Work Variance Request Form

Groundwater Remedy Phase 2 Construction, PG&E Topock Compressor Station, Needles, California

PG&E TOPOCK GROUNDWATER REMEDIATION PROJECT

Work Variance Request #16 – Relocate MW-DD to IM3 Access Road

Request Prepared By: PG&E	Request Approval From: DTSC and DOI
Date Submitted: 9/3/25	Date Approval Required: TBD
Variance Request No.: 16	Map Area: N/A
Location: Upland	

Land Manager: BLM Land Owner Parcel No: 650-151-05

Current Vegetative Cover/Land Use: Floodplain

Existing Sensitive Resource? ☐ No ☒ Yes, Specify: This upland location is in proximity of sensitive cultural resources

Variance From: ☐ Mitigation Measure ☐ Work Plan/Procedure ☐ Response to Comments ☐ Drawing ☐ Permit Condition ☐ Other (Basis of Design Report)

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:

☐ Air Quality	☐ Hazardous Materials	☒ Aesthetic
☐ Biological Resources	☐ Noise	☐ Water Resources
☐ Soils	☐ Paleo Resources	
☐ Cultural Resources	☐ Hydrology and Water Quality	

Description and Justification:

This Work Variance Request (WVR) addresses DTSC's direction to PG&E to relocate MW-DD from the location depicted in the 2015 Basis of Design report to the location on IM3 road, mentioned in DTSC's direction letter on August 4, 2025. Key correspondences pertinent to MW-DD relocation are included in this WVR for ease of reference.

MW-DD will be relocated to avoid adverse effects to culture resources. In addition, relocation of MW-DD to the IM3 road will result in this well being located 150 feet from IRL-3 (the associated freshwater injection location) and also approximately 170 feet from IRL-2 (i.e., within the 225-foot radius). This scenario was not considered in the 2015 Basis of Design report, which details response actions to be taken should arsenic concentrations exceed 10 µg/L at a freshwater arsenic monitoring well (Freshwater DQO-2). The following text, excerpted from the 2015 Basis of Design report (Section 2.2.4 of Appendix L, Volume 2 – Sampling and Monitoring Plan) has been updated (new text shown in <u>underline</u>) to account for potential future ambiguity in the source of the arsenic at MW-DD:

> ***Freshwater DQO-2 Problem Statement: Freshwater injection will be operated to manage migration of arsenic injected from the freshwater source.***
>
> *The decision statement for this DQO is: should injection operations be modified to manage migration of arsenic injected from the freshwater source? The data collection program and decision rules for this DQO are based upon remedy requirements put forth by the State Water Resources Control Board (SWRCB) in a letter dated November 20, 2013 (the State Board letter; SWRCB 2013). The study area for this DQO is the vicinity of the injection wells that receive fresh water. Inputs to the decision are dissolved arsenic concentrations collected from the freshwater arsenic monitoring wells specified in Table 2.1-2. Additional water level data, analytical data, and operational data may also be used. Injection wells that may receive fresh water during the*

course of the remedy include proposed injection wells FW-1, FW-2, IRL-1, IRL-2, IRL-3, and IRL-4. Per the State Board letter, freshwater arsenic monitoring wells are planned as shown on Figure 2.2-1. Details on the locations of the freshwater arsenic monitoring wells are provided in Section 4.2.7.

Decision rules for management of arsenic injected from fresh water are presented on the right side of Figure 2.2-9. If the leading edge of the arsenic plume above the 10 µg/L water quality objective extends more than 150 feet from injection locations receiving fresh water, action will be triggered. First, samples will be collected to verify the detection within 45 days. If the detection is confirmed, the DTSC and DOI will be notified and response actions will be taken. Response actions will include re-assessment of the modeling calculations, with consideration for arsenic data from other wells including other 150-foot freshwater arsenic monitoring wells, in conjunction with an evaluation of interim actions that can be taken to limit migration of the arsenic plume, if needed. These interim actions may include control of arsenic through operational adjustments, such as rebalancing freshwater and river bank water injections (flow rates, number, and/or location of injection wells receiving fresh water versus river bank water), aeration of fresh water prior to injection to reduce arsenic mobility, or triggering of the contingent arsenic treatment system (see Section 2.3 of Volume 3 of this O&M Manual). In the case of a confirmed detection of arsenic greater than 10 µg/L at MW-DD, MW-EE (future provisional freshwater arsenic monitoring well) will be installed at a location that is at least 225 feet from IRL-3 and no closer than 225 feet from IRL-2. A location for MW-EE is shown on Figure 2.2-1.

If dissolved arsenic is detected above the water quality objective of 10 µg/L at a 225-foot monitoring well due to injection of fresh water, then a verification sample will be collected and analyzed within 45 days. If the re-sample result confirms the exceedance, freshwater injection at the corresponding injection location will be shut down within 24 hours of receipt of the confirmation data, the DTSC and DOI will be notified, and the contingency plan will be implemented (Section 2.3 of Volume 3 of this O&M Manual). Implementation of the contingency plan may consist of pre-treatment for arsenic or evaluation of bringing online the contingent freshwater source(s) (Topock-2/-3 and Site B wells).

The attached Figure 2.2-9 from the 2015 Basis of Design report (Appendix L, Volume 2 – Sampling and Monitoring Plan) has been updated for consistency with the above (additions highlighted in yellow). Figure 2.2-1 from the 2015 Basis of Design report (Appendix L, Volume 2 – Sampling and Monitoring Plan) is also attached for reference.

Approval Signatures: 9/3/2025	DTSC partially approves WVR 16 see DTSC letter and FAA 16 for details. Christopher Ioan Christopher Ioan 10/16/2025
PG&E Project Manager Date	Approving Agency Date
	DOI partially approves WVR 16 see DTSC letter and FAA 16. VERONICA DICKERSON Digitally signed by VERONICA DICKERSON Date: 2025.10.16 14:16:56 -04'00'
	Approving Agency Date

Future Activity Allowance Determination Matrix for Work Variance Request (WVR)

Work Variance Request No. 16 Date: 10/1/2025

Future Activity Allowance is an activity that is not considered in the remedy design but necessary to support the project objectives. Future Activity Allowance is a Material Deviation which is defined in the final groundwater remedy design as: Material Deviation means a change or correction required to prevent a condition that would (1) render the approved design non-compliant with codes, regulations, and /or engineering standard of practices, (2) render planned well locations and/or constructions fail to meet the project objectives, (3) cause significant schedule delay, and/or (4) cause a significant increase in costs. (CH2M Hill, 2015)

According to the SEIR Project Description, "The inclusion of the Future Activity Allowance is not intended to account for minor adjustments (work variances) of the remedy design during construction resulting from field conditions. DTSC's objective for the inclusion of the Future Activity Allowance is to consider the potential impacts of needing to take additional but previously unforeseen activities that were not contemplated as part of the Final Remedy Design but are activities that would improve the performance of the remedy, or are necessary to gather additional information on the remedy performance, and/or aid in the transition of the active remedy to monitored natural attenuation." (ESA, 2017)

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1. Are all components of the WVR in the approved final design as reviewed in the SEIR?
   ☐ Yes ☒ No

Partial approval of WVR 16. Relocation of MW-DD into the IM-3 road is approved. Purpose of relocation of MW-DD into IM-3 road is to minimize ground disturbance in culturally sensitive areas while staying within the infrastructure alignment approved in final design. Newly modified arsenic mitigation and monitoring procedures are not approved and not part of the approved final design and/or State Water Resource Board permit for final approved groundwater remedy. Please see DTSC letter dated October 16, 2025, titled *Partial Approval for Work Variance #16-Relocation of Arsenic Monitoring Well (MW-DD) to IM-3 Road- Pacific Gas Electric (PG&E) Topock Compressor Station, Needles, California (EPA ID No. CAT080011729)(DTSC Site Code: 540015).*

2. Are all components of the WVR staying within an infrastructure alignment in the approved final design?
   ☒ Yes ☐ No

New MW-DD location in IM-3 road is within the infrastructure alignment in the approved final design.

If answers to both 1 and 2 are Yes, STOP – action is not Future Activity Allowance

3. For components not in approved final design, will the WVR require new access not identified for use in the final design and create new ground disturbance beyond those anticipated in final design?
   ☐ Yes ☒ No **NOT APPLICABLE**

If answer is No, STOP – action is not Future Activity Allowance. If Yes, proceed…

4. For components not in approved final design and require new access or new ground disturbance, will the ground disturbing activity be outside the 2018 SEIR project boundary?
   ☐ Yes ☐ No

Future Activity Allowance Determination Matrix
WVR No. 16
If answer is Yes, STOP – action is subject to additional CEQA evaluation. WVR approval will be considered after DTSC completes CEQA determination.

5. For WVR requiring new access and/or new ground disturbance, but project components are in approved final design and within the 2018 SEIR project boundary, is the variance necessitated by field conditions which are outside the control of the operator (e.g., refusal during drilling, unstable ground, existing design jeopardizes health and safety, modification to avoid archaeological resource, existing design does not conform to engineering standards, etc.)?
   ☐ Yes (Stormwater Intrusion) ☐ No

If answer is No or otherwise explained in Section 7 below, action is Future Activity Allowance, follow Communication Protocol for Future Activities Allowance, Exhibit 3 to the Statement of Decision and Resolution of Approval. If the answer is Yes, action is Future Activity Allowance, and DTSC will work with Tribes to meet the time sensitivity of the WVR. Regardless of response, because of new access and/or new ground disturbance, WVR action may be subject to Federal Consultation. Inquire with BLM to determine whether there is a need to follow Consultation during Construction protocol.

