CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Subsequent Environmental Impact Report Addendum for the **Modification of Replanting Areas**

for the
Pacific Gas and Electric Company Topock Compressor Station
Final Groundwater Remediation Project

SCH# 2008051003

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Contents

1.0 Introduction and Purpose

This Addendum was prepared in accordance with the California Environmental Quality Act (CEQA) and the *CEQA Guidelines*. This document has been prepared to serve as an Addendum to the previously certified Subsequent Environmental Impact Report (SEIR) in April 2018 for the Pacific Gas and Electric Company, Topock Compressor Station (Station) Final Groundwater Remediation Project (Approved Project). The certified SEIR addressed the potential environmental impacts associated with the construction, operation, and decommissioning of facilities that would be necessary to implement the approved Topock Compressor Station groundwater remedy. For the purpose of this addendum, the term "modification" is synonymous with "change".

This SEIR Addendum considers the potential environmental effects associated with a modification in the replanting areas initially identified in Appendix V – *Technical Memorandum: Assessment of Proposed Mitigation Planting Areas for the Final Groundwater Remedy* (CH2M Hill, 2015) of the 2015 Construction/ Remedial Action Work Plan (C/RAWP) for the Final Groundwater Remedy. The Department of Toxic Substances Control (DTSC) approved the C/RAWP in 2018 as part of the final remedy design documentation. Appendix V of the C/RAWP proposed fourteen mitigation planting areas within the groundwater remedy Project Area.

However, in a soil study conducted in September 2021, PG&E determined that many of the proposed planting areas identified in Appendix V were not suitable for replanting. The soil study also identified one specific location near the Riparian Habitat Revegetation (RHR) unit 6 location (see Figure 1) that provided the optimum moisture content and depth to groundwater for replanting (see table below). PG&E explored the surrounding areas and proposed to modify the mitigation revegetation areas to include an expanded area near RHR 6. The newly identified areas are identified in Table 1 and Figure 1 as areas C and D. The new proposal will remove units RHR 1, 2, 3, 4 and all Historical Floodplain Revegetation (HFR) areas.

This modification represents a reduction of approximately 0.88 acres from the previously identified 8.5 acres associated with the mitigation replanting areas after removal of the RHR 1, 2, 3, 4 and HFR areas. Aside from the modification in replanting locations, no other provisions, plans, or procedures for replanting will change from the approved 2015 C/RAWP.

This Addendum has been prepared pursuant to *CEQA Guidelines* Section 15164 and addresses the proposed replanting locations relative to the Approved Project. The Approved Project and its associated documentations, including the Final Remedy Design, the 2011 Final EIR and the Adopted SEIR are available for review at: https://dtsc-topock.com/documents

1.1 CEQA Environmental Review Background

On January 31, 2011, DTSC approved the In-Situ Treatment with Freshwater Flushing alternative as described in the Final CMS/FS for Solid Waste Management Unit 1 (SWMU 1)/Area of Concern 1 (AOC 1) and AOC 10 (Final CMS/FS) after certifying the Groundwater Final Environmental Impact Report (FEIR) which included mitigation measures for replacement replanting of damaged or removed native vegetations. DTSC also adopted an Addendum to the Groundwater FEIR in 2013, which expanded the Project Area and considered the potential environmental effects of alternate well locations for a freshwater source in Arizona. DTSC prepared and certified an SEIR on April 23, 2018 based on additional details of the groundwater remedy design, construction, operation and maintenance plans provided by

PG&E which carried forward the mitigation replanting requirements. In addition, DTSC prepared and adopted an Addendum on April 8, 2021 for a proposed pump test at an existing well (TW-01) to gather additional hydro-geologic properties at the site.

1.2 Basis for Decision to Prepare an Addendum

The California Environmental Quality Act (CEQA) requires that the proposed project be reviewed to determine the environmental effects that would result if the project were approved and implemented. California Public Resources Code Section 21166 and *CEQA Guidelines* Sections 15162 and 15164 set forth the criteria for determining whether a subsequent Environmental Impact Report (EIR), subsequent negative declaration, addendum, or no further documentation be prepared in support of further agency action on the project. Pursuant to *CEQA Guidelines* Section 15162, a subsequent EIR or negative declaration shall be prepared if any of the following criteria are met:

> *(a) When an EIR has been certified or negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:*
>
> > *(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*
> >
> > *(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
> >
> > *(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:*
> >
> > > *(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;*
> > >
> > > *(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;*
> > >
> > > *(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or*
> > >
> > > *(D)Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.*
>
> *(b) If changes to a project or its circumstances occur or new information becomes available after*

adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a). Otherwise the lead agency shall determine whether to prepare a subsequent negative declaration, and addendum, or no further documentation.

In determining whether an Addendum is the appropriate document to analyze the proposed modifications to the project and its approval, *CEQA Guidelines* Section 15164 (Addendum to an EIR or Negative Declaration) states:

a) The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.

b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.

c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.

d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project.

e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

As demonstrated in the environmental analysis provided in Section 3.0 (Environmental Analysis), the Revised Project does not meet the criteria for preparing a subsequent EIR or negative declaration as established under CEQA Guidelines Section 15162.

2.0 Project Description

2.1 Project Location

PG&E Topock Compressor Station is located in the Mojave Desert, San Bernardino County, approximately 12 miles southeast of the City of Needles, California, and approximately 4 miles south of the community of Golden Shores, Arizona and 1 mile southeast of the Moabi Regional Park. The Station is within a 66.8-acre parcel of land owned by PG&E that is located approximately 1,500 feet west of the Colorado River and less than 1 mile south of Interstate 40. The 2018 SEIR Groundwater Remedy Project Area includes lands owned by PG&E and property adjoining the Station owned and/or managed by a number of government agencies and private entities, including the Havasu National Wildlife Refuge (NNWR), which is managed by the U.S. Fish and Wildlife Service (USFWS); lands managed by the U.S. Department of the Interior (DOI), Bureau of Land Management (BLM); U.S. Bureau of Reclamation (BOR) managed by the BLM; the Burlington Northern Santa Fe Railway (BNSF); California Department of Transportation (Caltrans)-leased land; Arizona Department of Transportation (ADOT); California
State Lands Commission (CSLC) lands; lands owned by the Fort Mojave Indian Tribe (FMIT); lands leased by San Bernardino County (leased lands are managed by BLM); and privately owned lands.

The Groundwater FEIR identified a 779.2-acre Project Area within which all activities were anticipated to occur. The Addendum to the Groundwater FEIR in 2013 resulted in an additional 74.5 acres to the Project Area, on the Arizona side of the Colorado River, to account for the additional freshwater supply source. The combined area of the Groundwater FEIR and Addendum totals 853.7 acres. However, after completion of the Final Remedy Design and refinement of the Project Area that would be used for the Final Groundwater Remedy Project, the 2018 SEIR project area was reduced to 762 acres in which the Final Groundwater Remedy Project would occur, including construction, long-term operation and maintenance, and decommissioning phases. The proposed mitigation replanting areas are all within the approved 2018 SEIR Project Area on lands owned by the U.S. Fish and Wildlife Service within the Havasu National Wildlife Refuge.

2.2 Environmental Setting

The Topock Compressor Station is located in a sparsely populated, rural area. The Project Area is culturally significant and has important spiritual meaning to local Native American Indian tribes. The area is also within the Area of Potential Effects that has been defined by the U.S. DOI under Section 106 of the National Historic Preservation Act for purposes of Native American consultation by federal agencies associated with the Station soil and groundwater investigation and remedial activities. Public lands in the area are owned and/or managed by several federal and regional agencies, including the Bureau of Land Management, USFWS, US Bureau of Reclamation, and San Bernardino County.

