



**Pacific Gas and
Electric Company®**

Yvonne J. Meeks
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Environmental Affairs

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April 18, 2005

Mark Howell
U.S. Dept. of the Interior,
Bureau of Land Management
2610 Sweetwater Avenue
Lake Havasu City, AZ 86406

Subject: Biological Resource Monitoring – Completion Report

Dear Mr. Howell:

Enclosed is the *Land Area Subject to Groundwater Well Installation Biological Resource Monitoring – Completion Report* provided in accordance with the BLM and USFWS conditions of approval for recent well installation and drilling activity at the Topock site. The attached specifically provides compliance with BLM Condition No. 5 in the 12/29/05 approval letter for the subject activities, as well as USFWS Condition No. 28 of the Action Memorandum signed 12/16/04. An electronic copy of this report was submitted via email on 4/15/05.

Please contact me at (805) 546-5243 if you have any questions or if you need additional information.

Sincerely,

Tim Herson
For Yvonne Meeks

Enclosure

cc: John Earle – US Fish and Wildlife Service, Department of the Interior
Norman Shopay – Department of Toxic Substances Control

Land Area Subject to Groundwater Well Installation Biological Resource Monitoring – Completion Report Topock Project Site Needles, California

PREPARED FOR: Mark Howell/BLM
John Earle/USFWS
PREPARED BY: Ray Romero/CH2M HILL
DATE: April 14, 2005

Introduction

Pacific Gas and Electric Company (PG&E) is addressing chromium in groundwater at the Topock Compressor Station near Needles, California under the oversight of the California Department of Toxic Substances Control (DTSC). These efforts include the installation of groundwater monitoring and extraction wells and geologic test borings. Approval to perform these activities on Bureau of Land Management (BLM) and United States Fish and Wildlife Service (USFWS) managed lands was subject to conditions provided in separate Action Memoranda. Installation of a well cluster within the Havasu National Wildlife Refuge (HNWR) was authorized by USFWS Action Memorandum dated 16 February 2005. Authorization for activities on BLM land was provided via Action Memoranda dated 3 March 2004 and 17 September 2005. Subsequent approval letters were provided by BLM on 29 December 2005 and 25 February 2005 specifying allowable activities and attaching additional conditions beyond those noted in the Action Memoranda.

In conformance with the conditions provided in the Action Memoranda and related approval letters, pre-construction surveys and compliance monitoring were conducted of all land use areas subject to the installation of four compliance well clusters, five monitoring well clusters, one extraction well, and two test bores. Additionally, a report documenting land use, affected vegetation, and wildlife observed must be submitted to both BLM and USFWS upon completion of the well installations. The purpose of this memorandum is to fulfill this reporting requirement.

Methods

During design and planning of the wells and test borings, much care was taken to utilize those areas that showed evidence of previous land use wherever possible. A variety of land uses are present in the vicinity. The area is traversed by a major railway line, several major gas pipelines, and historic U.S. Route 66 (currently Park Moabi Road). In addition, available information indicates that portions of the floodplain have been used in the past by the Bureau of Reclamation (BOR) to store material dredged from the adjacent Colorado River.

Under the terms of the BLM approval, construction work was completed by an established deadline to avoid potential impacts to sensitive biological resources. In addition, well installation activities were continuously monitored by a qualified biologist. The biologist was responsible for pre-surveying the sites, documenting pre- and post- land use conditions with a global positioning system (GPS) unit and digital camera, staking and flagging work areas and routes where appropriate to minimize land use and avoid sensitive resources, coordinating and monitoring vegetation removal, documenting wildlife observed, and ensuring compliance with the regulatory stipulations.

To assess land use, a survey using a Trimble Geo XT GPS unit was conducted to delineate the areas subject to groundwater well installation activities. Such areas include construction and staging areas associated with the wells, affected vegetation, and access/egress routes. Data collected during the GPS survey was imported into the geographic information system (GIS) maintained for the PG&E Topock project. Polygons were defined for each well location and plotted on an aerial map. The total (net) area of land use resulting from project related well installations was calculated by subtracting the previous non-project related land use acreage from the project related land use acreage.

