United States Department of the Interior

BUREAU OF LAND MANAGEMENT
FISH AND WILDLIFE SERVICE
BUREAU OF RECLAMATION

ELECTRONIC SUBMISSION

June 17, 2011

Ms. Yvonne Meeks
Portfolio Manager – Site Remediation
Pacific Gas and Electric Company
4325 South Higuera Street
San Luis Obispo, CA 93401

Subject: PG&E Topock Compressor Station Remediation Site – Federal Comments on the *Draft Corrective Measures Study/Feasibility Study Report for Chromium in Groundwater at the Pacific Gas and Electric Company (PG&E)*, Topock Compressor Station.

Dear Ms. Meeks:

The Department of Interior, on behalf of itself and the Bureau of Land Management, the U.S. Fish and Wildlife Service, and the Bureau of Reclamation (collectively referred to as "DOI"), has completed the review of the *Groundwater Corrective Measure Implementation/Remedial Design Work Plan for SWMU1/AOC1 and AOC10 at PG&E Topock Compressor Station, Needles, California* (CMI/RD Work Plan) dated May 2, 2011. Attached you will find the combined comments on the subject document.

DOI commits to working closely with PG&E, DTSC, and all of the stakeholders to resolve the comments and remaining issues in a timely fashion.

If you have any questions, please contact me at (303) 445-2502.

Sincerely,

Pamela S. Innis

Pamela S. Innis
DOI Topock Remedial Project Manager

Attachment (1)
Cc: PG&E Topock Consultative Workgroup (CWG) Members

DOCUMENT REVIEW AND COMMENT RESOLUTION SHEET

Document Title	**Groundwater Corrective Measure Implementation/Remedial Design Work Plan for SWMU 1/AOC 1 and AOC 10**	**Document Date**	**June 3, 2011**
		Originator, Organization and Phone Number	PG&E/CH2MHILL
Reviewer, Organization, and Phone Number	DOI – Pamela Innis – Topock Project Manager, (303) 445-2502	**Review Criteria**	Technical and CERCLA Compliance

Location	Comment	Comment Response	Accept
General Comment 1	The CMI/RD Work Plan is missing many components required by the DTSC CACA. Under CERCLA, many of the missing components can be included in the preliminary design, as shown in Table 4-5 of the CMI/RD WP. However, the underlying assumption for deferring these submittals to the preliminary design is that the concept for the remedy, including all of its components, has been largely fleshed out. In review of the CMI/RD WP, there are many aspects of the groundwater remedy for Topock that have not been defined at this time. These include carbon substrate for IRZ, piping routes, use of exiting water storage tanks, the expected flow and characteristics of wastewater, wastewater treatment and disposal, source of raw water and power supply, and location of major equipment. It is critical these elements of the groundwater remedy be defined prior to the preliminary design. There will be issues associated with the various options for these elements, and there will need to be consensus on the selected preferred options. To defer the analysis of options and selection of the preferred option for each element to the preliminary design is to run the risk of significant rework of the design that could have been avoided. Therefore, in reference to Exhibit 1-3, DOI requests the following CMI/RD WP requirements that have been deferred to future design submittals be included in this CMI/RD WP: • Design criteria related to carbon substrate for IRZ, power and water supply, and wastewater treatment and disposal; • Design basis related to carbon substrate for IRZ,		

	power and water supply, and wastewater treatment and disposal; • Tables listing number and type of major components with approximate location (dimensions can be deferred to the preliminary design); • Waste management practices; • Required permits (for wastewater treatment and disposal only); • Appendices providing the analysis of options (including the selection of the preferred options) for carbon substrate for IRZ, piping routes, wastewater treatment and disposal, source and conveyance of raw water and, and location of major equipment. Additionally, specific design submittals should be identified in the text, as appropriate, even though to a large extent it is contained in Table 4-5.		
General Comment 2	Please discuss how fundamental factors affecting the design basis, which can significantly impact the design process, will be integrated. These factors may include issues such as: minimizing the impacts to natural and cultural resources, use of land in areas that are already impacted, minimizing the generation of undesirable process by products, waste minimizations, and related direct and indirect impacts.		
General Comment 3	A more accurate schedule for submittal of the key documents required by the CACA, EIR, CERCLA and associated ARARs, the pending Consent Decree and the ROD identified in Table 4-3 needs to be proposed, e,g., submitted with the preliminary design or intermediate design, etc. (See also General Comments on Sections 4.1 and 4.2)		
Section 1.2.4	Although identified on Figure 1-2, the text should explicitly state that the project area as defined by the EIR is encompassed within the Area of Potential Effect (APE) specified in the Programmatic Agreement.		
Section 1.3, Exhibit 1-3	Revise accordingly per General Comment 1.		
Section 2.0 General Comment	This section describes a framework for design and implementation of the remedy. The work plan does not have a consolidated discussion of the overall engineering design process. Table 4-5 indentifies the three design submittals. However, there is no discussion of the underlying principles		