Dominant features of the area include the Colorado River to the east; the Chemehuevi Mountains to the south; the Burlington Northern Santa Fe railroad tracks and bridge; and Interstate 40, which links Barstow, California and Topock, Arizona. Topography in the area is abrupt, rising from around 450 feet above mean sea level at the Colorado River to over 1,200 feet above mean sea level within 1 mile to the south and southwest.

The area is characterized by arid conditions and high temperatures. The surrounding land consists of a series of terraces divided by desert washes. The landscape within the project area is considerably eroded. The lands are made of small to moderately-sized terraces with very steep slopes. Terraces occurring in the project area are homogeneous, composed of rocky soils with very sparse vegetation. Structurally diverse vegetation in the project area is primarily limited to the Colorado River floodplain and the ephemeral washes.

Average temperatures range from a low of 42 degrees Fahrenheit (°F) in December and January to a high of over 109°F in July. Average annual precipitation is 4.5 inches with rainfall occurring during summer thunderstorms between July and September and winter rains between January and March. Very little rainfall occurs in May and June (Western Regional Climate Center 2008).

2.2.1 Ecological Setting

The site is accessed from Park Moabi Road off I-40. The Station, which is located within the Project Area, is situated approximately 600 feet west of the Colorado River and is surrounded by the Havasu National Wildlife Refuge. As described in the 2015 Desert Tortoise Habitat Survey report, the topography is made up of deep washes, arroyos, and ravines separated by steep slopes, rolling hills, and desert pavement. Desert riparian vegetation occurs within dry washes throughout the Project Area. Land cover around the Station is composed of upland communities dissected by ravines and desert washes. The

desert pavement and rolling hills are sparsely vegetated by species common in the creosote vegetation community, predominantly creosote bush (Larrea tridentata) and white bursage (Ambrosia dumosa). Mojave Desert wash scrub dominates the ephemeral washes and ravines, and ranges in density from sparse cover to areas that are impassable on foot. Prevalent species in the washes and ravines include cat-claw acacia (Senegalia greggii), palo verde (Parkinsonia florida), and desert lavender (Hyptis emoryi). The primary terrestrial plant community types are creosote bush scrub, tamarisk thickets, arrow weed thickets, blue palo verde woodlands, catclaw acacia thorn scrub, foothill palo verde desert scrub, allscale scrub, quailbush scrub, western honey mesquite bosque, screwbean mesquite bosque, and upland mustards.

The diversity and abundance of wildlife species encountered are influenced by the proximity of the Project Area to the creosote-dominated desert and the Topock Marsh, a large wetland with abundant wildlife (GANDA 2012). Avian species commonly associated with the river include American coot (Fulica americana), mallard (Anas platyrhynchos), pied-billed grebe (Podilymbus podiceps), great egret (Casmerodius albus), great blue heron (Ardea herodias), northern roughwinged swallow (Stegidopteryx serripennis), and belted kingfisher (Ceryle alcyon). Other avian species found in the upland areas include red-tailed hawk (Buteo jamencensis), Gambel's quail (Callipepla gambelii), mourning dove (Zenaida macroura), white-winged dove (Zenaida asiatica), common raven (Corvus corax), song sparrow (Melospiza melodia), Canyon wren (Catherpes mexicanus), brewer's blackbird (Euphagus cyanocephalus), great-tailed grackle (Quiscalus mexicanus), turkey vulture (Cathartes aura), greater roadrunner (Geococcyx californianus), lesser nighthawk (Chordeiles acutipennis), rock dove (Columba livia), verdin (Auriparus flaviceps), and black-tailed gnatcatcher (Polioptila melanura) (AECOM 2011; GANDA 2012). Observations during the 2012 avian surveys also included detections of Yuma clapper rail (Rallus longirostris yumanensis), Arizona Bell's vireo (Vireo bellii arizonae), brownheaded cowbird (Molothrus ater), and a great blue heron nest (GANDA 2012).

Mammals that may occur in or near the Project Area include deer mouse (Peromyscus maniculatus), Merriam kangaroo rat (Dipodomys merriami), whitetail antelope squirrel (Ammospermophilus leucurus), desert woodrat (Neotoma lepida), California ground squirrel (Spermophilus beecheyi), desert cottontail (Sylvilagus audubonii), Audubon's cottontail (Sylvilagus audubonii), black-tailed hare (Lepus californicus), coyote (Canis latrans), desert kit fox (Vulpes macrotis), American badger (Taxidea taxus), bobcat (Lynx rufus), striped skunk (Mephitis mephitis), beaver (Castor canadensis), raccoon (Procyon lotor), burro (Equus asinus), and bighorn sheep (Ovis canadensis nelsoni) (AECOM 2011; GANDA 2012). Bat species with a potential to occur on the Project Area include Yuma myotis (Myotis yumanensis), California myotis (Myotis californicus), cave myotis (Myotis vellifer), Arizona myotis (Myotis occultus), western canyon bat (Parastrellus hesperus), pallid bat (Antrozous pallidus), Mexican free-tailed bat (Tadarida brasiliensis), big brown bat (Eptesicus fuscus), western red bat (Lasiurus blossevillii), southern yellow bat (Lasiurus xanthinus), hoary bat (Lasiurus cinereus), pocketed free-tailed bat (Nyctinomops femorosaccus), big free-tailed bat (Nyctinomops macrotis), western mastiff bat (Eumops perotis), California leaf-nosed bat (Macrotus californicus), and Townsend's big-eared bat (Corynorhinus townsendii). Based on the results of the spring 2021 Roosting Bat Survey, the following species are considered present on the Project Area: Yuma myotis, cave myotis, California myotis, western canyon bat, big brown bat, hoary bat, Townsend's big-eared bat, pallid bat, Mexican free-tailed bat, pocketed free-tailed bat, western mastiff bat. The Spring 2021 survey concluded that the bat population at the site are stable or are increasing in numbers and that the current protective measures for roosting bats remain successful.

Reptiles that may occur in the area include chuckwalla (Sauromalus obesus), side-blotched lizard (Uta stansburiana), western whiptail lizard (Cnemidophorus tigris), zebra-tailed lizard (Callisaurus draconoides), desert iguana (Dipsosaurus dorsalis), coachwhip (Masticophis flagellum), gopher snake

(Pituophis melanoleucus), and western diamondback rattlesnake (Crotalus atrox) (AECOM 2011; GANDA 2012).

"Special-status" species are plants and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Thirty-three special-status fish and wildlife species, one insect, and eight special-status plant species were evaluated for their potential to occur in the Project Area. Four species were either observed in or near the Project Area or determined to have potential to occur in the Project Area, and sixteen fish and wildlife species were determined to have potential to occur in the Project Area during at least part of the year.

2.2.2 Hydrogeologic Setting

The Topock site is situated in a basin-and-range geologic environment in the Mohave Valley. The Colorado River is the main source of water to this groundwater basin, but at the southern end where the site is located, groundwater is fed by a modest amount of local recharge from mountain runoff. The most prominent geologic structural feature in the study area is a Miocene-age, low-angle normal fault (referred to as a detachment fault) that forms the northern boundary of the Chemehuevi Mountains found to the southeast of the study area. The surface expression of the Chemehuevi detachment fault is evident as a pronounced northeast-southwest lineament that can be traced along the northern boundary of the Chemehuevi Mountains, terminating at the abrupt bend in the Colorado River east of the Compressor Station.