Results

The installation of the four compliance well pairs (CW) occurred in the vicinity of the injection well field (Figure 1). A pre-existing access route was used to the CW-1 site. This site was located within a previous land use area between Historic Route 66 (HR 66) and the gas pipeline right-of-way. The CW-2 and CW-3 sites were located on a mesa east of the injection well field where an access roadway was not present. Access to these sites was not provided by constructing a roadway, but rather tire tracks were created from vehicles driving over the ground surface. In one specific location, the approximately four-foot high road bank adjacent to HR 66 was graded to smooth the ground surface and provide a small ramp. The well sites and access route were flagged and staked to minimize land use and avoid sensitive resources. The number of vehicles and equipment accessing these sites were kept to the minimum necessary to accomplish the work. Access into the CW-4 site was through the scoured bed of an unnamed wash. The well site and access route were flagged and staked to minimize land use and avoid sensitive resources. Vehicle access to the CW-4 site was strictly limited to the drill rig and support equipment. Workers and visitors parked their vehicles at the injection well field and walked to CW-4. The tire tracks created as a result of equipment access within the wash were temporary as several rain-fall events have since erased the tracks. Therefore, land used to access CW-4 was not added to the land use calculation because of the mitigating effects of the normal surface runoff within the wash. As a result of the compliance well installations, several creosote bushes were either removed or crushed and several beavertail cactuses were transplanted.

The installation of the five monitoring wells (MW-27, MW-33, MW-34, MW-42, and MW-43), one extraction well (PE-1), and two test bores that were sampled and abandoned at potential extraction well sites (PE-1A and PE-1B) occurred within the Colorado River floodplain (Figure 1). Access to the floodplain was via a pre-existing route located at Park Moabi Road and MW-35. This location also served as the staging area for three roll-off bins for water, drill cuttings, and construction related debris. Work crews utilized light weight

all-terrain vehicles known as John Deere Gators to shuttle personnel and materials between the staging area and well sites. The vehicle tracks created by the drill rig and support equipment were considered temporary due to the actively shifting sand dunes. Therefore, land used to access the floodplain wells, with the exception of MW-27 and MW-43, was not added to the land use calculation. The MW-27 and MW-43 installations required vegetation removal and occurred on more silty and clayey soils that will not as quickly become erased by shifting sand, so those areas are included in the project related land use calculation.

