activities in Support of the Groundwater Remedy	The planning of field activities is executed under the guidance of PG&E remediation resources specialist (Glenn Caruso). The implementation of field activities is performed in accordance with approved work plans and under the monitoring of Archaeological Monitor(s). Tribal Monitors are invited to observe ground-disturbing field activities.	The planning of field activities is executed under the guidance of PG&E Cultural Resources Expert (Glenn Caruso). The implementation of field activities is performed in accordance with approved work plans and under the monitoring of Archaeological Monitor(s). Tribal Monitors are invited to observe ground-disturbing field activities.
10	Stipulation III(B)(2)(f) - Remediation of GW contamination	Should Alt E be selected, the Federal Agencies will ensure that, consistent with the general principals in Stipulation I, subject to Stipulation I(A), direct, indirect and cumulative adverse effects shall be considered and mitigated.	Implementation of Selected Groundwater Remedy	Adverse effects are being considered and mitigated through the implementation of the measures included in the PA, the CHPMP and the EIR.	Adverse effects are being considered and mitigated through the implementation of the measures included in the PA, the CHPMP and the EIR.
11	Stipulation III(B)(3)(a) - Remediation of GW contamination – Final Design	Consultation between the Signatories, Tribes and Invited Signatories shall be initiated prior to final design and implementation of that alternative.	Design and Implementation of Selected Groundwater Remedy	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol.	BLM has consulted and is continuing to consult with the Tribes regarding the design under the PA’s Consultation Protocol.
12	Stipulation III(B)(3)(b) - Remediation of GW contamination – Final Design	Every effort should be made to avoid and minimize adverse effects in accordance with the general principles set forth in Stipulation I.	Implementation of Selected Groundwater Remedy	PG&E remediation resources specialist (Glenn Caruso) participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with the ongoing in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.	PG&E Cultural Resources Expert (Glenn Caruso) participated in field reviews of planned remedial facilities with the design team on April 7-10, 2014. The purpose of these field reviews along with the ongoing in office reviews is to ensure that the footprints of planned facilities are designed in ways to avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible.
13	Stipulation III(B)(3)(c) - Remediation of GW contamination	Whatever the selected alternative, the Federal Agencies will consult with all Signatories, Tribes, and Invited Signatories during the design, implementation, and monitoring activities to determine how best to restore the areas affected by the Topock Remediation Project. These areas will include, but not be limited to, the site of the existing treatment plant and related facilities but will exclude the Topock Compressor Station and related facilities. The Federal Agencies will ensure that environmental restoration to the conditions existing prior to the construction of the Project, is planned and conducted to the extent practicable.	Implementation of Selected Groundwater Remedy	The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP, which will be submitted with the 90% Design. Additionally, a Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning, and BLM will consult the Tribes on this Plan.	The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration was prepared and submitted in Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan.  A site-specific Plan for Decommissioning and Restoration of remedy facilities will be submitted in the future (within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment), prior to decommissioning, and BLM will consult the Tribes on this Plan.

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14	Stipulation V(A)	All facilities and appurtenances related to the Topock Remediation Project are to be removed as soon as practicable upon attainment of cleanup standards and a determination by DOI that removal of such facilities is protective of human health and the environment. All such removal will be planned in consultation with the Signatories, Tribes, and Invited Signatories, following the guidelines in Appendix B [Consultation Protocol].	Planning for decommissioning	This stipulation will be adhered to in planning for the decommissioning of remedy facilities. Additionally, a Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning, and BLM will consult the Tribes on this Plan.	This stipulation will be adhered to in planning for the decommissioning of remedy facilities. A site-specific Plan for Decommissioning and Restoration of remedy facilities will be submitted in the future (within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment), prior to decommissioning, and BLM will consult the Tribes on this Plan.
15	Stipulation V(B)	The removal of such facilities shall be monitored following the monitoring guidelines in Appendix C.	Planning for decommissioning	This stipulation will be adhered to in planning for the decommissioning of remedy facilities.	This stipulation will be adhered to in planning for the decommissioning of remedy facilities.
16	Stipulation V(C)	The removal of such facilities shall take place along existing graded roads to the maximum extent practicable.	Planning for decommissioning	This stipulation will be adhered to in planning for the decommissioning of remedy facilities.	This stipulation will be adhered to in planning for the decommissioning of remedy facilities.