The site is located at the southern (downstream) end of the Mohave Valley groundwater basin. On a regional scale, groundwater in the northern and central area of the valley is recharged primarily by the Colorado River, while under natural conditions net groundwater discharges occurs in the southern area, above where the alluvial aquifer thins near the entrance to Topock Gorge. The groundwater directly beneath the Topock site is derived mostly from the relatively small recharge from the nearby mountains. Under natural conditions, groundwater flows from west/southwest to east/northeast across the site.

The Colorado River flows along the eastern and northern boundary of the site and is very dynamic, fluctuating seasonally and daily largely due to upstream flow regulation of water releases primarily at Davis Dam, approximately 41 miles upstream. Parker Dam, which is about 42 miles downstream, plays a smaller role in the river fluctuation pattern, mainly during heavy rain/higher river flow conditions. River level predictions are tied to the Davis Dam release rates and Lake Havasu level behind Parker Dam. Most of the time, the Davis Dam releases are the dominant factor in determining river levels at Topock. River levels at the site fluctuate by 2 to 3 feet per day, and flows vary anywhere from 4,000 to 25,000 cubic feet per second (cfs) according to the dam releases, producing a sinusoidal hydrograph each day. Locally, a floodplain borders both sides of the Colorado River, though the river no longer experiences regular spring floods due to flow regulation from upstream dams.

2.3 Mitigation Replanting Description

As part of the Final Design submittal for the Final Groundwater Remedy, three revegetation plans were included to address impacts to protected plants that would be impacted during construction. Additionally, a separate *Plan for Culturally Significant Plants* was prepared to address ethnobotanically significant plants, which PG&E submitted in compliance with the federal Cultural and Historic Properties

Management Plan. These plans specifically addressed protected plant impacts on the Havasu National Wildlife Refuge (HNWR) lands (*HNWR Habitat Restoration Plan, CH2M HILL, 2014a*), within jurisdictional areas associated with waters of the U.S. and the State of California (*Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats,* CH2M HILL, 2014b); for mature plants (*Aesthetics and Visual Resources Protection and Revegetation Plan*, CH2M HILL, 2014c); and for ethnobotanically significant plants (*Culturally Significant Plants*, CH2M HILL, 2013).

The 2018 certified SEIR requires that impacts to the above referenced resources be mitigated according to these plans. Also, the *Programmatic Biological Assessment* (PBA) (CH2M HILL, 2014) requires the replacement of any protected plants that are destroyed during construction of the groundwater remedy. Pursuant to mitigation measures AES-1f, BIO-1a, CUL-1a-5 of the 2018 Certified SEIR, and PBA General Measure (GM) 14, PG&E will mitigate for impacts to jurisdictional riparian areas, scenic vistas, indigenous plants, and sensitive and/ or protected habitats under the jurisdiction of USFWS, U.S. Army Corps of Engineers (USACE), and the California Department of Fish and Wildlife (CDFW).

PG&E is proposing to change the locations of most of the mitigation planting locations which were identified in Appendix V of the C/RAWP for Topock Groundwater Remedy project mitigation measures AES-1, BIO-1a, CUL-1a-5 adopted in the Certified 2018 SEIR.

Mitigation Measure AES-1 states that requirements of the *Aesthetics and Visual Resources Protection and Revegetation Plan* shall be implemented throughout the project including replacement planting procedures.

Mitigation Measure BIO-1a states that restoration of jurisdictional areas "shall be guided by the *Havasu National Wildlife Refuge Habitat Restoration Plan* and *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats*, as approved by CDFW, USFWS, and DOI."

Mitigation Measure CUL-1a-5 states that PG&E must implement the provisions in the *Plan for Culturally Significant Plants* should there be any unavoidable impacts to indigenous plants. Those provisions included protocols for replacement plantings.

The **PBA GM 14** states that if any of the protected plants be destroyed, they shall be replaced. To meet the mitigation requirements set forth in these plans and measures, PG&E is required to transplant or replace protected plants that could not be avoided during construction.

Mitigation measures **AES-1, BIO-1a, CUL-1a-5** of the SEIR, cross references the *Aesthetics and Visual Resources Protection and Revegetation Plan*, the *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats*, the *Havasu National Wildlife Refuge Habitat Restoration Plan* and *the Plan for Culturally Significant Plants*, respectively, and state that the planting locations are specified in the final remedy design.

In 2015, PG&E identified fourteen mitigation planting areas throughout the Project Area in Appendix V of the C/RAWP, which is part of the final design. These mitigation planting areas were informed by the technical memorandum, *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts* (CH2M Hill 2015b). These fourteen mitigation planting areas, comprising approximately 8.5 acres, were grouped into two upland habitat revegetation (UHR) units, six RHR units, and HFR units (see Figure 1).

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 Groundwater Remedy construction project, PG&E removed and transplanted protected plant species that were identified to be impacted by construction prior to

construction activities occurring, consistent with measure CUL-1a-5, BIO-1a and the above referenced restoration plans. 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 is required toprovide 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 pursuant to the approved mitigation measures and in accordance with the various revegetation plans identified above.

In 2021, PG&E began preparation to implement the mitigation replanting 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. During this time, the USFWS had identified a need to remove tamarisk in the floodplain of the HNWR to improve the riparian habitat for protected wildlife species. This action opened additional areas for PG&E for replanting within the floodplain. PG&E decided to investigate two new areas within the floodplain in California identified as Area C and Area D in Figure 1 as possible candidates for mitigation replantings.

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.

Table 1 - Soil Moisture Reading

Below are the results of the soil moisture reading at various mitigation replanting areas.

Mitigation Planting Area Location	Moisture Reading (Soil moisture taken at 8” depth and 12” depth)	Comments
UHR-1-1	soil moisture 15-30%, probe could not penetrate deeper than 4 inches	Location of existing transplants
UHR-1-2	soil moisture 15-30%, probe could not penetrate deeper than 4”	None
UHR-2-1	soil moisture 15-30%, probe could not penetrate deeper than 5 inches	None
UHR-2-2	soil moisture 15-30%, probe could not penetrate deeper than 3 inches	None
RHR-1-1	soil moisture 17.4% at 8 inches, 27.8% at 12 inches	None
RHR-2-1	soil moisture 18.5% at 8 inches, 24.7% at 12 inches	None
RHR-3-1	soil moisture 33.7% at 8 inches, 20.4% at 12 inches	None

RHR-4-1	soil moisture 26.5% at 8 inches, 30.5% at 12 inches	None
RHR-5-1	soil moisture 63.3% at 8 inches, 61.7% at 12 inches	None
RHR-6-1	soil moisture 69.5% at 8 inches, 86.1% at 12 inches	None
HFR-1-1	soil moisture 8.3% at 8 inches, 9.8% at 12 inches	None
HFR-2-1	soil moisture 3.2% at 8 inches, 5.5% at 12 inches	None
HFR-3-1	soil moisture 5.2% at 8 inches, 9.5% at 12 inches	None
HFR-4-1	soil moisture 7.8% at 8 inches, 9.5% at 12 inches	None
HFR-5-1	soil moisture 6.9% at 8 inches, 9.2% at 12 inches	None
HFR-6-1	soil moisture 12.6% at 8 inches, 15.3% at 12 inches	None
C-1	soil moisture 66.2% at 8 inches, 88.5% at 12 inches	New Area C
C-2	soil moisture 83.6% at 8 inches, 87.9% at 12 inches	New Area C
C-3	soil moisture 69.5% at 8 inches, 86.1% at 12 inches	New Area C
C-4	soil moisture 62.3% at 8 inches; silt mixed with gravel, could not dig below 8 inches	New Area C
C-5	soil moisture 30.6% at 8 inches, 38.5% at 12 inches	New Area C
D-1	soil moisture 75.2% at 8 inches; could not dig below 8 inches	New Area D
D-2	silt mixed with gravel; compacted could not dig below 4 inches	New Area D
D-3	silt mixed with gravel; compacted could not dig below 4 inches	New Area D
D-4	soil moisture 78% at 8 inches; could not dig below 8 inches	New Area D

D-5	silt mixed with gravel; compacted could not dig below 4 inches	New Area D

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 collected 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 respectively. 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, PG&E excluded the following proposed revegetation areas for riparian shrub and tree establishment: RHR-1-1, 2-1, 3-1, 4-1 and all HFR areas. Based on the study, PG&E concluded that the revegetation areas that could support riparian shrubs and trees would include: RHR-5-1, RHR-6-1, all of Area C, all of Area D, and the UHR areas. The study also indicates that Area C and D are high in calcium, sodium, chloride and boron. These higher salt concentrations could be amended in the soil prior to future plantings.