6. Does the addition of WVR cause an exceedance from infrastructure limits specified in the 2018 certified Final SEIR (Table 3-1 for well boreholes; Table 3-2 for pipeline trenches, electrical/ communication conduit, roadway improvements, or sizes of buildings and structures; Table 3-4 for volume of soil disturbance and Table 3-5 for water usage)?
   ☐ Yes ☐ No

If answer is Yes, STOP – action is subject to additional CEQA evaluation. WVR approval will be considered after DTSC completes a CEQA checklist to determine if there are new or substantially more significant environmental impacts than disclosed in the 2018 SEIR.

7. Other extenuating circumstances or information for FAA considerations: ☒ No
   ☐ Yes – provide information and/or justification

Conclusion: WVR No. 16 ☒ is not a FAA ☐ is a FAA

Signature of DTSC reviewer: Christopher Juan Date: 10/16/2025

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
5796 Corporate Avenue
Cypress, California 90630
https://dtsc.ca.gov/

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

October 16, 2025

Mr. John Glass,
Project Manager
Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, California 94612
f2g5@pge.com

PARTIAL APROVAL FOR WORK VARIANCE #16 - RELOCATION OF ARSENIC MONITORING WELL (MW-DD) TO IM-3 ROAD - PACIFIC GAS AND ELECTRIC (PG&E) TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA
(EPA ID NO. CAT080011729)/(DTSC SITE CODE: 540015)

Dear Mr. Glass:

The Department of Toxic Substances Control (DTSC) has completed review of the *Work Variance #16-Relocation of Arsenic Monitoring Well (MW-DD) to IM-3 Road* (Work Variance Request) for the Topock Compressor Station project, received on October 1, 2025, and partially approves the work variance.

As background, the need for MW-DD for arsenic monitoring and the specific location of MW-DD is a requirement outlined in the remedy design and is further described by the State Water Resources Control Board (SWRCB), in a letter issued November 20, 2013, titled *Topock Compressor Station: Remedy Requirements Associated with Injection of Groundwater Containing Naturally Occurring Arsenic.* SWRCB set this requirement in response to a past request from PG&E to inject groundwater pumped from a groundwater basin in Arizona containing naturally occurring arsenic at levels above the applicable groundwater water quality objective of 10 parts per billion (ppb) for California into a receiving groundwater basin with arsenic levels below the 10 ppb

water quality objective. Based on groundwater modeling prepared by PG&E, the SWRCB specified that groundwater would be monitored for arsenic at 150 feet and 225 feet radially away from remedy injection wells that could receive the imported water.

Work Variance #16, documents three requests to deviate from the originally approved 2015 Basis of Design Report. These requests include: 1) a request by PG&E to relocate MW-DD to the IM-3 road area due to cultural concerns; and 2) a proposal for two modifications that would change text and a figure flow chart in Appendix L of the BOD that describe procedures to be carried out in the event of a potential arsenic exceedance associated with freshwater injection.

DTSC accepts the work variance request documenting the relocation of MW-DD into the IM-3 road. However, DTSC specifically rejects both of PG&E's proposals to modify the procedure for freshwater arsenic evaluation on the basis that these requests differ from what is documented in the approved 2015 BOD and the November 20, 2013 State Water Resources Control Board letter. Currently, there are adequate arsenic evaluation measures and guidance identified in Figure 2.2-9 titled *Freshwater Injection System Decision Rules/Operational Framework* found in the *Operational and Maintenance Manual, Volume 2: Sampling and Monitoring Plan*, which should be followed.

Please begin planning for the MW-DD relocation as outlined in the Work Variance and provide DTSC with updates on the progress or if other issues arise during implementation in the field.

If you have any questions regarding this letter, please feel free to contact the Project Manager, Mr. Christopher Ioan via e-mail at: christopher.ioan@dtsc.ca.gov or at (714) 484-5365.

Sincerely,

Christopher Ioan

Christopher Ioan
Hazardous Substances Engineer
Site and Mitigation and Restoration Program

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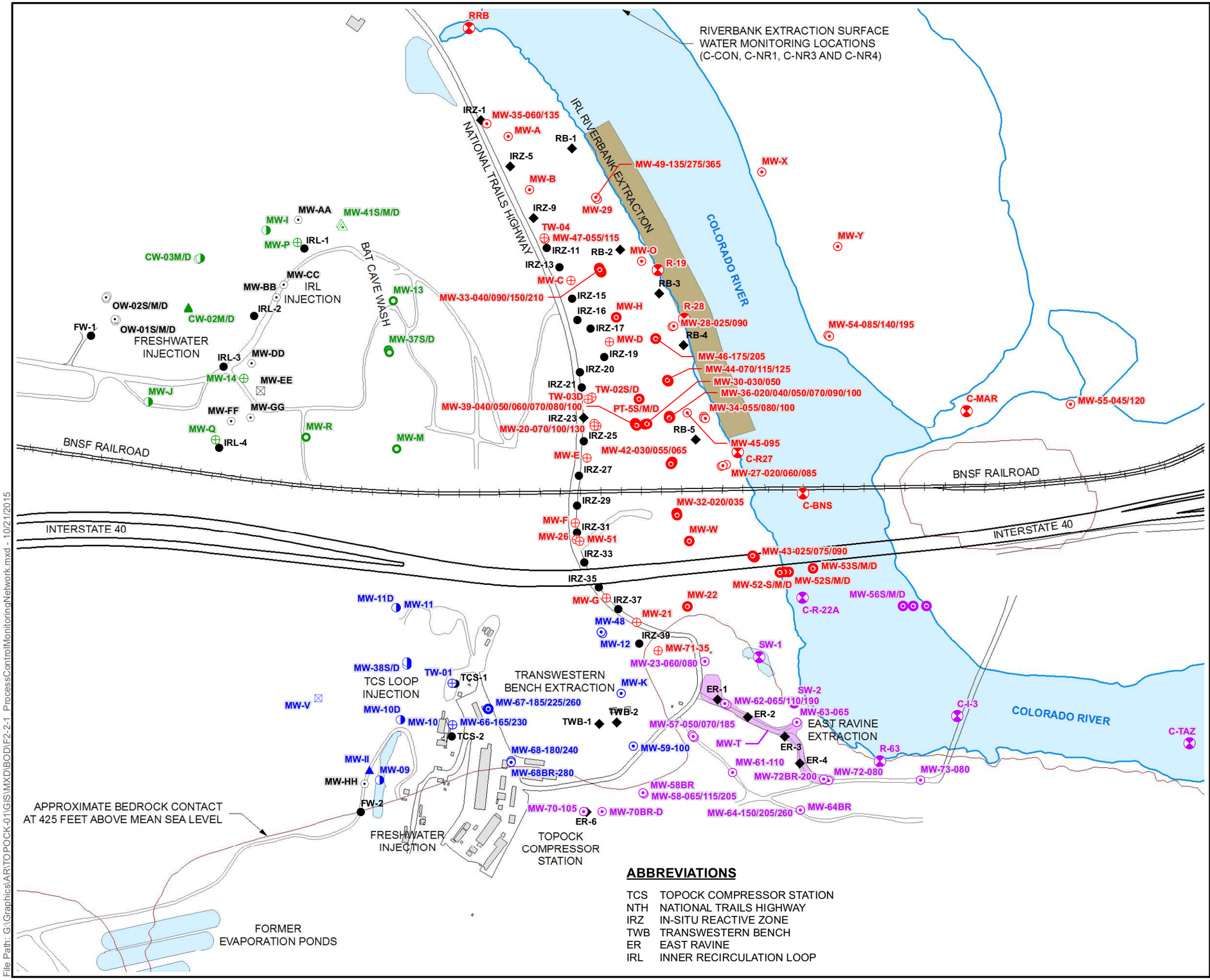
PG&E Topock Consultative Work Group Members