17	Stipulation V(D)	Prior to decommissioning of any remediation facility, the Federal Agencies will consult with all Signatories, Tribes, and Invited Signatories during the development of the closure plan to determine how to best restore the areas affected by the Topock Remediation Project, including but not limited to, the site of the existing treatment plant and related facilities, but excluding the Topock Compressor Station and related facilities, to ensure that environmental restoration of conditions existing prior to the construction of the Project, is achieved to the extent practicable.	Planning for decommissioning	This stipulation will be adhered to in planning for the decommissioning of remedy facilities. The Closure Plan for Decommissioning of Remedy Facilities and Restoration will be submitted in the future, prior to decommissioning, and BLM will consult the Tribes on this Plan.	This stipulation will be adhered to in planning for the decommissioning of remedy facilities. A site-specific Plan for Decommissioning and Restoration of remedy facilities will be submitted in the future (within 120 days of DOI’s certification of remedial action completion and a determination by DOI that removal of such facilities is protective of human health and the environment), prior to decommissioning, and BLM will consult the Tribes on this Plan.
18	Stipulation V(E)	PG&E will draft a plan for decommissioning, removal and restoration of the IM-3 facility prior to implementation of the groundwater remedy, in consultation with all Signatories, Tribes and Invited Signatories.	Groundwater Remedy Design	This stipulation will be adhered to during design. The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP, which will be submitted with the 90% Design. The Plan will be drafted in consultation with all Signatories, Tribes and Invited Signatories.	PG&E has developed the plan for the decommissioning and removal of the IM-3 Facility and Site Restoration, in consultation with the Tribes. The Plan is submitted in Appendix B of the CIMP and also as an appendix of the Construction/Remedial Action Work Plan.

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19	Stipulation IX(A)-(D)	A. If the Undertaking affects a previously unidentified cultural and/or historic resource, including human remains and/or associated funerary objects or graves, or affect such resources in a way not previously anticipated, or have greater adverse effect than previously anticipated, all work in the vicinity of the discovery shall cease. No further action will be taken until the BLM, in consultation with Tribal and Archaeological Monitors and PG&E in the field, has determined the nature of the discovery and delineated an area not to exceed 50 meters from the approximate center point of the discovery (or a smaller or larger areas if warranted by specific circumstances) in which no further work is to take place until treatment of the discovery is resolved. At such point BLM will notify all Signatories, Tribes, and Invited Signatories of the nature and general location of the discovery. The BLM will implement appropriate measures, including stabilization or covering, to protect any discovery (human remains, funerary objects, sacred objects, or objects of cultural patrimony) from further disturbance in accordance with the principles set forth in Stipulation I. Ongoing work not within 50 meters (or a smaller area if determined appropriate by parties in the field) of the discovery may continue. If human remains and/or associated funerary objects compose all or part of the discovery, then BLM shall ensure the stipulations of the POA included in the CHPMP, as described in Stipulation VII (H) hereof, will be completed. Also, if human remains and/or funerary objects are encountered, all activities shall follow the procedures and direction provided in NAGPRA and California Public Resources Code sections 5097.98 and 5097.991. For Arizona, such activities shall follow the procedures and direction provided in NAGPRA and applicable state laws, including the Arizona Antiquities Act of 1927 (ARS § 41-841 to 41-846), Burial Protection Law of 1990 (ARS §41-865), and ARS §41-844 of 1990.	Field Implementation of Selected Groundwater Remedy	This stipulation will be adhered to during the field implementation of the Construction/Remedial Action Plan. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.	This stipulation will be adhered to during the field implementation of the Construction/Remedial Action Plan and during the operation and maintenance of the remedy. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.