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 of the replanting areas under the revision would be 7.62 acres, a reduction of 0.88 acres from the previously proposed areas of 8.5 acres specified in the Technical Memorandum *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts*. Of the existing replanting 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 sufficient for the total mitigation riparian planting area needed. PG&E plans to implement the replanting requirements in accordance with the restoration plans referenced above. This project changes only the replanting locations identified in the technical memorandum *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts* in the C/RAWP .The new proposed replanting Areas C and D are within the SEIR project area for the Final Groundwater Remedy Project. New access routes may be needed for the new proposed mitigation planting areas for maintenance and monitoring, but the locations are yet to be determined. Nevertheless, the entire footprint of Area C and D are previously disturbed from clearing of the Tamarisks by the USFWS. Also, a preliminary review of the newly proposed planting areas by PG&E 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.

In keeping with current site practice, PG&E will conduct a last look and invite Tribal representatives prior to the start of site preparation for replanting. Onsite biologists will also conduct pre-construction surveys. Existing monitoring protocols will continue to be implemented during planting to ensure resource protection.

3.0 Environmental Analysis

This section of the Addendum provides analysis and cites substantial evidence that supports the conclusion that the project revisions do not meet the criteria requiring preparation of a subsequent EIR or a negative declaration. As required under CEQA Guidelines Section 15164(d), "… the decision-making

body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project." A brief explanation of the decision to not prepare a subsequent document shall be supported by substantial evidence.

The modification of the replanting areas is within the Groundwater Remedy Project Area identified in 2018 certified SEIR. All impacts related to the physical conditions of the site would be similar to that previous identified in the adopted SEIR.

All work to be conducted are as described in the 2015 final remedy design and the aforementioned replanting plans except for location changes identified in this addendum. There are no additional changes to the protocols or decisions from prior project approvals. This project will not alter on-site use. The surrounding environment is essentially unchanged from that identified and analyzed in previous documents. No new adjacent use would be impacted by implementation of the modified replanting area project. Although additional access may be developed for the initial maintenance of the replanting, these will be in previously disturbed areas and temporary until the plants are self-sustaining.

The DOI and USFWS provided approval for the proposed replanting area on December 14 and December 15, 2021 respectively.(see communications 7.2) Due to the similarity in operation, function, and maintenance of the already contemplated revegetation plan within the groundwater remedy design, it is reasonable to conclude that the severity of identified impacts related to specific land uses would not exceed that previously identified in the SEIR or this Addendum. Furthermore, the revised proposed replanting areas will reduce land disturbance for mitigation replanting by approximately 0.88 acres.

All mitigations identified in the adopted SEIR remain applicable to the project as revised.
Because of the similarity in location, site condition, and environmental impacts; as set forth in the following sections, it is reasonable to conclude the previously identified mitigation would be equally effective at reducing the impacts associated with implementation of the new replanting areas. Compliance with appropriate project mitigation measures as well as the applicable or relevant and appropriate requirements (ARARs) will reasonably assure that the project will be implemented in an effective manner. In the absence of any new impact or the increase in severity of a previously identified impact; no new, revised or alternative mitigation is warranted.

3.1 Aesthetics

Area C and Area D of the proposed replanting areas are within the groundwater remedy Project Area evaluated in the April 24, 2018 certified SEIR. Although the alteration of the replanting areas will modify the initial aesthetic of some areas due to the revegetation efforts, the revision will not substantially alter or cause significant physical changes to the visual character within the regional viewshed once the plants are established. The revegetation planting is required as aesthetic mitigation for the potential impacts of the groundwater remedy addressed in the certified 2011 Topock Compressor Station Groundwater Remediation Project Final EIR and further evaluated in the April 24, 2018 SEIR.

3.2 Agriculture and Forestry Resources

In evaluating the potential impacts to Agriculture and Forestry Resources, DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the revised replanting areas would have no adverse impacts to the Agriculture and Forestry Resources. Please refer to Section 4 for the Environmental Finding Conclusion.

3.3 Air Quality and Greenhouse Gas Emissions

The 2018 Certified SEIR conducted extensive evaluations for Air Quality and Greenhouse Gas Emissions impacts as it relates to construction of the remedy. Since the revised replanting areas will not alter or change the implementation of the revegetation plan, the revised planting areas will not deleteriously reduce the air quality or increase overall greenhouse gas emissions beyond the emissions thresholds evaluated in the SEIR. PG&E will continue to implement the mitigation measures adopted as part of the Mitigation Monitoring and Reporting Program for the groundwater remedy. Therefore, this project will not pose a significant change to the potential impacts analyzed in the 2018 certified SEIR. Please refer to Section 4 for the Environmental Finding Conclusion.

3.4 Biological Resources

As part of the groundwater remedy project, the project area defined by the 2018 certified SEIR has been extensively surveyed for Biological Resources. The surveys and methodologies are well documented in the SEIR. Despite substantial construction activities that have occurred and continues to occur at the project area, there have not been any identifiable change in the diversity or quantities of biological resources within the project area. All activities to be performed as part of the revegetation plan are within the same scope that have been considered and evaluated for the Groundwater Remedy Construction, its remedial action workplan, as well as the Operation and Maintenance of the groundwater remedy. The SEIR assumed all native habitats in the Project Area to provide foraging and nesting habitat for the variety of special-status bird species known to occupy the Project Area. Although the implementation of the revegetation plan will slightly modify the type and density of the foraging and nesting habitat, the replanting of native vegetation will ultimately increase suitable foraging and nesting habitat once established. Please refer to Section 4 for the Environmental Finding statement.

3.5 Cultural Resources

In evaluating the modification of the revegetation planting area project, DTSC finds that the project would have no impacts to the Cultural Resources as defined in the Appendix G, Environmental Checklist Form regarding adverse change in the significance of a historical resource, substantial adverse change in the significance of an archaeological resource, or disturbance of any human remains. Tribal Cultural Resources are evaluated under its separate category below. Please refer to Section 4 for the Environmental Finding Conclusion.

3.6 Energy

In evaluating the potential impacts to energy resources, DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the revised replanting areas would have no adverse impacts to the available energy source. Please refer to Section 4 for the Environmental Finding Conclusion.

3.7 Geology and Soils

Although the revegetation of Areas C and D will have slight modification of the soil chemistry and will require the amendment of soil to reduce the existing salt content of the soil Including water irrigation of the soil to leach and reduce the salt and/or blending of potting soil with existing soil during replanting. However, the project will not create unstable soil that would result in a significant landslide, subsidence, or collapse. DTSC finds that this project will not pose a significant change to the potential impacts analyzed in the 2018 certified SEIR and has less than significant impact to the Geology and Soils resource. Please refer to Section 4 for the Environmental Finding Conclusion.

3.8 Greenhouse Gas Emissions

DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the replanting areas modification would have no adverse impacts or a significant increase in greenhouse gas emissions. Please refer to Section 4 for the Environmental Finding Conclusion.