PG&E Topock Geo/Hydro Workgroup Members

Tribal Representatives in PG&E Project Contact List



LEGEND

- NTH IRZ DOSE RESPONSE WELL
- RIVERBANK OR NORTHERN IRZ EXTRACTION MONITORING WELL
- NTH IRZ DOWNGRADIENT AND RIVERBANK EXTRACTION MONITORING WELL
- INNER RECIRCULATION LOOP DOSE RESPONSE WELL
- INNER RECIRCULATION LOOP DOWNGRADIENT MONITORING WELL
- INNER RECIRCULATION LOOP BYPRODUCT MONITORING WELL
- INNER RECIRCULATION LOOP DOWNGRADIENT AND FRESHWATER ARSENIC MONITORING WELL
- INNER RECIRCULATION LOOP BYPRODUCT AND FRESHWATER ARSENIC MONITORING WELL
- TCS RECIRCULATION LOOP DOSE RESPONSE WELL
- TCS LOOP BYPRODUCT MONITORING WELL
- TCS LOOP TRANSWESTERN BENCH EXTRACTION MONITORING WELL
- TCS LOOP DOWNGRADIENT AND TWB EXTRACTION MONITORING WELL
- TCS LOOP BYPRODUCT AND FRESHWATER ARSENIC MONITORING WELL
- FUTURE PROVISIONAL TCS LOOP BYPRODUCT MONITORING WELL
- TCS LOOP EAST RAVINE EXTRACTION MONITORING WELL
- TCS LOOP EAST RAVINE AND RIVERBANK EXTRACTION MONITORING WELL
- FUTURE PROVISIONAL FRESHWATER ARSENIC MONITORING WELL
- FRESHWATER ARSENIC MONITORING WELL
- REMEDIATION WELL (INJECTION)
- REMEDIATION WELL (EXTRACTION)
- RIVERBANK EXTRACTION SURFACE WATER MONITORING LOCATION
- RIVERBANK AND EAST RAVINE EXTRACTION SURFACE WATER MONITORING LOCATION
- AREA FOR PLANNED TCS LOOP EAST RAVINE EXTRACTION MONITORING WELL MW-T
- AREA FOR POTENTIAL SLANT WELL SCREENS

ABBREVIATIONS

TCS	TOPOCK COMPRESSOR STATION
NTH	NATIONAL TRAILS HIGHWAY
IRZ	IN-SITU REACTIVE ZONE
TWB	TRANSWESTERN BENCH
ER	EAST RAVINE
IRL	INNER RECIRCULATION LOOP

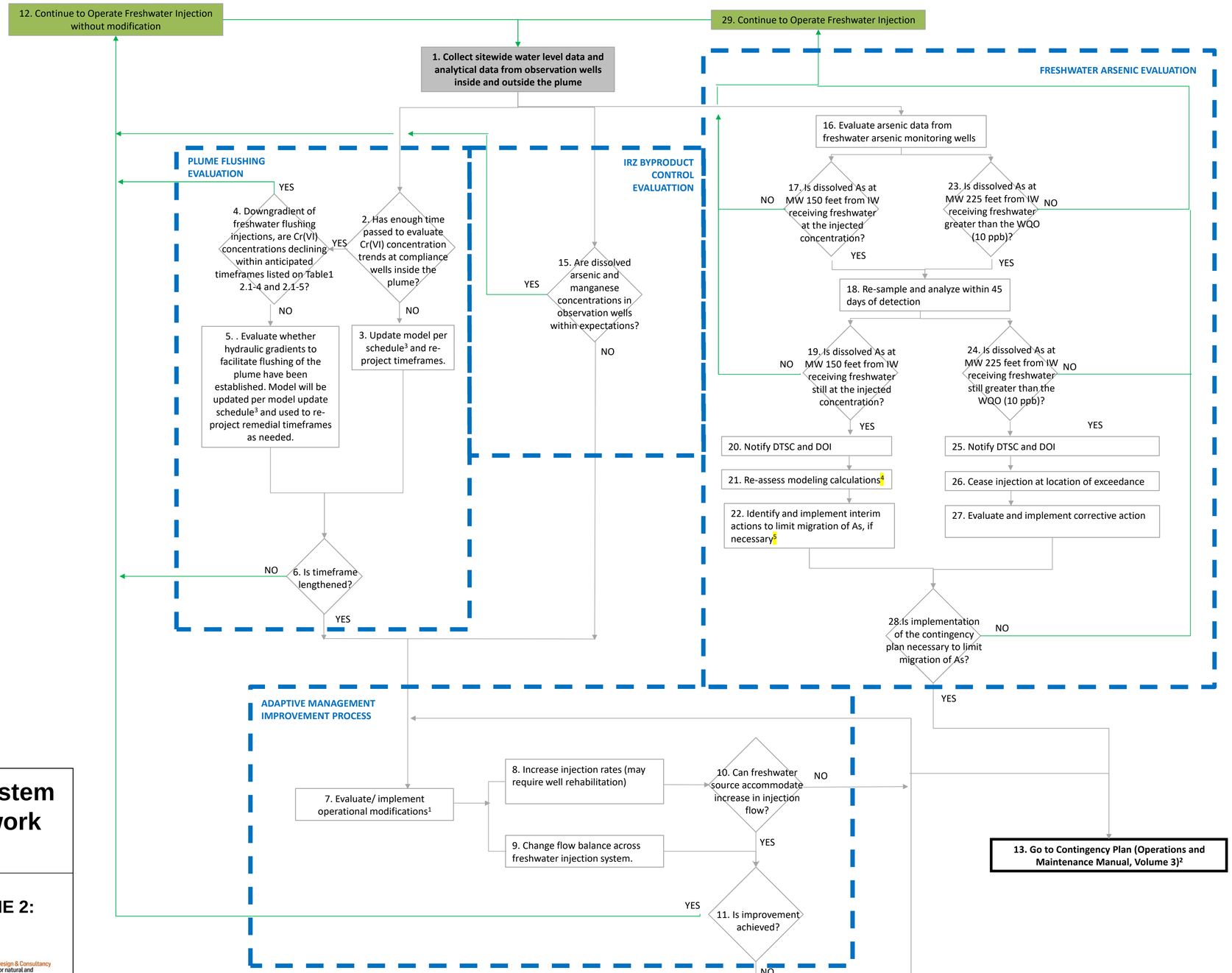
PACIFIC GAS AND ELECTRIC COMPANY
NEEDLES, CALIFORNIA
OPERATION AND MAINTENANCE MANUAL
VOLUME 2: SAMPLING AND ANALYSIS PLAN

PROCESS CONTROL MONITORING NETWORK

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2.2-1

File Path: G:\Graphics\AR\TOPOCK-01\GIS\MXD\BODF2-2-1_ProcessControlMonitoringNetwork.mxd - 10/21/2015



Notes:

1. The operational modifications listed here are examples and do not exclude the identification of other changes. If deemed appropriate, samples for results confirmation may be collected prior to implementation of operational changes.
2. If operational adjustments prove to be ineffective at achieving system performance, then the adaptive operations process will flow to the Contingency Plan (O&M Manual, Volume 3)
3. Model updates are planned to be conducted approximately annually during start-up and during five-year reviews thereafter.
4. This re-assessment will incorporate applicable data, including arsenic data from other wells including other 150-foot freshwater arsenic monitoring wells.
5. For IRL-3, future provisional arsenic monitoring well MW-EE will be installed at a location that is at least 225 feet from IRL-3 and no closer than 225 feet from any other freshwater injection location.

Acronyms and Abbreviations:
As - arsenic, Cr(VI) - hexavalent chromium, DOI- Department of the Interior, DTSC - Department of Toxic Substances Control, IW - injection well, MW - monitoring well, ppb - parts per billion, WQO – water quality objective

Figure 2.2-9. Freshwater Injection System Decision Rules/Operational Framework

OPERATIONS AND MAINTENANCE MANUAL, VOLUME 2: SAMPLING AND MONITORING PLAN

PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

ARCADIS Design & Consultancy for natural and built assets

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
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Gavin Newsom
Governor

August 4, 2025

Mr. John Glass
Project Manager
Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, California 94612

RESPONSE TO PACIFIC GAS & ELECTRIC COMPANY'S (PG&E'S)
COMMENTS ON WELL MW-DD LOCATION UPDATE
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA (EPA ID NO: CAT080011729)/(DTSC SITE CODE: 540015)

Dear Mr. Glass:

The Department of Toxic Substances Control (DTSC) and Department of Interior (DOI) received PG&E's letter dated July 29, 2025, which comments on DTSC's July 7, 2025 request for assessing a potential alternate location for arsenic groundwater monitoring MW-DD.

DTSC, in concurrence with DOI, directs PG&E to relocate groundwater monitoring well MW-DD into the Interim Measures (IM-3) road. Furthermore, PG&E must prepare and submit a Work Variance Request per Table 2.3.1 in the Groundwater Remedy Construction/Remedial Action Work Plan to agencies for this relocation by September 3, 2025.

Further information for this determination follows below.

Background

The role of groundwater monitoring well MW-DD is to monitor arsenic levels in groundwater 150 feet from Inner Recirculation Loop Well 3 (IRL-3) per State Water Resources Control Board 2013 requirements. The original MW-DD location is potentially near a cultural and historic sensitive area and not favored by Tribes. Tribes had requested DTSC assistance in April 2025 to see if an alternative MW-DD location was possible.

Upon technical review of the approved 2015 Basis of Design (BOD) groundwater remedy design and model, it was determined the best alternative location for MW-DD would be in the IM-3 road at the location referred to as “MW-DD IM3 Road”. Furthermore, relocating MW-DD into the IM-3 road would cause minimal disturbance as far as potentially impacting cultural and historic resources.

In a July 7, 2025 email, DTSC requested PG&E to assist agencies by preparing figures illustrating the foot print/Work Area Boundaries for both well MW-DD as proposed in the 2015 BOD as well as the MW-DD location in the IM-3 Access Road (MW-DD IM3 Road) as observed on June 16, 2025. On July 29, 2025, PG&E responded via letter titled *Well MW-DD Location Update, PG&E Topock Compressor Station, Needles, California.* The PG&E letter comments on the uncertainty in the groundwater model and how adaptive management may be hindered in the future using the MW-DD IM3 Road location but does not provide any data to support this concern.