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20	Stipulation IX(A)-(D) (continued)	<p>B. If the Tribes, PG&amp;E, and BLM can resolve treatment of the discovery in a manner that does not cause adverse effects to significant cultural and historic properties, BLM shall document the resolution, the activities within the work area may proceed and the AZ SHPO and the CA SHPO shall be notified of the discovery and resolution. The Tribes, PG&amp;E, and BLM will use their best efforts to resolve treatment as quickly as possible.</p> <p>C. If there is failure to resolve treatment of the discovery in consultation with the Tribes and PG&amp;E, BLM shall then consult with the AZ SHPO or the CA SHPO to develop a treatment plan that takes into account the effects of the Undertaking on the discovery. Within fifteen (15) days of notification of discovery, BLM shall provide the consulted SHPO(s), via email, a recommendation for resolving the discovery situation that takes into account the potential effects of the Undertaking on the discovery.</p> <p>D. If the CA SHPO or AZ SHPO (as appropriate, depending on the location of the discovery) does not object to BLM’s recommendation(s) within fifteen (15) days, BLM will implement the recommendation(s). If the consulted SHPO objects to the recommendation, BLM will utilize the dispute resolution process in Stipulation XV of this PA to resolve any objection.</p>	Field Implementation of Selected Groundwater Remedy	This stipulation will be adhered to during the field implementation of the selected groundwater remedy.	This stipulation will be adhered to during the field implementation of the selected groundwater remedy.
21	Appendix C Monitoring Protocol	Cultural sensitivity training will be required of all staff, workers and contractors engaged in activities in the Topock Remediation Project APE to familiarize them with the sacred nature of the areas so that they will perform their job in a respectful manner. This training will also be given to new personnel before they are allowed to do fieldwork within the APE. This training will be conducted by PG&E with participation by Tribes and Tribal Monitors, Archaeological Monitors, Federal Agency staff, and PG&E supervising staff, as appropriate. Consistent with PG&E’s stated policy, PG&E will not tolerate any disrespectful behavior in the field and will remove any staff, workers or contractors who do not comply with this section.	Implementation of Selected Groundwater Remedy	Site orientation and the training on cultural/historical resources sensitivity will be provided at the project initiation meeting, to be held at the Topock Compressor Station. Site orientation will stress that all site activities will be conducted in a respectful manner. Sensitivity training will be provided by PG&E Site Operations Manager, PG&E Remediation Resources Specialist, and PG&E will invite participation from the Tribes, archaeological monitors, and agency staff, as appropriate. In addition, PG&E and Tribes are collaborating on a similar measure under the CIMP, and to produce a training/education manual to educate workers. This CIMP measure was discussed with interested Tribes at the monthly meeting on April 26, 2012, August 23, 2012 and September 19, 2012.	Site orientation and the training on cultural/historical resources sensitivity will be provided at the project initiation meeting, to be held at the Topock Compressor Station. Site orientation will stress that all site activities will be conducted in a respectful manner. Sensitivity training will be provided by PG&E’s Site Operations Manager, and PG&E Cultural Resources Expert. PG&E will invite participation from the Tribes, archaeological monitors, and agency staff, as appropriate.
22	Appendix C Monitoring Protocol	Prior to execution of the PA for the Undertaking, PG&E sometimes invited the Tribes to be present on site during construction to monitor and observe non-maintenance grading, trenching, or other excavation for any facilities, new roads, or other project components related to the Undertaking which may have had the potential to adversely impact cultural and historic resources. The Tribal and Archaeological Monitors shall both be invited to monitor such field work.	Implementation of Field Activities	This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project.	This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. In addition, a similar measure under the CIMP (CUL-1a-8I) will also be adhered to during field implementation. The CIMP is included in an appendix of the Construction/Remedial Action Work Plan.