3.9 Hazards and Hazardous Materials

DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the use of the revised replanting areas would not create potential adverse impacts or a significant increase in hazards or presence of hazardous materials. Please refer to Section 4 for the Environmental Finding Conclusion.

3.10 Hydrology and Water Quality

PG&E estimated maximum freshwater usage for the initial salt leaching to reduce the salt content in the soil left from the Tamarisks removal by the U.S.FWS 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 nonriparian 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.

Although the estimated total volume of freshwater usage for mitigation planting (3.34 acre-feet for native plants in the floodplain plus a minimal amount for the cactus in the upland) will exceed the water consumption estimate for mitigation planting specified in the SEIR at 0.04 acre-feet, the total water consumption for Phase 1 of the remedy would remain below the projected SEIR analyzed volume of 38.54 acre-feet. Specifically, as of December 31, 2021, the current volume of freshwater used for Phase 1 construction is about 24.19 acre-feet. Adding the additional water usage required for the proposed mitigation replanting, the Phase 1 water consumption total about 28 acre-feet, which is about 10.54 acre-feet less than the Phase 1 water consumption volume analyzed in the SEIR for Phase I. Therefore, DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the replanting area modification would have no adverse impacts on hydrology and water quality. Please refer to Section 4 for the Environmental Finding Conclusion.

3.11 Land Use and Planning

The modification of the replanting areas will not alter land use or planned land use of the site. The modification and addition of Areas C and Area D have been approved by the USFWS and DOI. According to USFWS in an email on December 15, 2021 approving the modification, USFWS stated that the revegetation will "convert an area with poor habitat into a newly restored floodplain with native trees and shrubs." DTSC finds that the Project remains consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the revised replanting areas would have no impacts to Land Use and Planning. Please refer to Section 4 for the Environmental Finding Conclusion.

3.12 Mineral Resources

DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the revised replanting areas would have no impacts to the Mineral Resources. Please refer to Section 4 for the Environmental Finding Conclusion.

3.13 Noise

DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy and that the revised replanting areas would have no impacts to noise and would not create any significant noise. Please refer to Section 4 for the Environmental Finding Conclusion.

3.14 Population and Housing

DTSC finds that the revised replanting areas would have no impacts to population growth or substantially alter the existing population and housing around the project area. DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy. Please refer to Section 4 for the Environmental Finding Conclusion.

3.15 Public Services

DTSC finds that the revision of the replanting areas would have no impacts to and would not alter the existing public services around the project area. DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy. Please refer to Section 4 for the Environmental Finding Conclusion.

3.16 Recreation

DTSC finds that the revision of the replanting areas would have no impacts to and would not alter the recreational resources of the site. DTSC finds that the Project is consistent with the analysis of the 2018 certified SEIR for the groundwater remedy. Please refer to Section 4 for the Environmental Finding Conclusion.

3.17 Transportation

The range of activities for the revision of the replanting areas are within the existing scope of the groundwater remedy project. Since the replanting work is identical to the protocols established in the design, DTSC finds that the Project will not pose a significant change to the potential impacts analyzed in the 2018 certified SEIR and will not alter impacts to Transportation. Please refer to Section 4 for the Environmental Finding Conclusion.

3.18 Tribal Cultural Resources

No known archaeological resources have been identified within the footprint of the revised replanting Areas C and D. However, the project area is situated within a larger area determined by the U.S. Bureau of Land Management to be a Traditional Cultural Property (TCP) for Native American Indian Tribes. There are substantial quantities of documented cultural and archaeological resources throughout the TCP and discovery of additional resources within the area is common. PG&E will continue to conduct a “last look” site review and will invite Tribal representatives to participate in the site walk prior to the replanting efforts.

The 2018 SEIR has conducted extensive analysis of the potential impacts within the Groundwater Remedy Project Area and adopted specific mitigation measures to identify, protect and mitigate for the potentially significant impact to cultural resources of the overall groundwater remedy project. Since the revised replanting areas are fully situated within the Groundwater Remedy Project Area, PG&E will continue to adhere to all the precautions, assessments, protocols and procedures developed and implemented in relations to the Tribal Cultural Resources mitigation measures during the planning and implementation of the revegetation plan. Although this project may not contribute to a significant impact on the physical manifestation of cultural resources with the implementation of the 2018 SEIR adopted mitigation measures, like the groundwater remediation project as a whole, the activities within this project area will continue to be a potential impact to the spiritual values held by some Native

American Tribes and the spiritual impacts are unavoidable and unmitigable. As a result, DTSC finds that this project will not significant change the potential impacts analyzed in the 2018 certified SEIR. Please refer to Section 4 for the Environmental Finding Conclusion.

3.19 Utilities and Service Systems

The range of activities for the revision of the replanting areas are within the existing scope of the groundwater remedy project. Since the replanting work is identical to the protocols established in the design, DTSC finds that the Project will not pose a significant change to utilities and service systems analyzed in the 2018 certified SEIR. Please refer to Section 4 for the Environmental Finding Conclusion.

3.20 Wildfire

Wildfire has been known to happen near the Topock Compressor Station and near the vicinity of the Groundwater remedy. Notable is the April 2016 wildfire which burned over 2,200 acres in both Arizona and California. However, the range of activities associated with the replanting are consistent with those analyzed in the 2018 SEIR. Furthermore, modification of replanting areas will not alter the landscape significantly and will not increase risks of wildfire. As a result, DTSC finds that this project will not pose a significant change to the potential impacts analyzed in the 2018 certified SEIR. Please refer to Section 4 for the Environmental Finding Conclusion.

4.0 Environmental Finding

The certified 2018 SEIR for the groundwater remediation project was supported by detailed aesthetics, air quality and greenhouse gas emissions, biological resources, cultural resources, hazard and hazardous materials evaluation, hydrology and water quality, noise, utilities services, energy, traffic, and water supply analyses. The SEIR underwent required public review. All public review comments were addressed prior to the approval of the project and certification of the SEIR on April 24, 2018.

The adopted SEIR is inclusive of the project Initial Study, all previously referenced site-specific technical studies, public comments, responses to comments, and the Mitigation Monitoring and Reporting Program. All mitigation measures identified in the adopted SEIR remains applicable.Compliance with City, State, and federal conditions, guidelines, and ARARs would apply for this project

As stated in the previously provided analysis, the proposed project consists of modifying the locations of the mitigation replanting areas only and will not cause new significant impact or substantially increase the severity of a previously identified impact. No new plans, policies, or regulations that would result in new significant environmental impacts or an increase in the severity of environmental impacts were identified. There have been no significant changes in circumstances that would involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects. None of the “new information” conditions listed in CEQA Guidelines Section 15162[a][3] are present here to trigger the need for a subsequent EIR or negative declaration.

CEQA Guidelines Section 15164 states that “the lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” An addendum is appropriate for the proposed project because, as explained above, the revision of the replanting areas is substantially similar to the activities already assessed in the adopted SEIR and would not result in a new significant impact or increase the severity of a previously identified impact. As such, the revised replanting area project does not entail project changes warranting the preparation of a subsequent EIR or negative declaration.

