

## Work Variance Request Form

Groundwater Remedy Phase 1 Construction, PG&E Topock Compressor Station, Needles, California

### PG&E TOPOCK GROUNDWATER REMEDIATION PROJECT

#### Work Variance Request # 11 – Proposed New Mitigation Planting Areas

Request Prepared By: PG&E

Date Submitted: 01/10/2022

Variance Request No.: 11

Location: Floodplain, California side of the Colorado River

Request Approval From: DTSC and DOI

Date Approval Required: 01/17/2022

Map Area: N/A

Landowner/Land Manager: Havasu National Wildlife Refuge (HNWR)/US Fish and Wildlife Services

Current Vegetative Cover/Land Use: Tamarisk (Recently Removed by HNWR)/Empty Lot

Existing Sensitive Resource? ☒ No ☐ Yes, Specify:

Variance From: ☐ Mitigation Measure ☐ Work Plan/Procedure ☐ Response to Comments

☐ Drawing ☐ Permit Condition ☒ Other: Planting Locations

#### 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

☐ Aesthetics

☒ Biological Resources

☐ Noise

☐ Water Resources

☐ Soils

☐ Paleo Resources

☐ Cultural Resources

☐ Hydrology and Water Quality

#### Description and Justification:

In 2015, PG&E identified fourteen mitigation planting areas throughout the Project Area informed by the technical memorandum, *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts* (CH2M Hill 2015b) (see Figure 1). The fourteen mitigation planting areas, comprising approximately 8.5 acres, were grouped into two upland habitat revegetation (UHR) units, six riparian habitat revegetation (RHR) units, and six historical floodplain revegetation (HFR) units. Some of the factors considered during selection of proposed planting areas included existing disturbance, unit size, habitat requirements of protected plant species (upland or riparian), surface soil texture, existing plants (species and percent cover), accessibility, and nearby infrastructure and cultural constraints.

In 2018, at the beginning of the Phase 1 Groundwater Remedy construction, PG&E removed and transplanted protected plant species that were identified to be impacted by construction prior to construction activities occurring. These plants were transplanted to mitigation planting area UHR-1 (see Figure 1). Unfortunately, all the transplants, except for the beavertail cactus, failed. PG&E needs to provide replacement plantings for these failed transplants in addition to replacement plantings for the loss of additional protected plants that could not be avoided during construction.

In 2021, PG&E began preparing to implement the mitigation plantings scheduled for late winter 2022 and reassessed the existing mitigation planting areas. PG&E decided to explore new opportunities for more suitable mitigation planting areas in hindsight of the failed transplant effort. While PG&E was identifying possible new planting areas, the

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Havasu National Wildlife Refuge (HNWR) identified a need to remove tamarisk in the floodplain to improve the riparian habitat for protected wildlife species, which would open further areas for PG&E to plant within the floodplain. PG&E decided to investigate two new areas (Area C and Area D) within the floodplain in California as suitable candidates for mitigation plantings (see Figure 1). In September 2021, PG&E conducted soil sampling and soil moisture studies in the existing and newly identified mitigation planting areas to complete an in-depth investigation of all the areas to determine which would be most suitable for the mitigation plantings. A summary of these studies is provided in Attachment A of this WVR (a detailed report will be submitted at a later date).

To assess soil moisture availability to existing young riparian shrubs and trees, soil moisture measurements were also taken in September 2021 adjacent to existing young individuals of four riparian species proposed for planting: blue palo verde, honey mesquite, desert smoke tree, and catclaw acacia. The soil moisture data shown in Attachment A suggest that young riparian trees such as honey mesquite and palo verde become established when soil moisture equals or exceeds 65% at 12 inches and 79% at 12 inches. Young desert smoke tree and catclaw acacia occurred where subsurface moisture was 32% to greater than 50%, if areas with compacted natural soils are excluded.

As a minimum threshold of 30% subsurface soil moisture is needed to support riparian shrubs and trees in the hot month of September, the following proposed revegetation areas would be excluded for riparian shrub and tree establishment: RHR-1-1, 2-1, 3-1, 4-1; all HFR areas. Proposed revegetation areas that could support riparian shrubs and trees, based on soil moisture data include: RHR-5-1, RHR-6-1, all of Area C, and all of Area D.