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23	Appendix C Monitoring Protocol	<p>This Protocol specifies ways in which the Tribes, BLM, and PG&amp;E may ensure that:</p> <ol style="list-style-type: none"><li>1. Tribes, BLM, and PG&amp;E, each are kept well informed of Undertaking activities and outcomes;</li><li>2. Tribal and Archaeological Monitors have the opportunity to alert PG&amp;E's site supervisor (or designee) to potentially sensitive areas or issues that Monitors may be aware of or may become aware of while fieldwork is in progress;</li><li>3. PG&amp;E's site supervisor (or designee) notifies BLM of potentially complicated situations. These situations may include discovery of a new cultural or historical resource, damage to a previously recorded cultural or historical resource, or unanticipated effects identified;</li><li>4. Tribal concerns regarding work activities are addressed while fieldwork is in progress.</li></ol>	Implementation of Field Activities	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p>	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p> <p>In addition, a similar measure under the CIMP (CUL-1a-8l) will also be adhered to during field implementation. The CIMP is included in an appendix of the Construction/Remedial Action Work Plan.</p>
24	Appendix C Monitoring Protocol (Work Schedule)	<p>Tribal and Archaeological Monitors will be provided with anticipated schedules for Topock Remediation Project work that requires monitoring as early as possible but at least three (3) business days in advance of the initiation of the identified project work, whenever possible. Recognizing that changes to the work schedule may be inevitable, any change in the work schedule will be provided to the Tribal and Archaeological Monitors as soon as possible after the change becomes part of the work schedule. If there is a question regarding need for a monitor, the questioning party shall consult the BLM Project or Field Manager who will make the final determination of need.</p>	Implementation of Field Activities	<p>This stipulation will be adhered to during field implementation. The PG&amp;E Site Operations Manager or his designee will provide the work schedule and inform the monitors of schedule changes as soon as practicable.</p>	<p>This stipulation will be adhered to during field implementation. The PG&amp;E Site Operations Manager or his designee will provide the work schedule and inform the monitors of schedule changes as soon as practicable.</p> <p>In addition, a similar measure under the CIMP (CUL-1a-8j) will also be adhered to during field implementation. The CIMP is included in an appendix of the Construction/Remedial Action Work Plan.</p>
25	Appendix C Monitoring Protocol (Discoveries)	<p>If the Undertaking will affect previously unidentified resources, or affect a previously recorded cultural or historical resource in a way not previously anticipated, or have greater or different effects than previously anticipated, all work having potential for adverse affect shall cease within a fifty (50)-meter radius (or a smaller or larger area if determined appropriate by the BLM, the Monitors, and PG&amp;E in the field) of the point of discovery. The Archaeological and Tribal Monitors will work with BLM and PG&amp;E to ensure that the PA requirements of Stipulation VII (CHPMP) and Stipulation IX (Discoveries) are met.</p>	Implementation of Field Activities	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p>	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p>
26	Appendix C Monitoring Protocol (Human Remains)	<p>If the Undertaking affects previously unidentified human remains and/or associated funerary objects or graves, or affects such resources in a way not previously anticipated, or has greater adverse effect than previously anticipated, all work in the vicinity of the discovery shall cease. No further action will be taken until the BLM, in consultation with Tribal and Archeological Monitors and PG&amp;E in the field, has determined the nature of the discovery and delineated an area not to exceed 50 meters from the approximate center point of the discovery (or a smaller or larger area if warranted) in which no further work is to take place until treatment of the discovery is resolved.</p>	Implementation of Field Activities	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p>	<p>This stipulation will be adhered to during field implementation. Tribal monitors will be invited to monitor ground-disturbing field activities. Archaeological monitoring will also be conducted during ground disturbing portions of the project. Applied Earthworks, a professional cultural resources consulting firm, was retained by PG&amp;E with DTSC approval. Applied Earthworks will observe ground-disturbing activities and will have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered.</p>

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Item No.	Reference Location in PA Document	Relevant Excerpt from Document	Triggering Event	Action (Compliance Status)	
				Intermediate (60%) Design	Pre-Final (90%) Design
27	Appendix C Monitoring Protocol (Safety)	Tribal and Archeological Monitors will be required to meet with PG&E’s site supervisor prior to initiating monitoring activity and will be required to obtain any applicable training required under 29 CFR 1910.120 and 40 CFR 300.150. The PG&E site supervisor will identify the safety and logistical guidelines that are appropriate for the monitoring activity. Tribal and Archaeological Monitors are invited to attend the safety meetings at the start of each workday or new work task. If the Monitors do not attend this meeting, they will be instructed about the safety concerns of the day by a PG&E representative. Tribal and Archaeological Monitors will be expected to wear all personal protective equipment specified by PG&E's site supervisor and required of other similarly situated field workers. Tribal and Archaeological Monitors will be expected to actively participate to enhance the safety of themselves and the other workers onsite by communicating with PG&E's site supervisor if any safety concerns are identified. Due to safety considerations at the Project site, Tribal and Archaeological Monitors will also be prohibited from conducting any monitoring within designated construction exclusion zones, unless otherwise authorized by PG&E. Such zones are to be clearly delineated to the Tribal and Archaeological Monitors by PG&E's site supervisor. In these situations, other efforts to provide alternative methods for accommodating Monitors including, but not limited to, high-powered binoculars, spotting scopes, or other vision enhancement tools or alternative viewing platforms will occur.	Implementation of Field Activities	During the project initiation meeting or at similar venues (as appropriate), the PG&E Site Operations Manager or his designee will identify the safety and logistical guidelines that are appropriate for the monitoring activity. Tribal and Archaeological Monitors will be invited to attend the safety meetings at the start of each work day or new work task. If they do not attend, they will be instructed of the safety concerns of the day by PG&E.	During the project initiation meeting or at similar venues (as appropriate), the PG&E Site Operations Manager or his designee will identify the safety and logistical guidelines that are appropriate for the monitoring activity. Tribal and Archaeological Monitors will be invited to attend the safety meetings at the start of each work day or new work task. If they do not attend, they will be instructed of the safety concerns of the day by PG&E.