	PG&E will employ between establishing design requirements, how the requirements will be integrated in preliminary design, what information may affect refinement in the intermediate stage, and how the design rationale will be optimized in the final design stage. Please add a description of PG&E's engineering design process to help reviewers understand the rationale that will govern the design process from the feasibility study through design and the eventual expression in the Construction/ Remedial Action Work Plan.		
Section 2.1, 2nd para.	It is stated that the numbers, methods, and configuration of remedy components will change as the remedy moves from the design to the operational phases. Some discussion is needed on how changes to impacts and mitigation measures will be handled and documented considering many of the relevant plans could have already been submitted and approved.		
Section 2.1.1, 1st para.	The organic carbon substrate alternatives assessment should be presented in this document, and the preferred carbon substrate identified. There could be impacts associated with the preferred carbon substrate and there will need to be consensus. See General Comment 1.		
Section 2.1.1, IRZ System Footprint, 2nd para.	The text states that the MW-20 Bench could be used to locate IRZ related structures. Is PG&E evaluating alternatives for locating these structures? If so, is this evaluation critical to the design and construction plan? When does PG&E intend to complete the evaluation? See General Comment 1. The text could be improved with background information and discussion of the significance of the MW-20 Bench and the role this location plays in the project Please call out its location on Figure 2-1a.		
Section 2.1.1, Well Maintenance, 1st para.	This implies that a treatment facility may be located on the MW-20 bench. Further information regarding said treatment facility should be included (i.e., mobile or permanent unit, potential size of unit, etc.). Also, there is no discussion of piping to be used for return of treated water. Additionally, under what conditions would waste water be conveyed to the MW-20 Bench and another location? See General Comment 1.		

Section 2.1.2, 1st para.	It is stated that the extraction wells along the Colorado River are used to capture Cr(VI) that was already beyond the IRZ, and to control the migration of byproducts. Assuming groundwater flows toward the river (a potentiometric surface map has not been provided to verify this assertion), it would appear the river bank extraction well array should be extended to the south to capture contamination at wells MW26 and MW51.		
Section 2.1.2, East Ravine Extraction Wells, 1st para.	Table 6-1 indicates that the East Ravine groundwater investigation will be concluded in the Fall of 2011. Figure 4-1 indicates that the 30% design is to be submitted by September 30, 2011. Incorporating the findings from the investigation into the design would be difficult. Please provide an explanation of the process that will be used to determine design parameters for East Ravine		
Section 2.1.2, page 2-5, 1st para.	The term "Embayment Area" is used in the text for the first time and is not found in other documents. Provide a definition of the "Embayment Area" or clarify the definition found on page 2-6 and include a topographic figure for reference.		
Section 2.1.2, page 2-6, East Ravine Extraction Wells	The text notes that only extraction wells are included for the East Ravine area. The DOI ROD left options open for freshwater injection for flushing and injection of carbon amendments. DOI requests justification for only considering extraction wells, given that the East Ravine Investigation is, at this point, incomplete.		
Section 2.1.3, Fresh Water Production Well(s). 1st para.	Several options are proposed for sources of fresh water. The text should provide the factors that were considered in proposing that the fresh water would be from production wells in Arizona and a preferred option for fresh water should be proposed. See General Comment 1.		
Section 2.1.3 Freshwater Production Wells(s). 1st para.	A summary of the available well information for the proposed fresh water options should be provided. This summary should include well design for current wells and water quality information.		
Section 2.1.3, Fresh Water Production Well(s). 2nd para.	It seems the text is "dancing around" the use of the existing HNWR well as an option for fresh water, although the well is shown on Figure 2-1b. See previous comment and General Comment 1.		
Section 2.1.3, page 2-10 and 11	Further information regarding well rehabilitation methods and details of the chemical use will be required for agency		