5.0 References

Addendum to Pacific Gas and Electric Company's Topock Groundwater Remediation Project Preconstruction Floristic Survey Report – Late Season Survey 2017, CH2M, March 5, 2018

Construction/ Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California, CH2M Hill, November 2015

Desert Tortoise Habitat Survey, PG&E Topock Compressor Station Evaporation Ponds and Access Roadway, Transcon Environmental, Inc., April 2015

Final Environmental Impact Report, Volumes 1 and 2, for the Topock Compressor Station Groundwater Remediation Project, AECOM, January 2011

Final Subsequent Environmental Impact Report for the Pacific Gas and Electric Company Topock Compressor Station Final Groundwater Remediation Project, Volume 2, ESA, December 2017

Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station. Garcia and Associates (GANDA), October 2012

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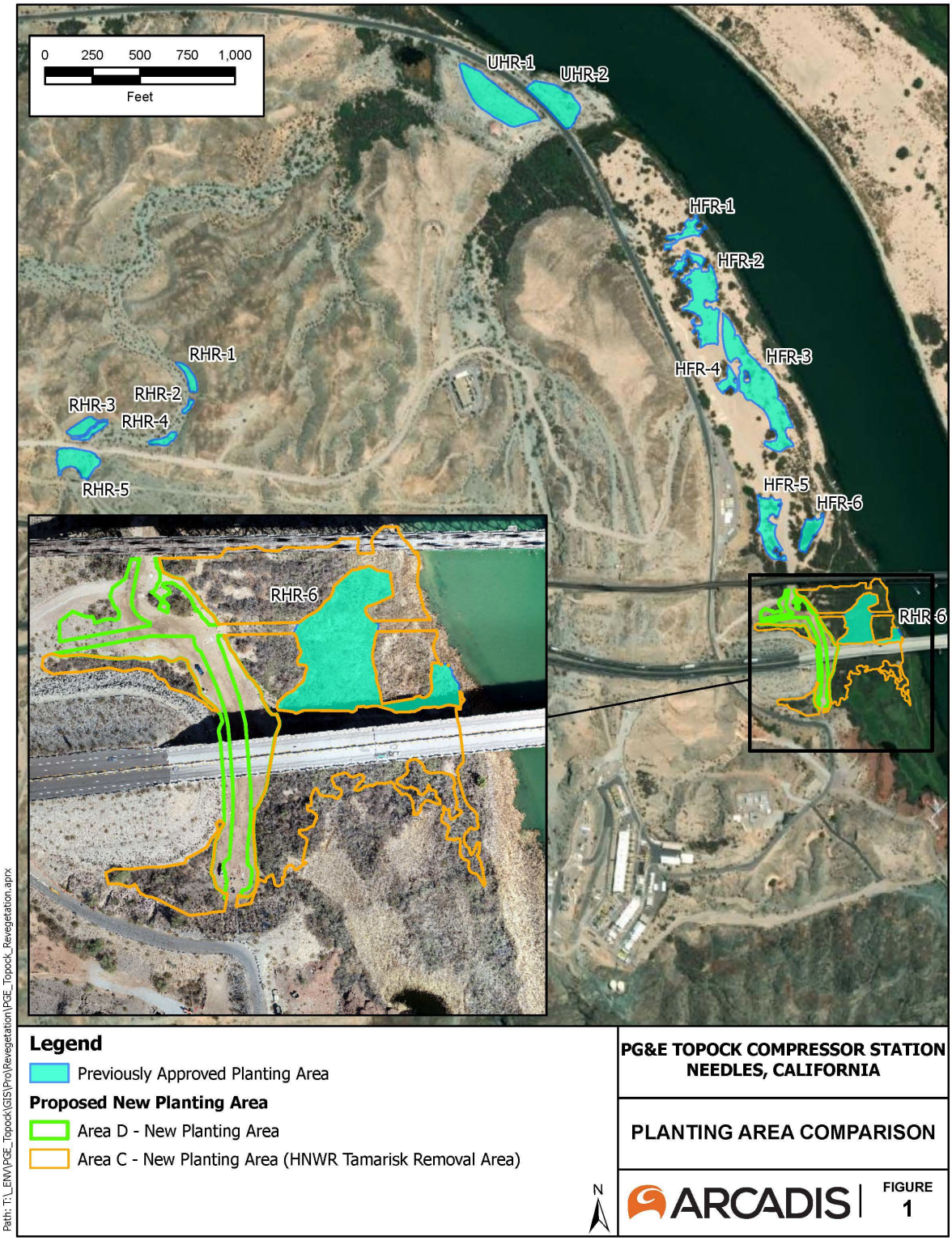
Topock Compressor Station Spring 2021 Roosting Bat Survey Report, H. T. Harvey & Associates, October 2021

6.0 Figures


0 250 500 750 1,000
Feet
UHR-1
UHR-2
HFR-1
HFR-2
HFR-3
HFR-4
HFR-5
HFR-6
RHR-1
RHR-2
RHR-3
RHR-4
RHR-5
RHR-6
RHR-6
Legend
Previously Approved Planting Area
Proposed New Planting Area
Area D - New Planting Area
Area C - New Planting Area (HNWR Tamarisk Removal Area)
N
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA
PLANTING AREA COMPARISON
ARCADIS
FIGURE
1
Path: T:_ENV\PGE_Topock\GIS\Pro\Revegetation\PGE_Topock_Revegetation.aprx

7.0 Communications

7.1 Proposed New Mitigation Planting Areas

From: Strohl, Virginia

To: Yue, Aaron@DTSC; Pamela_Innis@ios.doi.gov

Cc: Russell, Curt; Bonnett, Kristina; Hong, Christina/LAC

Subject: Requested Information on Proposed New Mitigation Planting Areas

Date: Tuesday, November 9, 2021 11:15:53 AM

Attachments: Figure 1 Planting Area Comparison 20211025.pdf

EXTERNAL:

Hi Aaron and Pam,

As part of the Final Design Submittal for the Final Groundwater Remedy, three revegetation plans were submitted to address impacts to protected plants that would be impacted during construction. Additionally, a separate plan was prepared to address ethnobotanically significant plants, which was submitted in compliance with the Cultural and Historic Properties Management Plan. These plans specifically addressed protected plant impacts on Havasu National Wildlife Refuge (HNWR) lands (*HNWR Habitat Restoration Plan, CH2M HILL, 2014a*), within jurisdictional areas associated with waters of the U.S. and the State of California (*Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats,* CH2M HILL, 2014b); for mature plants (*Aesthetics and Visual Resources Protection and Revegetation Plan*, CH2M HILL, 2014c); and for ethnobotanically significant plants (*Culturally Significant Plants*, CH2M HILL, 2013). The SEIR requires that impacts to the above referenced resources be mitigated according to these plans. Also, the *Programmatic Biological Assessment* (PBA) (CH2M HILL, 2014) requires the replacement of any protected plants that are destroyed. Pursuant to mitigation measures AES-1f, BIO-1a, CUL-1a-5 of the SEIR, and PBA General Measure (GM) 14, PG&E is in the process of fulfilling its mitigation for impacts to jurisdictional riparian areas, scenic vistas, indigenous plants, and sensitive and/ or protected habitats under the jurisdiction of USFWS, USACE and CDFW.

This email describes PG&E's proposal to change the locations of most of the mitigation planting locations under mitigation measure AES-1, BIO-1a, CUL-1a-5 for the Topock GW Remedy project. Mitigation Measure AES-1f states that requirements of the *Aesthetics and Visual Resources Protection and Revegetation Plan* shall be implemented throughout the project including replacement planting procedures. Mitigation Measure BIO-1a states that restoration of jurisdictionalareas "shall be guided by the *Havasu National Wildlife Refuge Habitat Restoration Plan* and *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats*, as approved by CDFW, USFWS, and DOI." Mitigation Measure CUL-1a-5 states that should any impacts to indigenous plantsnot be avoided, provisions included in the *Plan for Culturally Significant Plants* shall be implemented including protocols for replacement plantings. The PBA GM 14 states that if any of the protected plants be destroyed, they shall be replaced. To meet the mitigation requirements set forth in these plans and measures, PG&E is required to transplant or replace protected plants that could not be avoided during construction.