Overall, the results indicate that Area C and D are high in calcium, sodium, chloride and boron. These higher salt concentrations can be amended in the soil prior to planting.

Therefore, PG&E is proposing to use new planting Area C (3.9 acres) and Area D (0.95) acres along with the existing planting areas RHR-6 (0.91 acres), RHR-5 (.56 acres) and UHR-1 (1.3 acres). The total acreage proposed now to be used for the planting areas is 7.62 acres, a reduction of 0.88 acres from the previously proposed areas of 8.5 acres planned under the memo *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts*. Of the existing planting areas, only RHR-5 and RHR-6 are suitable sites for the riparian plants that require a higher soil moisture. The combined total area for both these planting areas, 1.47 acres, is not enough area for the total mitigation riparian planting area need.

This Work Variance Request proposes to modify **only** these mitigation **planting locations** identified in the *Assessment of Proposed Mitigation Planting Areas* memo. All requirements included in the following approved restoration plans will still be followed:

- *Aesthetics and Visual Resources Protection and Revegetation Plan,*
- *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats,*
- *Havasu National Wildlife Refuge Habitat Restoration Plan,* and
- *Plan for Culturally Significant Plants*

The new proposed planting areas are within the SEIR project area. New access routes will be needed for access within the new proposed mitigation planting areas for maintenance and monitoring, but the locations are yet to be determined. The new planting areas were included in previous special-status species surveys except for a small portion where floristic surveys were not completed in the Spring of 2017. The majority of the new planting areas were included in the pre-construction floristic surveys in Spring 2017. The small areas not included in the Spring 2017

floristic survey was included in the 2013 botanical survey and no special status plant species were observed then. No special-status plant species are expected to occur in the non-surveyed new planting areas because the soil where the tamarisk were removed at the end of last year is high in soluble salts.

Also, a preliminary desktop review of the newly proposed planting areas concluded that there is little to no potential for impacts upon historical or cultural resources. The known boundaries for cultural sites and isolates do not overlap with the boundaries of the proposed mitigation planting areas. A historical site located in the southern portion of Area C on the slope of the National Trails Highways embankment will be avoided.

It should be noted that based on recent soil moisture study, the estimated maximum freshwater usage for the initial salt leaching is 465,000 gallons (1.43 acre-feet) and for the watering of plants over a 3-year period is 4,000 gallons per week for plants in the floodplain (a total of 624,000 gallons or 1.91 acre-feet) and 135 gallons per weeks for the non-riparian mitigation plants in the UHR-1 area. PG&E estimated that it may take up to 3 years for native plants in the floodplain to establish tap root that extends to the groundwater. After 3 years, PG&E anticipates that the plants will be fully-established and additional watering will not be needed.

In keeping with current site practice, a last look will be conducted prior to the start of site preparation. Onsite biologists will also conduct pre-construction survey. Existing monitoring protocols will be implemented during planting to ensure resource protection.

Lastly, on December 15, 2021, PG&E received a written support from the HNWR for mitigation planting in the new proposed areas, and help to convert an area with poor habitat into a newly restored floodplain with native trees and shrubs.

Approval Signatures:

 01/10/2022  
PG&E Project Manager Date

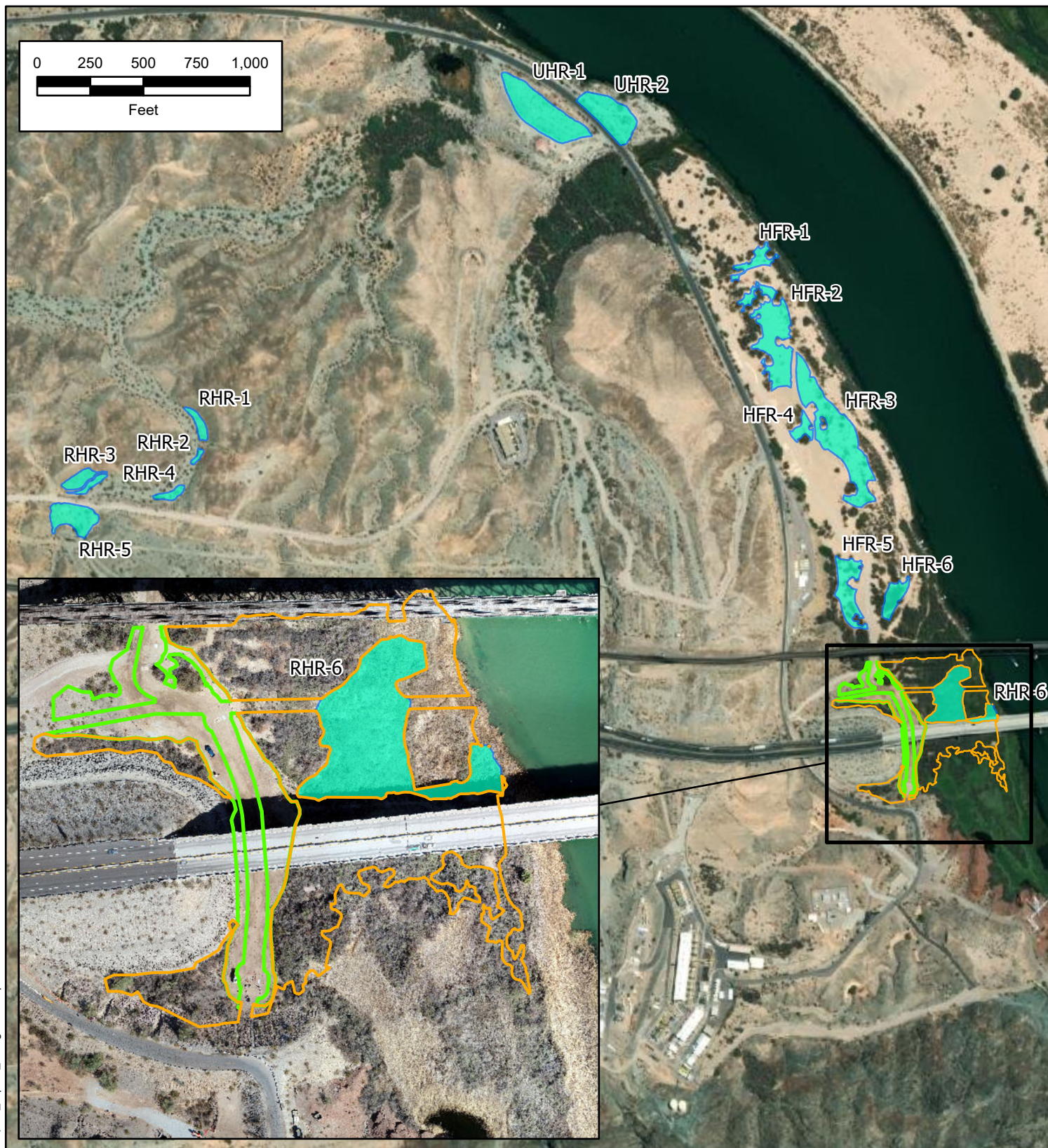
 01/14/2022  
Approving Agency Date

 (DTSC) 1/19/2022  
Approving Agency Date

**Attachment A – Results of soil moisture readings at the existing and candidate mitigation sites**

| Soil Moisture Readings at the Mitigation Sites |   |   |
|--|---|---|
| Mitigation Planting Area Location              | Moisture Reading<br>(Soil moisture taken at 8" depth and 12" depth)                   | Notes                                   |
| <b>UHR-1-1</b>                                 | soil moisture 15-30%, probe could not penetrate deeper than 4 inches                  | Location of existing transplants        |
| <b>UHR-1-2</b>                                 | soil moisture 15-30%, probe could not penetrate deeper than 4"                        |   |
| <b>UHR-2-1</b>                                 | soil moisture 15-30%, probe could not penetrate deeper than 5 inches                  |   |
| <b>UHR-2-2</b>                                 | soil moisture 15-30%, probe could not penetrate deeper than 3 inches                  |   |
| <b>RHR-1-1</b>                                 | soil moisture 17.4% at 8 inches, 27.8% at 12 inches                                   |   |
| <b>RHR-2-1</b>                                 | soil moisture 18.5% at 8 inches, 24.7% at 12 inches                                   |   |
| <b>RHR-3-1</b>                                 | soil moisture 33.7% at 8 inches, 20.4% at 12 inches                                   |   |
| <b>RHR-4-1</b>                                 | soil moisture 26.5% at 8 inches, 30.5% at 12 inches                                   |   |
| <b>RHR-5-1</b>                                 | soil moisture 63.3% at 8 inches, 61.7% at 12 inches                                   |   |
| <b>RHR-6-1</b>                                 | soil moisture 69.5% at 8 inches, 86.1% at 12 inches                                   |   |
| <b>HFR-1-1</b>                                 | soil moisture 8.3% at 8 inches, 9.8% at 12 inches                                     |   |
| <b>HFR-2-1</b>                                 | soil moisture 3.2% at 8 inches, 5.5% at 12 inches                                     |   |
| <b>HFR-3-1</b>                                 | soil moisture 5.2% at 8 inches, 9.5% at 12 inches                                     |   |
| <b>HFR-4-1</b>                                 | soil moisture 7.8% at 8 inches, 9.5% at 12 inches                                     |   |
| <b>HFR-5-1</b>                                 | soil moisture 6.9% at 8 inches, 9.2% at 12 inches                                     |   |
| <b>HFR-6-1</b>                                 | soil moisture 12.6% at 8 inches, 15.3% at 12 inches                                   |   |
| <b>C-1</b>                                     | soil moisture 66.2% at 8 inches, 88.5% at 12 inches                                   | C-1 through C-5 are from the new Area C |
| <b>C-2</b>                                     | soil moisture 83.6% at 8 inches, 87.9% at 12 inches                                   |   |