	approval. The text should specify which future documents will provide the detail regarding well rehabilitation (presumed O&M manual).		
Section 2.1.3, Fresh Water Injection System Routing, 1st para.	See General Comment 1.		
Section 2.1.3, Fresh Water Injection System Routing, 2nd para.	There needs to be some discussion as to the reasoning behind the "likely route" for fresh water versus the alternate route shown on Figure 2-1a. See General Comment 1.		
Section 2.1.3, Fresh Water Injection System Routing, 1st para.	See General Comment 1 as it pertains to the routing feasibility evaluation.		
Section 2.1.3, page 2-11, first full para.	The California Department of Water Resources standards are noted for decommissioning wells. When considering previous discussions with stakeholders, the agencies may evaluate other options in the future. Modify the text to include "or other approved methods based on ongoing discussions with stakeholders."		
Section 2.1.3, Fresh Water Injection System Operation, 1st para.	There needs to be some discussion on an alternative to the use of the existing fresh water storage tanks above the Compressor Station, since it is only a possibility that the existing tanks could be used. See General Comment 1.		
Section 2.1.3, Fresh Water Injection System Operation, last para.	See General Comment 1 as it pertains to groundwater from Arizona production wells requiring pre-treatment? If a stationary facility is needed, impacts from construction of a water conditioning unit would need to be assessed. Further information should be provided regarding the possible pre-treatment/conditioning options		
Section 2.1.4	It should be noted that the BLM and HNWR management plans only address federal lands. Specific covenants or restrictions for state, county and private lands should be in place during remedy implementation. Detail on these restrictions should be provided in this section.		
Section 2.1.4, last para.	What is the timing for setting up the ICs? ICs are not identified in Table 4-5.		
Section 2.2.2, 1st para.	It is stated that power for the remediation systems will be drawn from the City of Needles electric system, if possible.		

	This needs more discussion. Are we saying larger power lines may be necessary given the expected load, or that the power may not be available if the load is too large? What are the alternatives if power is not available? See General Comment 1.		
Section 2.2.3, page 2-14, first para.	Additional information will be required for treatment, storage and disposal/reuse of waste water. It is not clear what treatment criteria/standards are proposed for the wastewater. This will likely affect the agencies consideration of disposal options. See General Comment 1.		
Section 2.2.3, 2nd para. and follow on bullets	Wastewater treatment and disposal should be identified in the CMI/RD work plan so that impacts can be reviewed and agreed to prior to completing of a 30% design submittal. A conservative estimate of the expected annual volume, with appropriate justification, should be presented in this work plan for preliminary design purposes, rather than a range of 3 to 16 million gallons. It is clear from the information provided that PG&E is providing options will be considered over the life of the groundwater treatment project. This consideration should be discussed in the opening paragraph. The process and timing for the evaluation and selection of the preferred disposal/reuse option(s) for wastewater should be presented in the CMI/RD Work Plan. The five disposal/reuse options will likely have widely varying treatment requirements. The option of discharge to Bat Cave Wash would need to consider the presence of soil contamination in this area. This is particularly critical as the soil investigation is incomplete and impacts from discharge cannot be adequately evaluated at this time. Pending the outcome of the characterization, consideration of this option could limit or alter soil remedial alternatives considered for the wash. Please provide an alternative analysis and propose a preferred alternative. See General Comment 1.		
Section 2.2.3, page 2-14, option 1	The text infers that multiple streams of wastewater with multiple treatment criteria/standards will be generated during operations. Additional information on how PG&E will assess this situation and the general management of these waste streams should be provided for consideration by the agencies.		