Mitigation measures AES-1f, BIO-1a, CUL-1a-5 of the SEIR, cross references the *Aesthetics and Visual Resources Protection and Revegetation Plan*, the *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats*, the *Havasu National Wildlife Refuge Habitat Restoration Plan* and *the Plan for Culturally Significant Plants*, respectively, and state that the exact planting locations will be determined in the final design.

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). These fourteen mitigation planting areas, comprising approximately 8.5 acres, were grouped into two UHR units, six RHR units, and six 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. For the reasons explained below, PG&E is proposing to modify these mitigation planting locations that were identified in the *Assessment of Proposed Mitigation Planting Areas* memo but would continue to implement the requirements included in the restoration plans. In 2018, at the beginning of the Groundwater Remedy construction project, PG&E

removed and transplanted protected plant species that were identified to be impacted by construction prior to construction activities occurring, consistent with measure CUL-1a-5 and BIO 1a and the above referenced restoration plans. 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 replacementplantings 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, HNWR identified a need to remove tamarisk in the floodplain to improve the riparian habitat for protected wildlife species, which wouldopen 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.

Below are the results of the soil moisture reading at the existing and candidate mitigation sites.

Soil Moisture Readings at the Mitigation Sites		
Mitigation Planting Area Location	Moisture Reading (Soil moisture taken at 8” depth and 12” depth)	Comments
UHR-1-1	soil moisture 15-30%, probe could not penetratedeeper than 4 inches	Location of existing transplants
UHR-1-2	soil moisture 15-30%, probe could not penetrate deeper than 4”	

UHR-2-1	soil moisture 15-30%, probe could not penetratedeeper than 5 inches	
UHR-2-2	soil moisture 15-30%, probe could not penetrate deeper than 3 inches	
RHR-1-1	soil moisture 17.4% at 8 inches, 27.8% at 12 inches	
RHR-2-1	soil moisture 18.5% at 8 inches, 24.7% at 12 inches	
RHR-3-1	soil moisture 33.7% at 8 inches, 20.4% at 12 inches	
RHR-4-1	soil moisture 26.5% at 8 inches, 30.5% at 12 inches	
RHR-5-1	soil moisture 63.3% at 8 inches, 61.7% at 12 inches	
RHR-6-1	soil moisture 69.5% at 8 inches, 86.1% at 12 inches	
HFR-1-1	soil moisture 8.3% at 8 inches, 9.8% at 12 inches	
HFR-2-1	soil moisture 3.2% at 8 inches, 5.5% at 12 inches	
HFR-3-1	soil moisture 5.2% at 8 inches, 9.5% at 12 inches	
HFR-4-1	soil moisture 7.8% at 8 inches, 9.5% at 12 inches	
HFR-5-1	soil moisture 6.9% at 8 inches, 9.2% at 12 inches	
HFR-6-1	soil moisture 12.6% at 8 inches, 15.3% at 12 inches	
C-1	soil moisture 66.2% at 8 inches, 88.5% at 12 inches	C-1 through C-5

		are from the new Area C
C-2	soil moisture 83.6% at 8 inches, 87.9% at 12 inches	
C-3	soil moisture 69.5% at 8 inches, 86.1% at 12 inches	
C-4	soil moisture 62.3% at 8 inches; silt mixed with gravel, could not dig below 8 inches	
C-5	soil moisture 30.6% at 8 inches, 38.5% at 12 inches	
D-1	soil moisture 75.2% at 8 inches; could not dig below 8 inches	D-1 through D-5 are from the new Area D
D-2	silt mixed with gravel; compacted could not dig below 4 inches	
D-3	silt mixed with gravel; compacted could not dig below 4 inches	
D-4	soil moisture 78% at 8 inches; could not dig below 8 inches	
D-5	silt mixed with gravel; compacted could not dig below 4 inches	

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 we collected suggest that young riparian trees such as honey mesquite and palo verde become established when soil moisture equals or exceeds 65% at 12 inchesand 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.

Details of soil sampling results can be reported under a separate report if requested. 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.

PG&E is proposing to use new planting Area C (3.37 acres) and Area D (0.63) 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 6.77 acres, a reduction of 1.73 acres fromthe 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. PG&E plans to implement the requirements discussed in the restoration plans referenced at the beginning of this email- it is only the locations of the mitigation planting sites mentioned in the *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts* that are proposed to be changed.

The new proposed planting areas are within the SEIR project area. New access routes may be needed for access within the new proposed mitigation planting areas for maintenance and monitoring, but the locations are yet to be determined. 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 overlapwith the boundaries of the proposed mitigation planting areas.

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 monitoringprotocols will be implemented during planting to ensure resource protection.

Please let me know if you would like any additional information at this time. Thank-you forconsidering these changes. -Virginia

Virginia Strohl | Senior Biologist

Pacific Gas and Electric Company | 3580 E. California Avenue | Fresno, California 937105

7.2 Request for approval for PGE

From: Strohl, Virginia

To: Yue, Aaron@DTSC

Cc: Russell, Curt; Hong, Christina/LAC; Bonnett, Kristina

Subject: FW: [EXTERNAL] Request for Approval for PGE to Support Restoration and Implement Mitigation Plantings atHNWR

Date: Thursday, December 16, 2021 11:23:42 AM

EXTERNAL:

Hi Aaron,

Please see the preceding emails from Richard and Pam supporting the debris clean-up, leaching and mitigation plantings on HNWR property. -Virginia

Virginia Strohl | Senior Biologist

Pacific Gas and Electric Company | 3580 E. California Avenue | Fresno, California 93710559.515.3904 cell | v1s4@pge.com

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From: Meyers, Richard J <richard_meyers@fws.gov>

Sent: Wednesday, December 15, 2021 9:16 AM

To: Innis, Pamela S <Pamela_Innis@ios.doi.gov>; Strohl, Virginia <V1S4@pge.com>

Cc: Russell, Curt <GCR4@pge.com>; Bonnett, Kristina <KABY@pge.com>; Hong, Christina/LAC <Christina.Hong@jacobs.com>; Howland, Jeff <jeff_howland@fws.gov>; Sparks, Edwin A <edwin_sparks@fws.gov>

Subject: Re: [EXTERNAL] Request for Approval for PGE to Support Restoration and ImplementMitigation Plantings at HNWR

The USFWS/ Havasu National Wildlife Refuge supports the proposed tamarisk debris and root ball cleanup, the proposed leaching plan to treat the high salt concentrations in the planting areas and ofthe plan to plant, irrigate, maintain, and monitor riparian plants at this location as referenced in the attached figure as New Area C, Old Area C and Area D. We truly appreciate this partnership effort with PG&E to convert an area with poor habitat into a newly restored floodplain with native trees and shrubs.

Thank you for your collaboration and support.

Richard Meyers

Havasu NWR Refuge ManagerLake Havasu NWR Complex Office (760) 326-3853

Mobile (760) 269-5982

From: Innis, Pamela S <Pamela_Innis@ios.doi.gov>

Sent: Tuesday, December 14, 2021 4:48 PM

To: Strohl, Virginia <V1S4@pge.com>; Meyers, Richard J <richard_meyers@fws.gov>

Cc: Russell, Curt <GCR4@pge.com>; Bonnett, Kristina <KABY@pge.com>; Hong, Christina/LAC

<Christina.Hong@jacobs.com>

Subject: Re: [EXTERNAL] Request for Approval for PGE to Support Restoration and ImplementMitigation Plantings at HNWR

DOI appreciates the coordinate effort that PG&E and the Refuge managers have done concerning the proposed revegetation of this area. DOI defers to USFWS regarding concurrence with the detailsof proposed tamarisk debris and root ball cleanup, leaching plan and plan to plant, irrigate, maintain,and monitor the plantings but supports the proposal with the understanding that DTSC must go through the CEQA process regarding the revised locations for habitat mitigation.