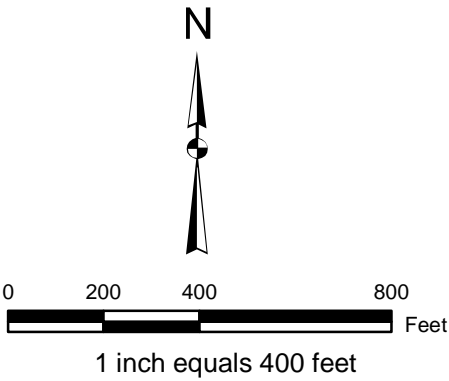
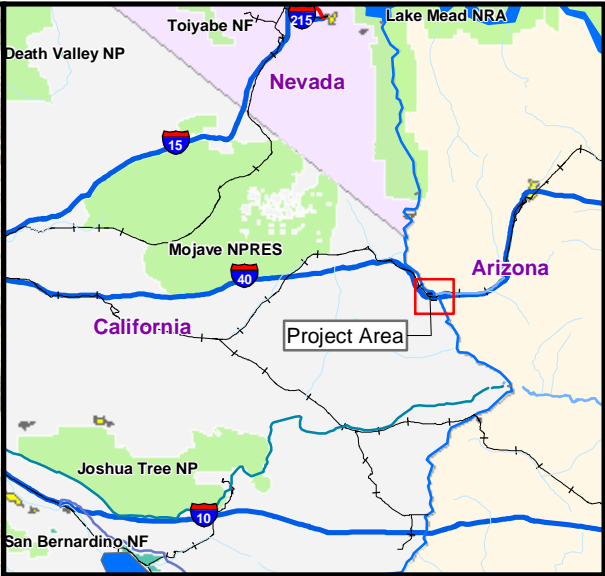
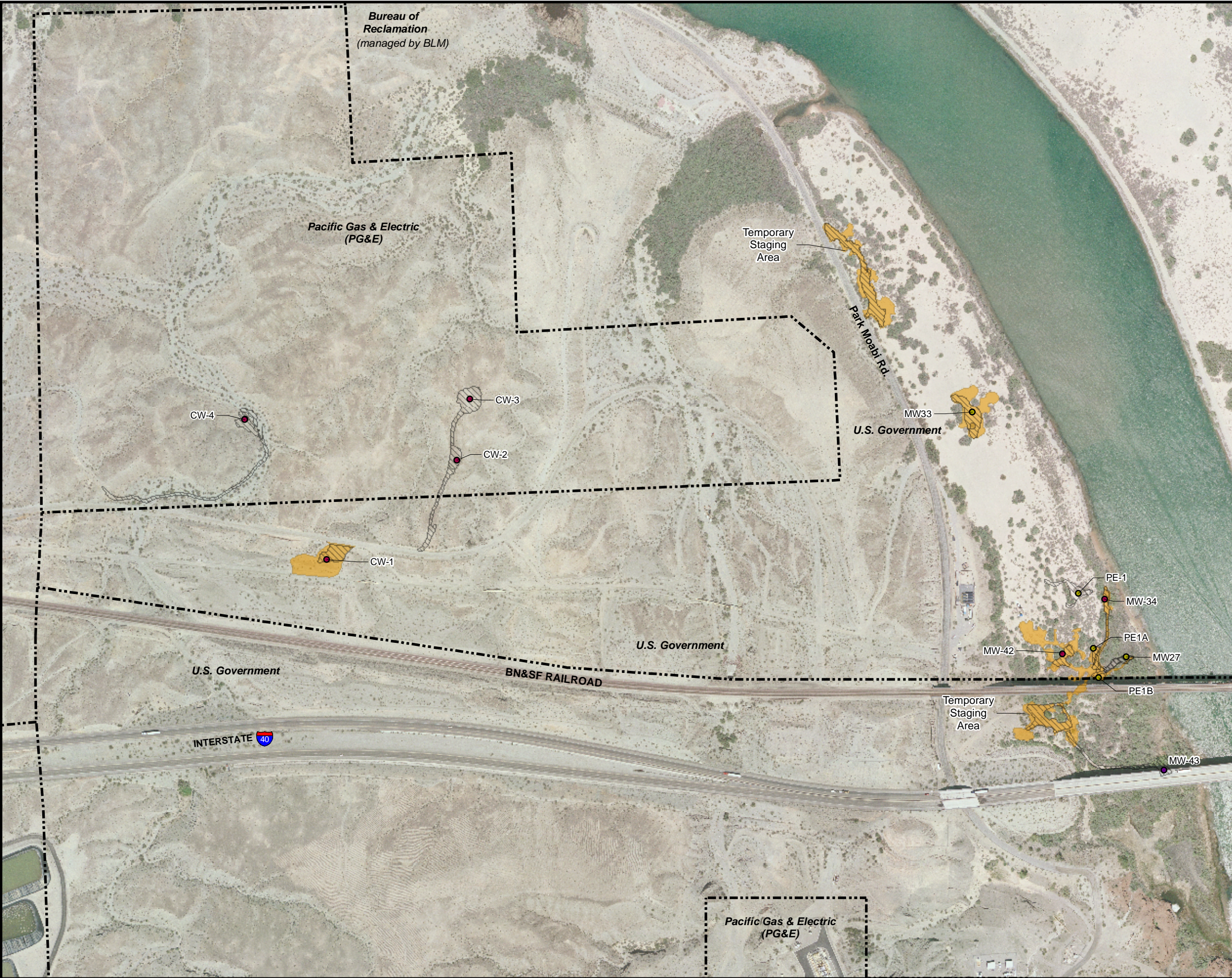
Groundwater wells MW-27, MW-33, MW-34, MW-42, and test bores PE-1A, PE-1B were sited within previous land use areas. With the exception of MW-43 and PE-1, all the newly installed monitoring wells were sited directly adjacent to existing wells. The installation of PE-1 resulted in the crushing of arrow weed (*Pluchea sericea*). As coordinated with the BLM, access to MW-27 was re-routed to avoid native screw bean mesquite (*Prosopis pubescens*) located directly adjacent to the original access route. This action resulted in the removal of exotic salt cedar (*Tamarix chinensis*) and arrow weed. As coordinated with the USFWS, the access route and well site for MW-43 located on the HNWR was cleared of vegetation including salt cedar and arrow weed that was cut, chipped, and hauled offsite by a local landscaper. Access to this well site was from the existing gated dirt road from Park Moabi Road between the I-40 freeway and railroad bridges. A single roll-off bin for MW-43 drill cuttings was staged at the bottom of the access road within a previous land use area.

The well coordinates, installation start and end dates, land use acreage, and affected vegetation are presented in Table 1. The total project related land use resulting from installation of the groundwater wells was approximately 2.2 acres. Of these 2.2 acres, approximately 1.2 acres were located within previous land use areas. Therefore, the net project related land use area was approximately 1 acre. Of this 1 acre, approximately 0.4 acre is located on public (BLM and USFWS) land and 0.6 acre is located on private (PG&E) land. The photographs of pre- and post-well site conditions and observed wildlife during the well installations are presented in Appendices A and B, respectively.