Concerns with potential future arsenic exceedances at MW-DD and other arsenic monitoring wells can be addressed with the flowchart, Figure 2.2-9: Freshwater Injection System Decision Rules/Operational Framework, contained within the approved 2015 BOD as it provides an appropriate framework to mitigate and solve potential future arsenic exceedances. In the case of well MW-DD, an arsenic exceedance will likely require the installation of provisional well MW-EE as envisioned in the 2015 BOD.

Conclusion

For these reasons, DTSC in concurrence with DOI, find it technically sound to relocate MW-DD to the IM-3 road and directs PG&E to relocate this well to the MW-DD IM3 Road location and prepare a Work Variance Request for MW-DD’s relocation as soon as possible.

If you have any questions regarding this letter, please feel free to contact the Project Manager, Mr. Christopher Ioan via email at: christopher.ioan@dtsc.ca.gov or at (714) 484-5365.

Sincerely,

Christopher Ioan

Christopher Ioan
Hazardous Substances Engineer
Site Mitigation and Restoration Program

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July 29, 2025

Chris Ioan
Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Subject: *Well MW-DD Location Update, PG&E Topock Compressor Station, Needles, California*

Dear Mr. Ioan:

As requested by the Department of Toxic Substances Control (DTSC) in an email sent on July 7, 2025, Pacific Gas and Electric Company (PG&E) is providing the attached drawings (C-108 and C-108.A) showing our estimates of the footprints/work area boundaries for two potential locations for monitoring well MW-DD, which is the arsenic monitoring well located at the 150-foot radial distance from IRL-3. The first location (hereinafter referred to as "MW-DD"), shown in C-108, is the approved location that was presented in the 2015 Final Basis of Design (BOD). The second location (hereinafter referred to as "MW-DD IM3 Road"), shown in C-108.A, is an alternate location within the IM-3 access road requested by the DTSC. The DTSC's July 7, 2025 email notes that "the Tribes have concerns with the location of the 150-foot arsenic monitoring well MW-DD as proposed in the approved 2015 BOD, especially after having seen the Work Area Boundary associated with the well", and therefore the MW-DD IM3 Road location is being considered over the approved 2015 BOD MW-DD location. If these concerns are technical in nature, PG&E offers to engage in direct discussion with the Tribes and their technical representatives to better understand the issues.

Note that C-108 reflects the following change to reduce the footprint in the area of MW-DD: the freshwater tank and phase separator will not be staged in the immediate vicinity of the rig as previously shown in Figure 3 of ERTC 5bb (see attached); instead, these components will be staged in an area that has already been disturbed with temporary pipelines running to the rig.

PG&E has concerns about the MW-DD IM3 Road location which have been previously communicated to the DTSC, including in PG&E's May 29, 2025 letter "Alternate Location for IRL-3 Injection Arsenic Monitoring Wells MW-DD and MW-EE on IM-3 Access Road". PG&E's concern is rooted in the fact that the MW-DD IM3 Road location is more likely to yield ambiguous data given its closer proximity to the IRL-2 injection well (i.e., between the 150-foot and 225-foot radii; see attached Figure 1). The DTSC has dismissed PG&E's concerns based on the groundwater model flow simulations that were completed for the 2015 BOD which assumed a constant injection flow rate of 75 gallons per minute (gpm) of riverbank extracted water to IRL-2 and 100 gpm of Arizona freshwater to IRL-3. This is a shortsighted view that does not consider uncertainty in the model or how operations may need to be adapted over the course of several decades of remedy operation.

Given the potential for ambiguity regarding the source of arsenic at the MW-DD IM3 Road location, detailed scenarios and response actions to each scenario need to be discussed with PG&E and approved by the DTSC and United States Department of the Interior (collectively known as the Agencies) should arsenic be detected at a concentration greater than the water quality objective of 10 micrograms per liter (µg/L) at the MW-DD IM3 Road location. This is even more imperative given that MW-EE (the arsenic monitoring well located at a 225-foot radial distance from IRL-3) is future provisional in the 2015 BOD and is not currently planned for installation during the Phase 2B remedy construction. Section 2.2.4 and Figure 2.2-9 of the Final Sampling and Monitoring Plan (the SMP; Appendix L, Volume 2 of the 2015 BOD) summarize the decision rules that currently govern the management of arsenic introduced via freshwater injection. A copy of Figure 2.2-9 is attached. In accordance with the Final SMP, if verification sampling confirms that the leading edge of the arsenic plume greater than 10 µg/L extends more than 150 feet from an Arizona freshwater injector, response actions will include re-assessment of the modeling

calculations and evaluation of interim actions to limit arsenic migration (e.g., operational adjustments, aeration of the Arizona freshwater prior to injection). The Final SMP does not account for a scenario where the 150-foot arsenic monitoring well for one injector is also within 225 feet from another injector, which would be the case for the MW-DD IM3 Road location. Detections of arsenic at the MW-DD IM3 Road location could potentially hinder freshwater injection at both IRL-2 and IRL-3. PG&E requests further discussion with the Agencies to establish an appropriate decision framework for the case of a confirmed exceedance (arsenic concentration greater than 10 µg/L) at the MW-DD IM3 Road location. The outcome of this discussion should be appropriately documented to provide transparency and clear guidance on future response actions related to MW-DD IM3 Road.

PG&E is looking forward to working with the Agencies and Tribes to reach a resolution on the location for MW-DD in a timely manner so as not to delay construction.

Please contact me if you have any questions or need additional information.

Sincerely,

John Glass
Pacific Gas and Electric Co
Program Manager

Cc: Chris Guerre/DTSC
Greg Neal/DTSC
Nicholas Ta/DTSC
Karen Baker/DTSC
Veronica Dickerson/DOI
Bonni Bruce/BLM

Attachments

Drawing C-108	MW-DD Temporary Drilling Pad
Drawing C-108.A	MW-DD IM3 Road Temporary Drilling Pad
ERTC 5bb Figure 3	
Figure 1	IRL-3 Arsenic Monitoring Well Locations
Figure 2.2-9	Freshwater Injection System Decision Rules/Operational Framework

NOTES:

1. CONTRACTOR SHALL ADD FILL ON SLOPE TO ACCOMMODATE WELL DRILLING EQUIPMENT

MW-DD WELL PAD - PLAN

(SCALE: 1" = 20' H)

LEGEND:

GRADE/SMOOTH

CONSTRUCTION BOUNDARY

0 20 40 60

HORIZ: SCALE: 1"=20'

N

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
4	7/28/25	PHASE 2B DRILLING PAD LAYOUT - UPDATE 2		VC	VJM	BLP	JPB
3	04/08/25	PHASE 2B DRILLING PAD LAYOUT - IFC		VC	VJM	BLP	JPB
2	03/24/25	PHASE 2B DRILLING PAD LAYOUT - IFB		VC	VJM	BLP	JPB
1	02/07/25	PHASE 2B DRILLING PAD LAYOUT		VC	VJM	BLP	JPB
0	01/06/25	PRELIMINARY PHASE 2B DRILLING PAD LAYOUT		MJY	VJM	BLP	JPB

REVISIONS

APPROVED BY	
JPB	SO
	SUPV
	DSGN
	DWN
	CHKD
	OK
	DATE
	SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

MW-DD TEMPORARY DRILLING PAD

GAS TRANSMISSION & DISTRIBUTION

PACIFIC GAS AND ELECTRIC COMPANY

SAN FRANCISCO, CALIFORNIA

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO.	of SHEETS
C-108	REV 4

N1808

07/28/2025, 19:56, C:\Users\vmorasko\DC\ACCDocs\Arcadis\ANA - 30019125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2B Design\Drill Pads\XR-MW-DD.dwg, Tab: MWDD

NOTES:

1. CONTRACTOR SHALL ADD FILL ON SLOPE TO ACCOMMODATE WELL DRILLING EQUIPMENT

MW-DD IM3 ROAD WELL PAD - PLAN

(SCALE: 1" = 20' H)

LEGEND:

GRADE/SMOOTH

CONSTRUCTION BOUNDARY

0 20 40 60

HORIZ: SCALE: 1"=20'

N

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
0	7/28/25	PHASE 2B DRILLING PAD LAYOUT	VC	VJM	BLP	JPB	

REVISIONS

APPROVED BY: JPB

SO | SUPV | DSGN | DWN | CHKD | OK | DATE | SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