Pamela S. Innis

US Department of the Interior CHF Remedial Project Manager

One North Central Avenue, Suite 800Phoenix, AZ 85004-4427

Office Phone: 602.417.9578

Fax: 602.417.9462

Cell: 303.501.5685

From: Strohl, Virginia <V1S4@pge.com>

Sent: Tuesday, December 14, 2021 12:00 PM

To: Meyers, Richard J <richard_meyers@fws.gov>; Innis, Pamela S <Pamela_Innis@ios.doi.gov>

Cc: Russell, Curt <GCR4@pge.com>; Bonnett, Kristina <KABY@pge.com>; Hong, Christina/LAC <Christina.Hong@jacobs.com>

Subject: [EXTERNAL] Request for Approval for PGE to Support Restoration and Implement Mitigation Plantings at HNWR

Hi Richard and Pam,

Thank-you for meeting with us earlier this week to discuss the floodplain restoration site on Havasu National Wildlife Refuge (HNWR) property west of the CO River, east of National Trails Highway, south of the BNSF to just south of the I-40 (see the attached figure).

During the meeting we discussed the area where the HNWR had recently removed tamarisk (See New Area C on attached figure). We discussed the results of recent soil sampling that detected highsalt concentrations in the area especially where the tamarisk has been recently removed. We discussed the need to remove the high salt containing, tamarisk plant debris from the site, in addition to any remaining root balls, to reduce salt minerals in the soil and to prevent any resprouting of the tamarisk.

We also discussed the recommend soil treatment for leaching soluble salts in the soils with intermittent, periods of irrigation watering. Each period would fully saturate the area beneath the emitter with water to a depth of 18” and then allow 24 hours for internal drainage of the soil profileto occur. These two steps would be repeated numerous times with possibly up to 20 applications.

We also discussed our plan to put mitigation plantings (screwbean mesquite, honey mesquite, palo verde, desert smoke tree and catclaw acacia) into the ground towards the end of February 2022 in

addition to cottonwoods and willows plantings that the Refuge would provide us from the CRIT nursery. The cottonwoods and willows would be planted adjacent to the CO River between the BNSF and I-40.

HNWR also has plans to possibly remove additional tamarisk in this area in Spring of 2022 if the equipment is available again for HNWR to complete the removal. If additional tamarisk is removedPG&E could prep and plant in these areas as discussed above.

PG&E would implement the maintenance and monitoring plan for mitigation plantings as discussed in the HNWR Habitat Restoration Plan (CH2M HILL, 2014a) and other project restoration plans. PGE would also implement similar maintenance for the cottonwoods and willows minus the requirementto monitor and replace any failed plantings for those species.

The Refuge also indicated that a Special Use Permit would not be warranted since the mitigation planting is part of the Groundwater Remediation project which is a CERCLA action and therefore is exempt from permitting.

Please provide an email response indicating your support of the proposed tamarisk debris and root ball cleanup, the proposed leaching plan to treat the high salt concentrations in the planting areas and of the plan to plant, irrigate, maintain, and monitor riparian plants at this location as referencedin the attached figure as New Area C, Old Area C and Area D

Thank-you for partnering with us on this restoration effort. We're excited to help HNWR reestablish native plant species in the area again. -Virginia

Virginia Strohl | Senior Biologist

Pacific Gas and Electric Company | 3580 E. California Avenue | Fresno, California 93710559.515.3904 cell | v1s4@pge.com

7.3 Revised Areas for Newly Proposed Mitigation Planting Areas

From: Strohl, Virginia

To: Yue, Aaron@DTSC

Cc: Pamela_Innis@ios.doi.gov; Russell, Curt; Bonnett, Kristina; Hong, Christina/LAC

Subject: Revised Areas for Newly Proposed Mitigation Planting Areas

Date: Thursday, January 6, 2022 5:49:04 PM

Attachments: Figure 1 Planting Area Comparison 20211230.pdf

EXTERNAL:

Hi Aaron,

I'm emailing you regarding the revised area amounts for the newly proposed mitigation planting areas. As you know, the Refuge recently removed the tamarisk from the Refuge land surrounding and including the RHR-6 planting area on the floodplain. The actual tamarisk areas where the Refuge removed was slightly more than was originally estimated from our preliminary field review. Below is a table of the revised areas.

Name	Previous Acres	Revised Acres	Updated Totals
RHR-6	0.91	N/A	0.91
Area D	0.63	0.95	0.95
Area C	3.37	3.9	3.9
RHR-5	0.56	N/A	0.56
UHR-1	1.3	N/A	1.3
Total			7.62

PG&E is now proposing to use the updated planting areas; 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. Please find attached an updated figure delineating the revised mitigation planting areas.

Please let me know if you have any questions, -Virginia

Virginia Strohl | Senior Biologist

Pacific Gas and Electric Company | 3580 E. California Avenue | Fresno, California 93710559.515.3904 cell | v1s4@pge.com

7.4 Soil Amendment at Mitigation Planting Areas

From: Strohl, Virginia

To: Yue, Aaron@DTSC

Cc: Russell, Curt; Bonnett, Kristina; Hong, Christina/LAC; Pamela_Innis@ios.doi.gov

Subject: RE: [EXTERNAL] PG&E Topock - Proposed Work Variance Request # 11 New Mitigation Planting Areas

Date: Tuesday, January 18, 2022 10:11:34 AM

EXTERNAL:

Hi Aaron,
PG&E's mitigation plantings (transplants) have not been as successful as required. PG&E is therefore employing the adaptive management process outlined in the revegetation plans to increase the likelihood of survival of the mitigation plantings. Specifically, the Revegetation Plan section of the Construction and Remedial Action Work Plan allows adaptive management and states that "[a]daptive management involves learning from experience and modifying subsequent behavior in light of that experience."

In light of new data about soil conditions and its experience to date with mitigation plantings, PG&E proposes to allow the addition of small amounts of amendments, fertilizer and/or soil inoculants during the mitigation planting process, as recommended to increase mitigation planting success.
The soil analysis data for Areas C and D indicate elevated levels of soluble salts, primarily sodium and chloride. Recommended remediation of high salts in Areas C and D by the soil testing laboratory include removal of salt cedar and debris (complete) and installation of an irrigation system to begin leaching. Leaching will be conducted by applying enough irrigation water in a single set to fully saturate the soil beneath the irrigation emitter to a depth of approximately 18 inches, followed by 24 hours of internal drainage. The leaching cycle will be repeated 20 times, followed by additional soil testing. Leaching is an activity approved and coordinated by PG&E with the property owner (Refuge). As noted in the WVR, the water to be used for leaching is within the volume of water the SEIR contemplated for Phase I of remedy construction.

After leaching, additional soil samples will be taken for the soil testing laboratory to review and provide recommendations, which may or may not include application of small amounts of soil amendments, fertilizer, and soil inoculants, which, if needed, would be hand mixed with the soil backfill of the planting holes at the time of planting and be added to each hole. Soil amendments could include gypsum or sulfates, and fertilizers could include Triple 15, which includes nitrogen, phosphorus, and potassium. The soil inoculants would be a desert variety and would boost the mycorrhizae and beneficial soil microbes. The fertilizer and soil inoculants may also be added to the other mitigation planting areas to ensure success of the mitigation plantings.

Please let me know if you have any questions or need additional information, -Virginia

Virginia Strohl | Senior Biologist

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