Conclusion

The last well (PE-1) installation was completed by 5 March 2005, 10 days before the BLM deadline of 15 March 2005. On 5 March 2005, all drilling equipment and materials were removed from the floodplain and staged at the west mesa for demobilization. The drill rig was loaded and trucked back to Florida. The drill crew attended training from 7 to 11 March 2005 and returned on 14 March 2005 to remove all vehicle tracks from the floodplain. This concluded drilling related activities on the floodplain. The drill crew fully demobilized remaining equipment and materials from the west mesa by 17 March 2005.

The well installation activities occurred in compliance with all regulatory stipulations. In addition to the conditions of the Action Memoranda (Appendix C), additional measures employed upon completion of floodplain well installations included removal of non-project related litter and equipment tracks on the floodplain. As required in the USFWS Action Memorandum, vegetation that was removed for MW-43 will be mitigated by onsite revegetation at a later date.



- LEGEND**
- Property Boundaries
 - Land Use* Associated With Well Installation
 - Previous Land Use* In Area Of Well Instalation

*The significance of the term "use" means only that some activity has taken place over such land. It does NOT signify that any land has been harmed or that any other adverse effects on the land have occurred as a result of the activity.

Sources: San Bernardino County Assessor, Parcel quest, State Board of Equalization, Pacific Gas and Electric Company, and Plat maps provided by BLM.

**TOPOCK GROUNDWATER WELL
INSTALLATION LAND USE MAP
MARCH 2005**
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

Appendix A



CMW-1 Pre-Construction: Viewing southeast at well site location prior to construction.



CMW-1 Post-Construction: Viewing southeast at well site location after construction.



CMW-2 Pre-Construction: Viewing north at well site location prior to construction.



CMW-2 Post-Construction: Viewing north at well site location after construction.



CMW-3 Pre-Construction: Viewing south at well site location prior to construction.



CMW-3 Post-Construction: Viewing south at well site location after construction.



CMW-4 Pre-Construction: Viewing northwest at well site location prior to construction.



CMW-4 Post-Construction: Viewing northwest at well site location after construction.



MW-27 Pre-Construction: Viewing southwest at well site location prior to construction.



MW-27 Post-Construction: Viewing southwest at well site location after construction.



MW-27 Pre-Construction Access: Viewing east at well site access prior to construction.



MW-27 Post-Construction Access: Viewing east at well site location after construction. Notice new access route cleared on left side of photo in order to avoid impact to native trees.



MW-33 Pre-Construction: Viewing north at well site location prior to construction.



MW-33 Post-Construction: Viewing north at well site location after construction.



MW-34 Pre-Construction: Viewing south at well site location prior to construction.



MW-34 Post-Construction: Viewing south at well site location after construction.



MW-42 Pre-Construction: Viewing north at well site location prior to construction.



MW-42 Post-Construction: Viewing north at well site location after construction.



MW-43 Pre-Construction: Viewing south at well site location prior to construction.



MW-43 Post-Construction: Viewing south at well site location after construction.



MW-43 Pre-Construction Access: Viewing east at well site access route prior to well construction.



MW-43 Post-Construction Access: Viewing east at well site access route after well construction.



PE1 Pre-Construction: Viewing southeast at well site location prior to construction.



PE1 Post-Construction: Viewing southeast at well site location after construction.



PE-1A Pre-Construction: Viewing north at bore site location prior to construction.



PE-1A Post-Construction: Viewing north at bore site location after construction.



PE-1B Pre-Construction: Viewing west at bore site location prior to construction.



PE-1B Post-Construction: Viewing west at bore site location after construction.