TABLE L1.1-5  
**Summary of Compliance with Applicable Cultural and Historic Property Management Plan (CHPMP) Provisions**  
*Operation and Maintenance Manual*  
*PG&E Topock Compressor Station, Needles, California*

Item No.	Reference Location in CHPMP Document	Relevant Excerpt from Document	Action (Compliance Status)	
			Intermediate (60%) Design	Pre-Final (90%) Design
1	Section 6.2	Measures and principles to avoid, minimize, or resolve adverse effects include the following: <ul style="list-style-type: none"><li>Existing monitoring wells and related facilities shall be used to the maximum extent practicable.</li><li>The need for and placement of any new facilities or activities will be determined in consultation with the Tribes and the Consulting Parties following the Guidelines in Appendix B.</li><li>New facilities or activities will be placed in areas already disturbed by previous grading and other mechanized activities to the extent practicable, consistent with human health and the environment and achieving cleanup in a timely manner.</li><li>The performance of all field activities in support of the remedy shall be executed in such a way as to avoid and/or minimize adverse effects to cultural and historic properties to the maximum extent practicable.</li><li>Subject to Stipulation I(A) above, direct, indirect and cumulative impacts shall be considered and mitigated.</li></ul>	See responses to PA Stipulations I(B), III(B)(1), III(B)(2)(a)-(c), (e) and (f) in Table 6.2-2.	See responses to PA Stipulations I(B), III(B)(1), III(B)(2)(a)-(c), (e) and (f) in Table 6.2-2.
2	Section 6.2.3	Refers to the requirement in the PA Stipulation V(E) and PG&E’s 2006 Settlement Agreement with the Fort Mojave Indian Tribe that a plan will be prepared for the decommissioning, removal and restoration of the IM-3 facility prior to implementation of the groundwater remedy, in consultation with all Signatories, Tribes and Invited Signatories. Additionally, PG&E will remove all other remediation facilities and appurtenances related to the Topock Remediation Project as soon as practicable following the attainment of cleanup standards and a determination by DOI that the removal of these facilities is protective of human health and the environment.	See responses to PA Stipulations V(A)-(E) in Table 6.2-2.	See responses to PA Stipulations V(A)-(E) in Table 6.2-2.
3	Section 6.3	“Environmental Restoration” refers to the restoration obligations in the Programmatic Agreement and the Consent Decree, including that PG&E draft a plan for decommissioning, removal, and restoration of the IM-3 facility and a Remedy Decommissioning Plan that will address post-remedy restoration of the site.	See responses to PA Stipulations I(D), III(B)(3)(c), and V(D)-(E) in Table 6.2-2.	See responses to PA Stipulations I(D), III(B)(3)(c), and V(D)-(E) in Table 6.2-2.