	See General Comment 1.		
Section 2.3.1, page 2-16, last para.	It is acknowledged that manganese will be generated as a by-product of the in-situ treatment and information is contained within the CMS/FS regarding calculated manganese levels. PG&E should propose an action level for manganese in this document.		
Section 2.3.1, page 2-16, last para.	It is stated the river monitoring may be conducted. Because RAO #2 is to ensure Cr(VI) concentrations are at or below 11 ug/L, some monitoring is required to provide direct evidence that the RAO is being achieved. Please change may to will in the 5th sentence. Also, provide a listing of constituents that will be considered in river water monitoring and the corresponding surface water quality criteria.		
Section 2.3.1, page 2-17, 1st full para.	It is likely that compliance monitoring within the floodplain area will be at a higher frequency due to the potential generation of by-products and proximity of the Cr(VI) plume to the river. An optional monitoring frequency for the floodplain is proposed in Table 2-1 and should be discussed in this section. Additionally, the text and Table 2-1 should include a discussion and rationale regarding reevaluation of the monitoring system and frequency when significant changes are made during the operational period.		
Figure 2-3	The diagram has two "neutralization" steps. Provide additional information regarding the process occurring in these steps.		
Section 3.1.1, page 3-2, 1st para.	Figure 3-1 should show the potentiometric surface with arrows to denote groundwater flow direction to support the text discussion.		
Section 3.1.1, page 3-2	The phrase "significant quantities of groundwater" may not be appropriate in this context. Typically, that phrase relates to "significance" as a groundwater supply. Bedrock may in fact be a significant contaminant transport pathway, especially in the East Ravine. DOI suggests deletion of this last portion of the sentence		
Section 3.1.1, top of page 3-3	An isopach map of saturated alluvial thickness would be useful to support the discussion in the text.		
Section 3.1.2, 1st para.	The meaning of COPC should be defined in context of its use here. The term COPC can have different meanings depending on its context (risk assessment, compliance assessment, etc.).		

Section 3.2.1, 1st bullet on page 3-8	The feasibility of using the arched bridge for the fresh water pipeline should be presented in the CMI/RD Work Plan so that a 30% design can be prepared for this option, or another option for conveying the water. See General Comment 1.		
Section 3.2.1, 2nd bullet on page 3-8	See comment Section 2.2.2, 1st para.		
Section 3.1.2, 2nd to the last para.	The first sentence implies a listing of monitoring programs that will be used to update baseline maps "… monitoring programs listed below...". No list is provided. Please clarify.		
Section 3.1.2, last paragraph	The work plan addendum was submitted to both DTSC and DOI.		
Section 3.1.4, page 3-6	General water quality parameters should also be monitored to evaluate potential geochemical condition changes that could influence Cr, Mn, and As distributions during remedial action.		
Section 3.2.1, second para.	For clarification, PG&E should include BOR, USFWS and the HNWR in the landowners listing for Arizona. A property ownership map should be included for reference.		
Section 3.2.7	In addition to referencing the new consultation for construction of the groundwater remedy apparatus, PG&E needs to discuss the potential for effects of this project on the Yuma clapper rail. A survey will be required for the clapper rail if construction is likely to occur in marsh habitats.		
Section 4.0 General Comment	This section appears to be developed for the primary purpose of satisfying the EIR mitigation requirements. References to DTSC approvals and determinations occur throughout. A majority of the remedy implementation activities occur on Federal lands and will require review and approval by DOI and the Bureaus input or concurrence. It is recommended that PG&E review this section to assure that DOI approvals appear as appropriate and consultation/coordination with BOR, USFWS/HNWR, and BLM are called out.		
Section 4.0, 1st para.	What aspects of design would overlap construction and startup? According to Figure 4-1, there will be an approved design before any construction activities.		
Section 4.0, page 4-1	The second paragraph discusses regulatory requirements including ARARs. The text indicates that CERCLA requirements are identified in Table 4-2. ARARs however, are not identified in Table 4-2. The text in the second paragraph indicates that ARARs compliance will be addressed through a documentation process.		