MW-DD IM3 ROAD TEMPORARY DRILLING PAD

GAS TRANSMISSION & DISTRIBUTION

PACIFIC GAS AND ELECTRIC COMPANY

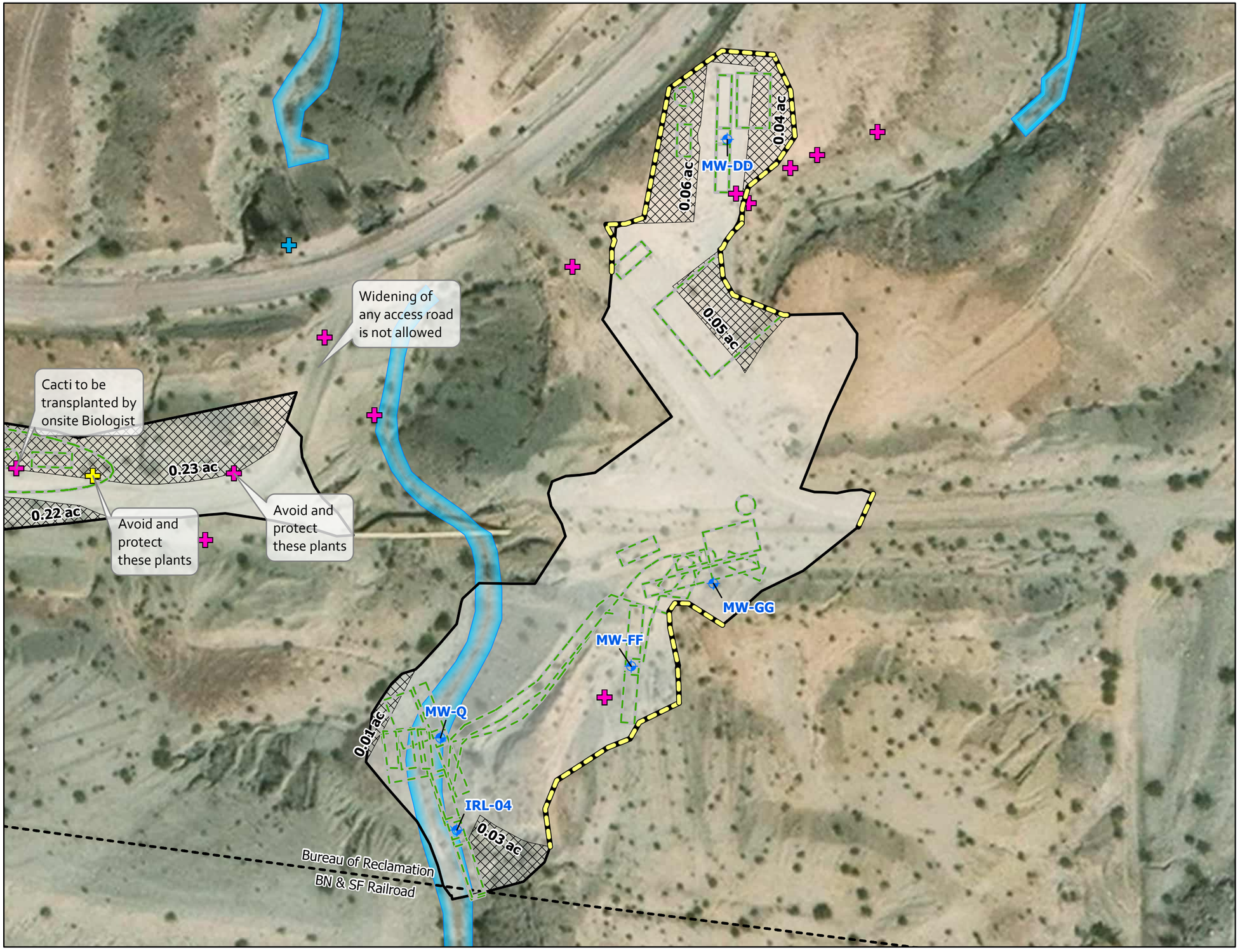
SAN FRANCISCO, CALIFORNIA

MICROFILM | BILL OF MATL | DWG LIST | SUPSDS | SUPSD BY

SHEET NO. C-108.A of SHEETS | REV 0

N1808

07/28/2025, 19:54, C:\Users\vmorasko\DC\ACCDocs\Arcadis\ANA - 30019125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2B Design\Drill Pads\XR-MW-DD.dwg, Tab: MWDD.slt



Legend

- Work Area Boundary
- Project Features
- Waters of the US
- Property Boundary
- Additional Work Area (0.86 ac)

Plant Species

- Beavertail Cactus
- Blue Palo Verde
- Silver Cholla

Delineate this portion of the Work Area Boundary with delineators that are visible to construction crew (e.g., orange fence)

NOTES:

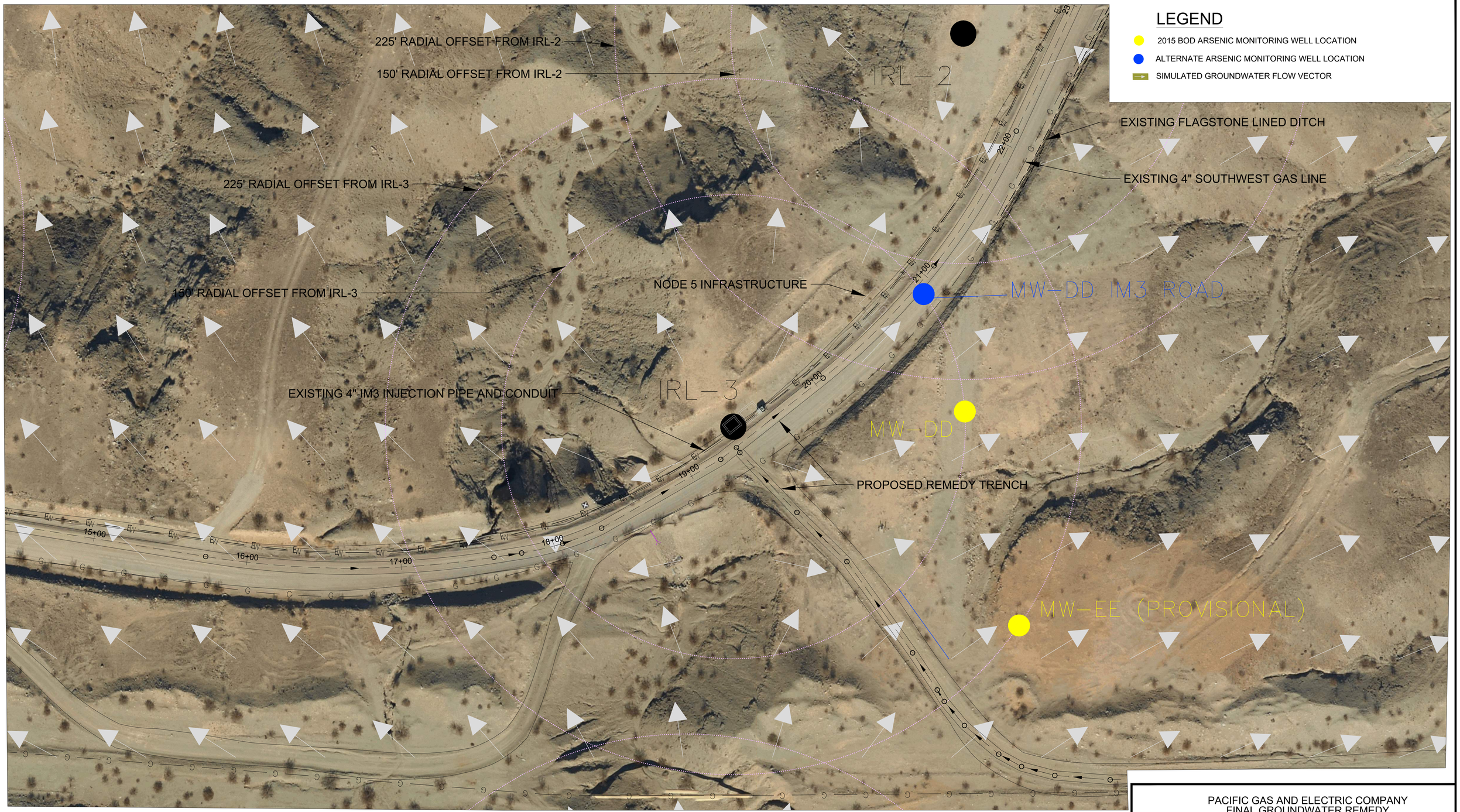
1. **No mobilization or work allowed in the Additional Work Areas (cross hatched without written approval from PG&E Biologist.**
2. **Per the 4/3/2025 Pre-Work Field Review, a discussion about well MW-DD between Tribes and the agencies will occur prior to drilling.**
3. **Implement SWPPP BMPs fiber roll (SE-5), spill prevention control (WM-4), vehicle and equipment fueling (NS-9), vehicle and equipment maintenance (NS-10), and concrete waste management (WM-8) in the Primary Work Zone for each well.**

N

0 30 60 ft.