4	Section 6.6.3	“Avoidance Measures/Management Thresholds” provides that: “The primary means for achieving avoidance will be through careful planning and placement of project facilities and installation of temporary barrier fences around significant cultural and historic properties. Metal fence posts and orange mesh all-weather fabric will be used, unless other appropriate materials are identified as preferable, for temporary fencing and will be regularly inspected and maintained. Permanent post-and double cable fencing may be required in high traffic areas. An archaeologist and/or Tribal representative(s) will clearly delineate the sensitive areas to be avoided by construction and supervise fence installation. Project personnel will be notified that fenced locations are to be completely avoided.”	See responses EIR MMRP CUL-1a in Table 6.1-1. PG&E remediation resources specialist (Glenn Caruso) participated in field reviews of planned remedial facilities with the design team on April 23-24 and June 20, 2012. The purpose of these field reviews along with in office reviews is to ensure that the footprints of planned facilities are designed, in ways that avoid, minimize, and mitigate significant adverse effects to historically significant cultural and historic resources.	See responses to EIR MMRP CUL-1a in Table 6.1-1. PG&E’s steps to prevent and reduce inadvertent damage are outlined in the CIMP Protocol for CUL-1a-8n: Protocols for protective measures for archaeological/historical sites during construction (Section 2.14 of the CIMP). In this protocol, PG&E outlines pre-construction measures to be taken to identify sites requiring protection, pre-construction identification of protective measures, and procedures for installation and removal of the protective measures, and restoration of the area to pre-construction conditions. Further, under the CHPMP requirements at Section 6.6.5 Periodic Site Monitoring, PG&E has proposed a monitoring and condition assessment program in the 2013 monitoring report (AE 2014) and submitted for DTSC review.
5	Section 6.6.4	Construction Monitoring Monitoring of all earth-disturbing Project activities will be in accordance with Appendix C of the PA (Tribal and Archaeological Monitoring Protocol). Qualified archaeological and Tribal monitors will be notified in advance and invited to be on site during earth-disturbing construction activities (grading, trenching, boring, drilling, or other excavation) for new injection, extraction or monitoring wells, new pipelines, new treatment facilities, new access roads, new staging areas, other new transportation facilities, or other new Project components. Due to safety considerations at the Project site, Tribal and archaeological monitors will comply with all safety requirements.	See responses to PA Appendix C, Monitoring Protocol in Table 6.2-2. See also EIR MMRP CUL-1a-8(I).	See responses to PA Appendix C, Monitoring Protocol in Table 6.2-2. See also EIR MMRP CUL-1a-8(I).
6	Section 6.6.5	Periodic Site Monitoring Sound management of the archaeological and historical properties requires that any progressive degradation of sites be identified. Additionally, it is recognized that a mechanism is needed to identify any accidental damage that may occur. To accomplish these goals, PG&E will develop a proposal describing a program of periodic site monitoring and condition assessment. BLM, following consultation with the Tribes and other appropriate parties, will approve any monitoring program before implementation by PG&E. The program will include all historic properties within the APE. Any previously unknown properties that may be encountered during the Project also will be included in the monitoring program unless such properties are evaluated as ineligible. During its initial phase, periodic monitoring and condition assessment will consist of annual field visits to monitor site conditions and disturbances	As part of the 2004 Cultural Resources Management Plan, Applied Earthworks conducted quarterly monitoring the first year and since then (2005 – 2012) annual monitoring and condition assessment.	PG&E has proposed a monitoring and condition assessment program in the 2013 monitoring report (AE 2014) and submitted for DTSC review.

TABLE L1.1-5  
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7	Section 6.8	“Protocols for Tribal and Archaeological Monitoring” states that monitoring for the Project will be performed in accordance with the PA’s Appendix C (Tribal and Archaeological Monitoring Protocol).	See responses to PA Appendix C, Monitoring Protocol in Table 6.2-2. See also EIR MMRP CUL-1a-8(I).	See responses to PA Appendix C, Monitoring Protocol in Table 6.2-2. See also EIR MMRP CUL-1a-8(I).
8	Section 6.9	If the Undertaking extends beyond the APE, BLM will determine, in consultation with the PA Signatories, Tribes, and Invited Signatories, what (if any) changes are required in the APE. If BLM determines that the APE must be revised, BLM will redefine the APE, taking into account the advice of the other Consulting Parties. Should such revision to the APE be needed, BLM will amend the CHPMP to include any changes to the APE (BLM et al. 2010:8).	See response to PA Stipulation II(B) in Table 6.2-2.	See response to PA Stipulation II(B) in Table 6.2-2.