	Please expand the discussion in Section 4 to describe how and when action and location specific ARARs, as set forth in the Record of Decision, Table 2 (ROD), will be addressed, how their potential impact on the project will be assessed, and how they will be integrated into the different project implementation phases. Please note we are not asking for an assessment at this time; rather for PG&E to articulate their plan for addressing action and location specific ARARs.		
Section 4.1 General	DOI agrees with the concept of "packaging" documents when it is sensible. However, we request that the packaging be segmented and organized so that review and approval of individual components can be accomplished without intertwining other components in the package. For example, it appears that the IM-3 decommissioning plan is included as a part of the CIMP. It is also part of the Programmatic Agreement and will need to be addressed separately by the federal agencies. In addition to considering by similarity of content and mission; please expand on how the timing (e.g., last bullet on page 4-3) will be addressed to ensure that the Agency's review and approval requirements are accommodated.		
Section 4.2 General	Section 4 identifies many of the documents and deliverables impacting the project. However, the presentation does not provide much discussion of how the requirements of these documents affect project implementation. Please provide an initial "cross walk" or compliance matrix of the major requirements stemming from the key documents during the design phase so that their impact can be anticipated. The crosswalk should then be updated as project definition increases through the construction, operations, and closure phases. In addition to the crosswalk, please provide a preliminary schedule illustrating when the deliverable will be provided relative to the design, construction, and implementation phases. See also General Comments Section 4. and 4.1 above.		
Section 4.0, page 4-1, second para.	It is recommended that the text reference the pending Consent Decree between PG&E and DOI and the Programmatic		

	Agreement and how it may affect design.		
Section 4.2	Much of the information provided within this section is geared toward compliance with the EIR and associated mitigation measures. It is clear that coordination with BLM in their development of the CHPMP and coordination with DOI in specification of stipulation for the remedy must occur. PG&E should, at a minimum, describe how this coordination will occur throughout the process.		
Section 4.2, 1st para.	As noted in the previous comments, there are many analyses that need to be performed and presented in the CMI/RD Work Plan so that a 30% design can proceed without incurring subsequent changes. According to Table 4-5, elements of the preliminary design do not include presentation of the analyses that are yet to be performed. See General Comment 1.		
Section 4.2.1.1	This section should also reference coordination with the CHPMP and PA. For example, the PA references development of a decommissioning and restoration plan for the IM-3 facility as well. Please provide discussion of how CHPMP and PA requirements will be integrated.		
Section 4.2.1.2	Provide detail on how PG&E, DTSC, and BLM are coordinating on the Site Access Plan.		
Section 4.2.1.5	The section references "substantial adverse change". This is clearly in reference to the EIR. A definition of 'substantial adverse change" should be provided for reference.		
Section 4.2.1.7	Clearly coordination with the Federal agencies and the Section 106 process is necessary with respect to potential impacts to cultural/historic properties and consult with SHPO/ACHP and agencies necessary in designing a treatment plan. Please add discussion elaborating on this point.		
Section 4.2.2	USFWS does not anticipate a Programmatic Biological Assessment (PBA) Addendum. Although most of the information in the current PBA is likely still accurate, it is appropriate to submit a new PBA for implementation of the remedy. Also, it is not clear how the plant transplant/monitoring plan is different than the revegetation plan? If PG&E is going to monitor plant success for 5 years after moving/revegetating, performance goals will need to be established to determine success/level of acceptable failure.		
Section 4.4	The 5-year reviews are the responsibilities of the agencies		

	(DTSC and DOI). The purpose of the outline of the 5-year review is unclear. It is suggested that PG&E anticipate their deliverables/activities needed to support the review and provide a listing for agency review/acceptance. PG&E should include a summary of anticipated deliverables including data evaluations, plume maps, progress reports, etc. Activities should include an evaluation of changes since remedy implementation or the previous review such as assumptions regarding remedy byproducts, costs, land use, and plume characteristics.		
Table 4-2	It is not clear if an additional treatability study is planned for the remedy. It is included in the listing of elements under the RDWP.		
Table 4-3	It appears that PG&E intends to include the IM-3 decommissioning plan within the CIMP. This plan is also a part of the Programmatic Agreement. It is recommended that this be a separate document or appendix to the RA Work Plan for approval by both agencies. It is unclear what is meant by a "hazardous materials business plan." Is this similar to a hazardous materials management plan? Many of the documents that are specified as EIR-related documents (highlighted by Note 6) are also required to satisfy CERCLA ARAR. This is not apparent in the text discussion or in the "Road Map". See comment on Section 4.2.2 regarding PBA Addendum.		
Section 6.1, Table 6-1	Table 6-1 identifies a number of activities to be performed in the summer of 2011 that affect the preliminary design, in particular the East Ravine study that is not scheduled to be completed until the Fall of 2011. Figure 4-1 indicates the preliminary design is due September 30, 2011. It does not seem reasonable that the findings from conducting all these activities in the summer can be folded into the preliminary design submittal. Please provide discussion of how the East Ravine groundwater characterization will be integrated into the preliminary (30%) design. Additionally, address the impact on the preliminary		