Figure 3
ERTC 5bb
Part 3 - Wells IRL-4, MW-Q, MW-DD, MW-FF, MW-GG
PG&E Topock Compressor Station,
Needles, California

Jacobs

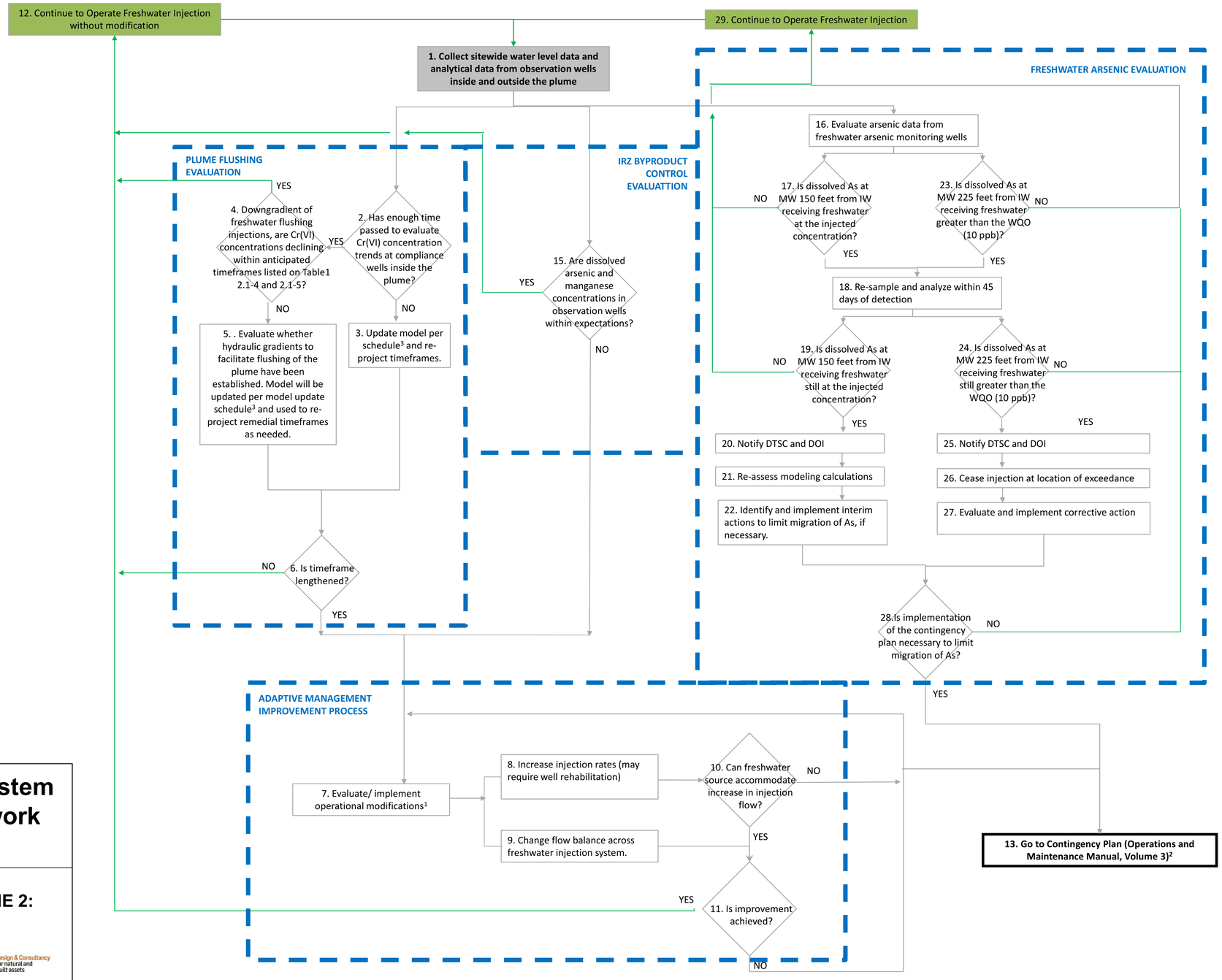


PACIFIC GAS AND ELECTRIC COMPANY
FINAL GROUNDWATER REMEDY
NEEDLES, CALIFORNIA

IRL-3 ARSENIC MONITORING WELL LOCATIONS

ARCADIS

FIGURE
1



Notes:

1. The operational modifications listed here are examples and do not exclude the identification of other changes. If deemed appropriate, samples for results confirmation may be collected prior to implementation of operational changes.
2. If operational adjustments prove to be ineffective at achieving system performance, then the adaptive operations process will flow to the Contingency Plan (O&M Manual, Volume 3)
3. Model updates are planned to be conducted approximately annually during start-up and during five-year reviews thereafter.

Acronyms and Abbreviations:
As - arsenic, Cr(VI) - hexavalent chromium, DOI- Department of the Interior, DTSC - Department of Toxic Substances Control, IW - injection well, MW - monitoring well, ppb - parts per billion, WQO – water quality objective

Figure 2.2-9. Freshwater Injection System Decision Rules/Operational Framework

OPERATIONS AND MAINTENANCE MANUAL, VOLUME 2: SAMPLING AND MONITORING PLAN

PG&E TOPOCK COMPRESSOR STATION NEEDLES, CALIFORNIA

ARCADIS Design & Consultancy for natural and built assets

From:	Guerre, Christopher@DTSC
To:	Glass, John
Cc:	Allen, Bryanna R.@Waterboards; Monica.Aragon-Guzman; Baker, Karen@DTSC; Beahta Davis, Regional Parks; Kuo Brinton,Betty L; Bruce, Bonni D; Brian Kellywood, CIT Env Dir; Bryan Etsitty, CRIT; Hong, Christina; CourtCoyle@aol.com; Bush, Dan; Diaz, David; Vigil, David@Wildlife; Dawn Hubbs, Sunrise for FMIT; dbonamici@critdoj.com; Doug Bonamici 2, CRITs; Sheu, Emily; Eric Fordham; Espino, Marisol@DTSC; Garcia, Angela@Waterboards; Glenn Lodge, Chemehuevi; Gloria Benson, BLM; Gregory Cranham; Guerre, Christopher@DTSC; Hare, Lori@DTSC; Baker, Iain; Ioan, Christopher@DTSC; Jim Colmer; James Munkres, USBOR; Janet Newman, Arcadis; Smith, Jeffery B; Darcangelo, Jennifer; Jessica Neuwerth, CRB; Jill C. Teraoka, MWD; historicpreservation; John Krause, BIA; Baxter, Jonathan; Jose Guzman, Cocopah; Barnett, Joseph R; Kevin Russell, USFWS; Bonnett, Kristina; Leo Leonhart, Trevet; Liu, Charlie@DTSC; Luis Gonzalaz, CIT Tribal Admin; Lyndee Hornell, Hualapai; Mananian, Eileen@DTSC; Martinez, Andres@DTSC; Matt Dudley, PG&E; Santos,Mauricio J; Mitchell Owens, USBLM; mtlopez@mwdh2o.com; Murai, Vivian@DTSC; Nathalie Doherty, USDOI; Neal, Greg@DTSC; Nichole Osuch, ADEQ; Nora McDowell, FMIT; Paul Rochelle, MWD; PGEFile@DTSC; Placencia, Michael@Waterboards; Richard Meyers, USFWS; Robert Cheng, Coachella Valley Water District; Ron Escobar, CIT THPO Director; Roy-Semmen, Shukla@DTSC; Graunke, Scott; Shana Rapoport, CRB; smcdonald@spmcdonaldlaw.com; Moore, Stephanie; Perry, Steven; nicholas.ta; Tony Rossi; Vandeveld, Allison@DTSC; Veen Chee Foong, PG&E; Dickerson, Veronica L; vincent.garcia@ihs.gov; Strohl, Virginia; William Mack, BLM; Ahmad, Farrukh@DTSC; Frank Lenzo, Arcadis; Greg Foote, Arcadis; Piper, Jay; Sheets, Keith; Rich Juricich, CRB; Vigil, David@Wildlife; Charlie Schlinger; David Clinnick, HDR; ericrosenblum; meggers; PGEFile@DTSC; walt.mcnab; Amelia Flores, CRIT; Blake Watahomigie, Hualapai; calisay17@hotmail.com; Carrie Imus, Hualapai; Chairwoman Sherry Parker,Hualapai; Chase Choate, Quechan ; Christopher Nicosia, Twenty-Nine Palms; cocotcsec@cocopah.com; Elizabeth Benitez, Cocopah; Eric Jordan, Twenty-Nine Palms; Joe Rodriquez, Cocopah; Johnson "JD" Fisher, CRITs; LindaOtero@FortMojave.com; Rena Van Fleet, CRIT; rloudbear@critdoj.com; ShanLewis@fortmojave.com; Simone "Ka-Voka" Jackson, Hualapai; Williams, Timothy@CDSS-Import; Toni Carlyle, CRIT
Subject:	[EXTERNAL] RE: TPK MW-DD Location Update
Date:	Monday, July 7, 2025 9:24:58 AM
Attachments:	image002.png image003.png image004.png image005.png Revised Figure 3_05202025.pdf BOD GW flowlines reduced size.pdf

Morning John,

As you know, the Tribes have concerns with the location of the 150-foot arsenic monitoring well MW-DD as proposed in the approved 2015 Basis of Design (BOD), especially after having seen the Work Area Boundary associated with the well (see Figure 3 of ERTC 5bb attached). The Tribes requested DTSC assistance regarding this issue and discussions have been held to evaluate potential alternate locations for this well. Based on those discussions, DTSC is requesting that PG&E prepare figures similar to the attached ERTC Figure 3 illustrating the foot print/Work Area Boundaries for both well MW-DD as proposed in the BOD as well as the MW-DD location in the IM3 Access Road (MW-DD IM3 Road) that was walked and observed on June 16, 2025. The June walk and associated discussions confirmed that well installation within the IM3 Access Road location was feasible.