9	Section 7.1	<div>1. Physical avoidance of the Topock Maze and associated prehistoric sites.</div> <div>2. To the maximum extent practicable, PG&amp;E will avoid all archaeological sites within the APE and protect all historic properties regardless of their NRHP status. The primary means for accomplishing avoidance will be through careful planning and placement of proposed access routes and drilling sites and by the installation of barrier fences around significant historic properties. A pre-project archaeological survey field verification will be conducted prior to any ground-disturbing activities. Consistent with other phases of work conducted at the Topock Remediation Project site, agency representatives and other stakeholders (including representatives of Native American Indian Tribes involved with the Project) will be invited to the site for a project initiation meeting to discuss various cultural sensitivities associated with the Project.</div> <div>3. Ensure that PG&amp;E shall, to the extent practicable, restore the areas affected by the Topock Remediation Project within the APE, including but not limited to the site of the existing treatment plant and related facilities but excluding the Topock Compressor Station and related facilities, to the conditions existing prior to the construction of the PG&amp;E investigation and remediation related appurtenances and facilities per PA Stipulation I.D.</div> <div>4. Remediation activities that propose the removal or introduction of vegetation on public lands shall be undertaken after coordination with Tribes to assess if culturally significant native plant species are being impacted and if there could be potential visual impacts to the Topock TCP.</div> <div>5. Existing monitoring wells and related facilities shall be used to the extent practicable per PA Stipulation III.B.2(a).</div> <div>6. The need for and placement of any new facilities or activities will be determined in consultation with the Tribes and the Consulting Parties following the Guidelines in Appendix B and per PA Stipulation III.B.2(b).</div> <div>7. New facilities or activities will be placed in areas already disturbed by previous grading and other mechanized activities to the extent practicable, consistent with human health and the environment and achieving cleanup in a timely manner per PA Stipulation III.B.2(c).</div> <div>8. Clay deposits are an important resource identified by the Hualapai in their creation, and may be important as well to other Tribes. Accordingly, BLM, PG&amp;E, and those Tribes that ascribe importance to clay deposits shall meet to identify the clay deposits that are considered a resource and develop a protocol to be followed if such clay deposits are encountered.</div>	<div>See responses to PA Stipulations I(B), I(D), III(B)(1), III(B)(2)(a)-(c) and (e), III(B)(3)(c), and V(D) in Table 6.2-2. See also EIR MMRPs CUL-1a-8(i), AES-1, and AES-2.</div> <div>Regarding Item 4, PG&amp;E does not plan to remove or introduce vegetation on public lands in connection with the remedy; instead, only some trimming of vegetation may be required which will be focused on non-native species (e.g., tamarisk). The trimming of native species (e.g., palo verde and mesquite) will be avoided or minimized to the extent practicable.</div> <div>Regarding Item 8, BLM met with the Hualapai Tribe and PG&amp;E in late 2012 and discussed the Clay Monitoring Protocol. The Hualapai representative indicated that the Hualapai would make the initial draft of this protocol and then send it out for BLM and PG&amp;E to review.</div>	<div>See responses to PA Stipulations I(B), I(D), III(B)(1), III(B)(2)(a)-(c) and (e), III(B)(3)(c), and V(D) in Table 6.2-2. See also EIR MMRPs CUL-1a-8(i), AES-1, and AES-2.</div> <div>Regarding Item 4, PG&amp;E will introduce only native plants grown from local seed sources. These plants will be of the same species as those removed. At this 90% design stage, removal of tamarisk and arrow weed will occur during pipeline construction on the historical floodplain. The remedy design has avoided native trees in this area where they have been observed; however, it is possible that individual palo verde or mesquite trees could occur within the tamarisk thickets that will be affected. Where possible during construction, native trees will be avoided even if this requires additional impacts (i.e., removal or trimming) on tamarisk and arrow weed. There will be locations where impacts to native trees cannot be avoided and those losses will be mitigated according to the nature of the impact and the approaches in the appropriate restoration plan for the HNWR refuge, riparian areas, mature plants, or culturally-significant plants. Mitigation for impacts could include transplantation of likely candidate (younger) trees or replacement planting in a designated restoration area. The northern aerial bridge crossing of Bat Cave Wash is one location where it is currently known that 3 palo verde trees will require removal in order to install the aerial pipe bridge.</div> <div>Regarding Item 8, BLM met with the Hualapai Tribe and PG&amp;E in late 2012 and discussed the Clay Monitoring Protocol. The Hualapai representative indicated that the Hualapai would make the initial draft of this protocol and then send it out for BLM and PG&amp;E to review.</div>
10	Section 7.2	Accommodation of Tribal Activities and Ceremonies Involving the Topock Maze/TCP  The BLM will continue to work with the Tribes to identify Tribal activities and ceremonies that are associated with the Topock TCP. When such activities and ceremonies are identified, BLM will consult with the Tribes and PG&E to develop treatment measures to accommodate them. Treatment measures may address scheduling of Undertaking work to accommodate ceremonial activities and to mitigate audible and visual impacts.	See response to EIR MMRP CUL-1a-8k in Table 6.1-1.	See response to EIR MMRP CUL-1a-8k in Table 6.1-1.