	design should the East Ravine groundwater investigation be extended and identify a point in the preliminary design phase when the overall design process and project schedule would be adversely affected.		
Section 6.3.2, page 6-4	Please explain this step in more detail. Specifically, what floodplain geochemical data set is being referred to here? Please comment on the calibration step and discuss the general calibration acceptance process (e.g., will calibration criterion be established).		
Section 6.3.3, page 6-4	Please explain this step in more detail. Specifically, what data will be used in the model? Please discuss the general calibration acceptance processes (e.g., will calibration criterion be established).		
Section 7.0, General Comment	The opening statement leads one to believe that the importance of the development of a project management plan is driven only by an imposed requirement (the CACA). Managing a remedial design and remedial action of this scope will require consistent communication and coordination with multiple parties including contractors, the regulatory agencies and stakeholders. The information provided in this section should provide the sequencing and logic for each stage of the project through completion of the final design and initial implementation activities.		
Section 7.3 General	The Project Organization and Management section does not adequately address overall planning, scheduling, and control of the numerous components and dependencies associated with the project. Please describe in Section 7.3 how PGE intends to manage the various institutional, technical, and construction aspects, many of which are likely to be interrelated by dependencies. PG&E should consider the possible benefits a work breakdown structure, network type planning and scheduling system such as Program Evaluation and Review Technique of Critical Path Method (PERT/CPM) to aid in identifying and monitoring critical sequencing and dependencies. PERT/CPM methods are commonly used in construction project management.		
Section 7.3	The Project Organization and Management Section does not address Project Risk Management. There are technical (e.g., discussed in Appendix G in the CMS/FS) and institutional		

	uncertainties (e.g., Stakeholders inputs), and other uncertainties that can have adverse impacts on project success. PG&E should evaluate project risk and consider initiating a risk management activity that will be revisited as project definition increases (Exhibit 1-2). As project definition increases, multiple and cascading effects may emerge that the place the project implementation in jeopardy. Please add discussion in Section 7 acknowledging Project Risk Management and the need to identify critical variables, their impacts, and how they will be addressed as the project definition increases.		
Section 7.3.1	It is clear from the discussion that safety is a priority for PG&E on the Topock project, as it should be and DOI anticipates an opportunity to review the health and safety plans and procedures that will be put into place to ensure protection of all associated with the site. To address protection of the environment, this section only notes implementation of "protocols consistent with EIR mitigation measures and ARARs." This, however, only addresses human health. It is expected that this section would, at a minimum, discuss the plans and procedures that will be put into place to protect of wildlife, indigenous plants, air quality and waterways potentially impacted by the remedy implementation.		
Section 7.3.3	PG&E should also consider opportunities for agencies and stakeholders for site visits during the design stages. These could include visits to the similar remediation facilities (i.e., Hinkley) to facilitate a better understanding of the system layout and potential impacts from remedy implementation,		
Section 7.3.4	ARAR compliance is required for remedy implementation. This section should discuss how PG&E will evaluate and monitor ARAR compliance during remedy development and implementation. Additionally, DOI has recommended that a "checklist" be part of the design documentation to facilitate documentation of ARAR compliance. This section specifies that PG&E will provide information to "DTSC to document implementation and completion of identified mitigation measures". The Programmatic Agreement specifies stipulations for remedy implementation and it is anticipated that the CHPMP and DOI direction for remedy		

	implementation, after Tribal consultation, will identify similar and possibly additional mitigation measures/stipulations that must be addressed for compliance. This should be discussed in Section 7.3.2 and this section.		