DTSC is not pursuing the third potential location, MW-DD Alt, that has been proposed and staked in the field and is located near well MW-14 and northeast of the road leading to the IRL-4 location. DTSC believes that the location of MW-DD Alt is technically inappropriate since flow from IRL-3 may not even reach the MW-DD Alt location as predicted by groundwater model simulations. Since the MW-DD Alt location may not monitor IRL-3, it would fail to meet its mandated objective. Groundwater model simulations support the use of the other two

MW-DD locations.
DTSC recognizes PG&E's concern with the MW-DD IM3 Road location being near the IRL-2 injection area that is described further in PG&E's May 29, 2025 letter titled *Alternate Location for IRL-3 Injection Arsenic Monitoring Wells MW-DD and MW-EE on IM-3 Access Road, PG&E Topock Compressor Station, Needles, California*. The concern appears rooted in the possibility that waters from both IRL-2 and IRL-3 could merge at the MW-DD IM3 Road location and receive arsenic concentrations from both injectors. However, this concern is not supported by any of PG&E's groundwater model flow simulations. The groundwater flow simulations were the basis for selecting arsenic monitoring well locations and are provided in the attached file for reference.

Agencies will decide on which location to move forward with after receiving the figures and any associated text from PG&E. Figures should provide work areas that are minimized, yet functional. PG&E should submit this information no later than July 31, 2025 and an earlier date is requested if possible. Please contact us if you have any questions.

Regards,

Chris Guerre, CHG
Senior Engineering Geologist
Geological Services Branch
Christopher.Guerre@dtsc.ca.gov
(714) 484-5422
Department of Toxic Substances Control
5796 Corporate Avenue, Cypress, California
90630
California Environmental Protection Agency

From: Ioan, Christopher@DTSC <Christopher.Ioan@dtsc.ca.gov>
Sent: Wednesday, June 18, 2025 8:44 AM
To: Allen, Bryanna R.@Waterboards <Bryanna.Allen@Waterboards.ca.gov>; Aragon-Guzman, Monica@Waterboards <Monica.Aragon-Guzman@Waterboards.ca.gov>; Baker, Karen@DTSC <Karen.Baker@dtsc.ca.gov>; Beahta Davis, Regional Parks <beahta.davis@parks.sbcounty.gov>; Betty Kuo Brinton, MWD <bkuo@mwdh2o.com>; Bonni Bruce, USBLM <bbruce@blm.gov>; Brian Kellywood, CIT Env Dir <dir.epa@cit-nsn.gov>; Bryan Etsitty, CRIT <betsitty@crit-nsn.gov>; Hong, Christina/LAC <Christina.Hong@jacobs.com>; CourtCoyle@aol.com; Dan Bush, Arcadis <Dan.Bush@Arcadis.com>; David Diaz, PG&E <d3d6@pge.com>; Vigil, David@Wildlife <David.Vigil@wildlife.ca.gov>; Dawn Hubbs, Sunrise for FMIT <dawn@sunriseconsultation.com>; dbonamici@critdoj.com; Doug Bonamici 2, CRITs <doug.bonamici@crit-nsn.gov>; Emily Sheu, Arcadis <emily.sheu@arcadis.com>; eric_fordham@geopentech.com; Espino, Marisol@DTSC <Marisol.Espino@dtsc.ca.gov>; Garcia, Angela@Waterboards

<Angela.Garcia@Waterboards.ca.gov>; Glenn Lodge, Chemehuevi <chairman@cit-nsn.gov>; Gloria Benson, BLM <gbbenson@blm.gov>; Greg Cranham, Trevet <gcranham@trevetinc.com>; Guerre, Christopher@DTSC <Christopher.Guerre@dtsc.ca.gov>; Hare, Lori@DTSC <Lori.Hare@dtsc.ca.gov>; Iain Baker, PG&E <IxBj@pge.com>; Ioan, Christopher@DTSC <Christopher.Ioan@dtsc.ca.gov>; James Colmer, BB&E for DOI <jcolmer@bbande.com>; James Munkres, USBOR <jmunkres@usbr.gov>; Janet Newman, Arcadis <Janet.Newman@arcadis.com>; JefferySmith@usbr.gov; Jennifer Darcangelo, PG&E <J5D8@pge.com>; Jessica Neuwerth, CRB <jneuwerth@crb.ca.gov>; Jill C. Teraoka, MWD <jteraoka@mwdh2o.com>; Jill McCormick, Fort Yuma-Quechan Tribe <historicpreservation@quechantribe.com>; John Glass, PG&E <F2G5@pge.com>; John Krause, BIA <John.Krause@bia.gov>; Jonathan Baxter, Arcadis <Jonathan.Baxter@arcadis.com>; Jose Guzman, Cocopah <guzmanj@cocopah.gov>; Joseph Barnett, USFWS <joseph_barnett@fws.gov>; Kevin Russell, USFWS <kevin_russell@fws.gov>; Kristina Bonnett, PG&E <kaby@pge.com>; Leo Leonhart, Trevet <lleonhart@trevetinc.com>; Liu, Charlie@DTSC <Charlie.Liu@dtsc.ca.gov>; Luis Gonzalaz, CIT Tribal Admin <administrator@cit-nsn.gov>; Lyndee Hornell, Hualapai <lhornell@hualapai-nsn.gov>; Mananian, Eileen@DTSC <Eileen.Mananian@dtsc.ca.gov>; Martinez, Andres@DTSC <Andres.Martinez@dtsc.ca.gov>; Matt Dudley, PG&E <Matthew.Dudley@pge.com>; Mauricio Santos, MWD <MSantos@mwdh2o.com>; Mitchell Owens, USBLM <mowens@blm.gov>; mtlopez@mwdh2o.com; Murai, Vivian@DTSC <Vivian.Murai@dtsc.ca.gov>; Nathalie Doherty, USDOI <Nathalie.Doherty@sol.doi.gov>; Neal, Greg@DTSC <Greg.Neal@dtsc.ca.gov>; Nichole Osuch, ADEQ <nso@azdeq.gov>; Nora McDowell, FMIT <NoraMcDowell@fortmojave.com>; Paul Rochelle, MWD <prochelle@mwdh2o.com>; PGEFile@DTSC <PGEFile@dtsc.ca.gov>; Placencia, Michael@Waterboards <Michael.Placencia@Waterboards.ca.gov>; Richard Meyers, USFWS <richard_meyers@fws.gov>; Robert Cheng, Coachella Valley Water District <rcheng@cvwd.org>; Ron Escobar, CIT THPO Director <thpodir@cit-nsn.gov>; Roy-Semmen, Shukla@DTSC <Shukla.Roy-Semmen@dtsc.ca.gov>; Shana Rapoport, CRB <srapoport@crb.ca.gov>; smcdonald@spmcdonaldlaw.com; Stephanie Curtis, Jacobs <Stephanie.Curtis@jacobs.com>; Steven Perry <Steven.Perry@arcadis.com>; Ta, Nicholas@DTSC <Nicholas.Ta@dtsc.ca.gov>; Tony Rossi, Trevet <trossi@trevetinc.com>; Vandeveld, Allison@DTSC <Allison.Vandeveld@dtsc.ca.gov>; Veen Chee Foong, PG&E <Veen.foong@pge.com>; Veronica Dickerson, US DOI <veronica_dickerson@ios.doi.gov>; vincent.garcia@ihs.gov; Virginia Strohl, PG&E <v1s4@pge.com>; William Mack, BLM <wmack@blm.gov>; Charlie Schlinger <schlinger.engeo@gmail.com>; David Clinnick, HDR <David.Clinnick@hdriinc.com>; ericrosenblum@hotmail.com; meggers@eggersenv.com; PGEFile@DTSC <PGEFile@dtsc.ca.gov>; Walt McNab, Jr. <walt.mcnab@gmail.com>; Amelia Flores, CRIT <amelia.flores@crit-nsn.gov>; Blake Watahomigie, Hualapai <bwatahomigie@hualapai-nsn.gov>; calisay17@hotmail.com; Carrie Imus, Hualapai <cimus@frontiernet.net>; Chairwoman Sherry Parker,Hualapai <Sherry.Parker@hualapai-nsn.gov>; Chase Choate, Quechan <c.choate@quechantribe.com>; Christopher Nicosia, Twenty-Nine Palms <Christopher.Nicosia@29palmsbomi-nsn.gov>; cocotcsec@cocopah.com; Elizabeth Benitez, Cocopah <beniteze@cocopah.com>; Eric Jordan, Twenty-Nine Palms <Eric.Jordan@29palmsbomi-nsn.gov>; Joe Rodriquez, Cocopah <rodriquezjo@cocopah.com>; Johnson "JD" Fisher, CRITs <jd.fisher@crit-nsn.gov>; LindaOtero@FortMojave.com; Rena Van Fleet, CRIT <rena.vanfleet@crit-nsn.gov>; rloudbear@critdoj.com; ShanLewis@fortmojave.com; Simone "Ka-Voka" Jackson, Hualapai <Ka-Voka.Jackson@hualapai-nsn.gov>; Williams, Timothy@CDSS-Import <timothywilliams@fortmojave.com>; Toni Carlyle, CRIT <Toni.Carlyle@CRIT-NSN.gov>; Ahmad, Farrukh@DTSC <Farrukh.Ahmad@dtsc.ca.gov>; Frank Lenzo, Arcadis <Frank.Lenzo@arcadis-

us.com>; Greg Foote, Arcadis <Greg.Foote@arcadis.com>; Jay Piper, Jacobs <jay.piper@jacobs.com>; Keith Sheets, Jacobs <keith.sheets@jacobs.com>; Rich Juricich, CRB <rjuricich@crb.ca.gov>; Vigil, David@Wildlife <David.Vigil@wildlife.ca.gov>
Subject: TPK MW-DD Location Update

Morning Everyone,

PG&E on May 29th proposed an alternative location to MW-DD. Please see attached letter.