11	Section 7.3	Treatment of other cultural, historical, and archaeological properties within the APE  “The only properties identified within the APE that are not contributing properties to the Topock TCP are the properties from the historic period (i.e., Route 66, the AT&SF Railroad Grade, and National Old Trails Road). None of these properties has been impacted, to date, by this Undertaking. These properties shall be avoided, to the extent practicable, in the implementation of the Undertaking. These properties are periodically monitored for condition assessment to assure that they are being protected.”	See responses to PA Stipulations I(B), III(B)(1), III(B)(2)(a)-(c) and (e) in Table 6.2-2.	See responses to PA Stipulations I(B), III(B)(1), III(B)(2)(a)-(c) and (e) in Table 6.2-2.

TABLE L1.1-5  
**Summary of Compliance with Applicable Cultural and Historic Property Management Plan (CHPMP) Provisions**  
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Item No.	Reference Location in CHPMP Document	Relevant Excerpt from Document	Action (Compliance Status)	
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12	Section 8.1	Discoveries - Steps to be taken if previously unrecorded properties are found	PG&E will follow the procedures specified in Appendix C of the CHPMP (Discovery Plan). See also response to PA Stipulation IX(A)-(D) in Table 6.2-2, and to EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.	PG&E will follow the procedures specified in Appendix C of the CHPMP (Discovery Plan). See also responses to PA Stipulation IX(A)-(D) in Table 6.2-2, and to EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.
13	Section 8.2	Discoveries - Treatment of any human remains, funerary objections, ceremonial objects and items of cultural patrimony	PG&E will follow the procedures specified in Appendix D of the CHPMP (Plan of Action). See also response to PA Stipulation IX(A)-(D) in Table 6.2-2, and to EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.	PG&E will follow the procedures specified in Appendix D of the CHPMP (Plan of Action). See also responses to PA Stipulation IX(A)-(D) in Table 6.2-2, and to EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.
14	Section 8.3	<p>Consultation Procedures Related to Unanticipated Discoveries</p> <ul style="list-style-type: none"><li>• The BLM will notify all Signatories of the PA, Tribes and Invited Signatories of the nature and general location of any discovery. If the Tribes, PG&amp;E and BLM can resolve treatment of the discovery in a manner that does not cause adverse effects to significant cultural and historic properties, BLM shall document the resolution, the activities within the work area may proceed and the AZ SHPO and the CA SHPO shall be notified of the discovery and resolution. The Tribes, PG&amp;E and BLM will use their best efforts to resolve treatment as quickly as possible.</li><li>• If there is failure to resolve treatment of the discovery in consultation with the Tribes and PG&amp;E, BLM shall then consult with the AZ SHPO or the CA SHPO to develop a treatment plan that takes into account the effects of the Undertaking on the discovery. Within fifteen (15) days of notification of discovery, BLM shall provide the consulted SHPO(s), via email, a recommendation for resolving the discovery situation that takes into account the potential effects of the Undertaking on the discovery.</li><li>• If the CA SHPO or AZ SHPO (as appropriate, depending on the location of the discovery) does not object to BLM’s recommendation(s) within fifteen (15) days, BLM will implement the recommendation(s). If the consulted SHPO objects to the recommendation, BLM will utilize the dispute resolution process in Stipulation XV of the PA to resolve any objection.</li></ul>	See response to PA Stipulation IX(A)-(D) in Table 6.2-2. See also EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.	See responses to PA Stipulation IX(A)-(D) in Table 6.2-2 and to EIR MMRP CUL-1a-8(b) and -8(o) in Table 6.1-1.