| <b>C-3</b>                                     | soil moisture 69.5% at 8 inches, 86.1% at 12 inches                                   |   |
| <b>C-4</b>                                     | soil moisture 62.3% at 8 inches; silt mixed with gravel, could not dig below 8 inches |   |
| <b>C-5</b>                                     | soil moisture 30.6% at 8 inches, 38.5% at 12 inches                                   |   |
| <b>D-1</b>                                     | soil moisture 75.2% at 8 inches; could not dig below 8 inches                         | D-1 through D-5 are from the new Area D |
| <b>D-2</b>                                     | silt mixed with gravel; compacted could not dig below 4 inches                        |   |
| <b>D-3</b>                                     | silt mixed with gravel; compacted could not dig below 4 inches                        |   |
| <b>D-4</b>                                     | soil moisture 78% at 8 inches; could not dig below 8 inches                           |   |
| <b>D-5</b>                                     | silt mixed with gravel; compacted could not dig below 4 inches                        |   |





## Legend

Previously Approved Planting Area

### Proposed New Planting Area

Area D - New Planting Area

Area C - New Planting Area (HNWR Tamarisk Removal Area)

**PG&E TOPOCK COMPRESSOR STATION  
NEEDLES, CALIFORNIA**

**PLANTING AREA COMPARISON**



 **ARCADIS**

**FIGURE  
1**

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

Work Variance Request No. 11

Date: 1/10/2022

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

2. Are all components of the WVR staying within an infrastructure alignment in the approved final design?

☐ Yes ☒ No

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 (For CEQA considerations, see 6 and 7 below)

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

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 ☐ 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



Future Activity Allowance Determination Matrix

WVR No. 11

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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

Table 3-5 shows that Phase 1 construction will use approximately 38.54 acre-feet of water. Although the estimated total volume of freshwater usage for mitigation planting in the WVR (3.34 acre-feet for native plants in the floodplain plus a minimal amount for the cactus in the upland) exceeds the total water usage amount for mitigation planting (0.04 acre-feet) for Phase 1 in Table 3-5 of the SEIR, the total water volume for Phase 1 would remain below the anticipated SEIR Phase 1 water volume. Specifically, as of December 31, 2021, the current volume of freshwater used for Phase 1 is about 24.19 acre-feet. With approval of the WVR, the Phase 1 water consumption total would be about 28 acre-feet, which is about 10.54 acre-feet less than the Phase 1 water volume in Table 3-5 and analyzed in the SEIR.

Conclusion: WVR No. 11

☒ is not a FAA ☐ is a FAA

Signature of DTSC reviewer: \_\_\_\_\_



Date: 1/19/2022