During the Site Walk on June 16, 2025 the option of moving MW-DD into the IM-3 Road was discussed. The topic of MW-DD location potentially will be discussed during the CWG/ TWG meeting.

Thank you and let me know you have any questions.

DTSC Department of Toxic Substances Control

Christopher Ioan, at your service
Hazardous Substance Engineer
Site Mitigation and Restoration Program
Email:Christopher.Ioan@dtsc.ca.gov
Work Phone: 714-484-5365
Department of Toxic Substances Control

United States Department of the Interior
California Department of Toxic Substances Control

ELECTRONIC SUBMISSION

December 23, 2014

Subject: Directives on Outstanding Issues on the Basis of Design Report/ Pre-Final Design (90% Design) Supplemental Package for PG&E Topock Compressor Station Remediation Site.

Dear Ms. Meeks:

The Department of the Interior (DOI) and the Department of Toxic Substances Control (DTSC) jointly as lead agencies (the Agencies) have deliberated on input from Tribes[1] and stakeholders, information provide during the October 29 & 30 and December 10, 2014 Technical Working Group (TWG) Meetings, correspondence received from the Tribes on December 1 & 2, 2014, and on information provided in the Basis of Design Report and Pre-Final (90%) Groundwater Remedy Design submittal in providing our direction to Pacific Gas and Electric Company (PG&E) concerning elements requiring further development in the pre-final design stage. These elements are to be addressed in the supplemental design package under development by PG&E. This letter provides the Agencies' preliminary directives for proceeding with the 90% groundwater remedy supplemental design document. Final direction will be based on the Agencies review of comments from Tribes and stakeholders and information gained during DOI and the Bureau of Land Management (BLM) consultation meetings with Tribal Councils and with the Topock Project Tribal Representatives. This direction will be provided by the Agencies during the comment and response to comments periods of the 90% design package.

[1] The Topock project area is culturally and spiritually significant to nine federally-recognized tribes. Of the nine tribes in the area, the Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes ("CRIT"), Fort Mojave Indian Tribe ("FMIT") and Hualapai Tribal Nation (hereafter collectively referred to as "the Tribes") have taken the most interest in the project and regularly participate in meetings and provide detailed comments on issues pertaining to site cleanup.

Remedy Monitoring

I. Arsenic Monitoring Wells

PG&E originally proposed a location for MW-EE during the February 11, 2014 TWG Meeting. Tribal input received during subsequent discussion was that the Tribes were opposed to that location. On November 18 and subsequently discussed in the November 19th TWG meeting, the Tribes proposed a Tribal Alternative MW-EE location on a .pdf map. In the final input matrix received from the Tribes on December 1, 2014, the Tribes proposed that Tribal Alternative well MW-EE should be considered a "future provisional" well depending on groundwater monitoring data from other wells due to the disturbance that would be required with respect to cultural values. The Agencies agree that installation of MW-EE can be considered a provisional well and installation will be evaluated further based on data received during construction of the IRL wells and remedy monitoring. MW-EE will be installed if data from any arsenic monitoring wells 150 feet from their respective injection point indicate an exceedance of the water quality criterion (MCL of 10 mcg/liter). Based on review of monitoring data, the Agencies will either direct PG&E to install the well at the predetermined Tribal Alternative MW-EE location or, working with PG&E and the Tribes, determine an alternative location that better matches the desired outcome. For the purpose of the supplemental design, PG&E should consider the Tribal input tabulated in the December 1 matrix and specify all locations of proposed arsenic monitoring wells in the supplemental design package. As stated, further discussion will be held with the Tribes during consultation meetings and the agencies will provide final direction to PG&E during our comment and response to comments period of the 90% design package.

II. Groundwater Plume Boundary Monitoring

In order to delineate the western most edge of the groundwater plume, additional monitoring wells MW-U and MW-V were proposed and discussed at the June 18 and 19, 2014 Technical Working Group meeting. A second site walk was also held during the October 16 Technical Working Group meeting to confirm the location of MW-V. Although the Tribes final well location matrix of December 1 identified a changed location for MW-V, the Agencies request that PG&E retain the field location identified during the October 16 meeting in the supplemental design based on the known plume boundary. The Agencies will further consider the timing of installation and location of this well after additional discussions with Tribes and PG&E. Agencies anticipate MW-V to be installed only if necessary based on monitoring well data collected during remedy construction.

III. Groundwater Capture Zone Monitoring

The capture zone monitoring in the 60% Design was inadequate. Capture zone monitoring must provide definitive criteria and sufficient data that would allow DTSC to meet the plume control determination as specified in Exhibit A5a of the DTSC 2012 settlement with FMIT and to enable DTSC to reach findings required under Exhibit A1 and A2 for decommissioning of IM-3. As stated in Exhibit A5a of the settlement agreement, PG&E must demonstrate consistency of model projections of the groundwater flow with transport model and field data.

To reiterate the Agencies position described in the April 4, 2014 directive letter, the capture zone must be clearly defined and illustrated in three dimensions. Well gradient pairs must be established that will provide sufficient information to determine whether groundwater extraction is providing the hydraulic influence and capture. Our April 4 letter suggested the use of slant wells under the river for use in hydraulic assessment. The agencies have re-evaluated this position when considering technical input received during the July and October TWG meetings and direct PG&E to include monitoring wells MW-X and MW-Y, located along the access road adjacent to the Colorado River, in the supplemental design package. Further discussion will be held with the Tribes during consultation meetings and the agencies will provide final direction to PG&E during the comment and response to comment periods of the 90% design package.

Injection Wells

The Fort Mojave, Cocopah and Hualapai Indian Tribes provided short descriptions of alternative locations for inner recirculation loop injection well IRL-1 and freshwater well FW-1 in letters and tables provided on December 1 & 2, 2014. The Agencies would like PG&E to evaluate these alternative locations, determine if they are feasible, and provide a write-up in the supplemental design package regarding this evaluation and the preferred locations for these wells.

Construction Staging Areas

With respect to construction staging areas, the Agencies acknowledge the need for PG&E to have sufficient staging and material storage within close proximity to areas of construction. After considering all proposed areas near the areas of construction, the Agencies provided direction to PG&E to identify the minimum number of locations necessary in the 90% design when considering input from the Tribes found in the January 2014 version of the soil staging and storage area matrix. The Fort Mojave, Cocopah and Hualapai Indian Tribes provided written input on these locations in letters and tables provided on December 1 & 2, 2014. The Agencies direct PG&E to further examine and consider the Tribal input provided in the attached tables (Attachments 1 – 3 from FMIT, Cocopah and Hualapai Indian Tribes respectively) and provide clarification on the construction/staging/soil storage terminology and to provide detailed descriptions of the proposed use of the areas opposed by the Tribes as well as justification for the necessity of using these areas during construction and remedy implementation. Based on this information and further consultation with the Tribes, the agencies will provide final direction to PG&E as part of the comment and response to comments period of the design.

Bat Cave Wash Crossing

The current design package includes aboveground pipe bridges for aerial crossing of Bat Cave Wash—one pipe bridge crosses the southern portion of the wash near the TCS and the other pipe bridge crosses the northern portion of the wash in the uplands. During the October 29 & 30 TWG meetings, PG&E provide information regarding installation of pipes and conduits through box culverts located in the IM-3 access road, an alternative for the northern crossing. The Hualapai Tribe provided additional options for the

northern crossing of Bat Cave Wash in their December 3, 2014 transmittal (Attachment 4) but defer to the Fort Mojave Indian Tribe, as the land owner in that area. To date, the Agencies have not received any input on this matter from the Fort Mojave Indian Tribe; therefore, PG&E is directed to proceed with their preferred design for the Bat Cave Wash crossing, considering all input received to date.

The Agencies hereby direct PG&E to provide the complete supplemental design package for review by the Agencies, Tribes and stakeholder. Once received, DTSC will forward the package to all reviewing parties for an additional 30 day review prior to concluding the 90% design comment period. BLM will concurrently provide the supplemental design package to the nine federally-recognized Tribes for Section 106 consultation for 30 days. PG&E is directed to submit the supplemental design package to the Agencies for distribution by February 2, 2015.

If you have any questions, please contact Pamela Innis at (303) 445-2502 or Aaron Yue at (714) 484-5439.

Sincerely,

Pamela S. Innis
DOI Topock Remedial Project Manager

Aaron Yue
Project Manager
Department of Toxic Substances Control

Attachments

cc: PG&E Topock Consultative Work Group
PG&E Topock Geo/Hydro Technical Work Group
Tribal Representatives in PG&E Project Contact List
Technical Review Committee
DOI Topock Administrative Record