Wildlife Observed During Groundwater Well Installation Monitoring	
Common Name	Scientific Name
Abert's towhee	<i>Pipilo aberti</i>
American coot	<i>Fulica Americana</i>
American kestrel	<i>Falco sparverius</i>
American white pelican	<i>Pelecanus erythrorhynchos</i>
Anna's hummingbird	<i>Calypte anna</i>
Bewick's wren	<i>Thyomanes bewickii</i>
Black phoebe	<i>Sayornis nigricans</i>
Black-tailed gnatcatcher	<i>Polioptila melanura</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Canada goose	<i>Branta Canadensis</i>
Clark's grebe	<i>Aechmophorus clakii</i>
Coachwhip	<i>Masticophis flagellum</i>
Common grackle	<i>Quiscalus quiscula</i>
Common raven	<i>Corvus corax</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Gambel's quail	<i>Callipepla gambelii</i>
Great egret	<i>Casmerodius albus</i>
Greater roadrunner	<i>Geococcyx californianus</i>
Great-tailed grackle	<i>Quiscalus mexicanus</i>
House finch	<i>Carpodacus erythrinus</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Mourning dove	<i>Falco sparverius</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern rough-winged swallow	<i>Sayornis nigricans</i>
Phainopepla	<i>Phainopepla nitens</i>
Rock dove	<i>Columba livia</i>
Sagebrush lizard	<i>Sceloporus graciosus</i>
Snowy egret	<i>Egretta thula</i>
Turkey vulture	<i>Cathartes aura</i>
Verdin	<i>Auriparus flaviceps</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Western bluebird	<i>Sialia mexicana</i>
Western diamondback rattlesnake	<i>Crotalus atrox</i>
Western whiptail	<i>Cnemidophorus tigris</i>



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Lake Havasu Field Office

2610 Sweetwater Avenue

Lake Havasu City, AZ 86406-9071

In reply, refer to:

CAAZCA 43660 (380)

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

Dear Ms. Meeks:

This letter is in response to your request dated February 23, 2005 for the Bureau of Land Management (BLM) review of well installation and construction activities on BLM Managed Land. You requested the following:

1. Field Activity Summary for Supplemental Interim Measures No. 2, Well Installation on BLM-Managed Land. These wells are included under Action Memo No. 2 previously approved by the BLM. BLM has reviewed and will approve the drilling of the following monitoring and extraction wells: PE-1, PE-1A and PE-1B. Previous surveys by BLM personnel have identified this location as an area of concern because of possible southwestern willow flycatcher habitat. All drilling must be completed prior to March 15, 2005 because of this concern.

You must continue to comply with the mitigation measures attached to Action Memorandum No. 3, dated September 17, 2004, which authorized Interim Measures No. 3 Work Plan, Revision 1 and Action Memorandum No 2, dated March 3, 2004. Additional special conditions of approval are attached to this letter and should be considered a compliance requirement.

If you have questions, contact Project Manager Cathy Wolf-White at (928) 505-1309 or Archaeologist Sally Murray at (928) 505 1238.

Sincerely,

Robert M. Henderson
Acting Field Manager

SPECIAL CONDITIONS OF APPROVAL

1. All drilling activities will be completed prior to March 15. Completing drilling activities by this date should minimize impacts to wildlife and any local/transient Threatened or Endangered Species that could potentially occur within the project area.
2. Only trimming and minor vegetation removal shall occur to allow access by drilling equipment. A biologist knowledgeable with southwestern flora and fauna will conduct a pre-construction survey and will be present during vegetation removal to identify native tree species.
3. All native tree species shall be avoided if possible. In the event that native trees cannot be avoided, those trees will be transplanted to a nearby location approved by the on-site biologist.
4. Disturbance will be kept to a minimum while conducting monitoring studies in the floodplain.
5. A summary biological report will be submitted within 30 days of completion of Phase 2 Interim Measures No. 2. This report will consist of records for all wildlife sightings by on-site biologists during construction. A list of all vegetation removed and transplanted shall also be provided within the report. Photographs of all well locations prior to and after installation will also be provided for BLM review.
6. Staging for these three wells will be at the MW35 well location. Immediately upon completion of the drilling phase all cutting bins will be relocated to the MW20 Bench or onto PG&E properties.

51M

United States Department of the Interior

U.S. Fish and Wildlife Service
Havasu National Wildlife Refuge
PO Box 3009
Needles, CA 92363

ACTION MEMORANDUM

To: Regional Director

From: Refuge Manager, Havasu National Wildlife Refuge

Subject: Time Critical Removal Action.
Pacific Gas and Electric Topock Compressor Facility

I. PURPOSE

This Action Memorandum documents the basis for authorizing a time critical removal action to respond to the release of hazardous substances from the Pacific Gas and Electric (PG&E) Compressor Station near Topock, Arizona (hereafter PG&E facility). Hazardous substances released from the PG&E facility have migrated onto or under land managed by the U.S. Fish and Wildlife Service (Service). Specifically, hazardous substances including, without limitation, hexavalent chromium released from the PG&E facility have been detected in groundwater under the Havasu National Wildlife Refuge (Refuge). This plume of contaminated groundwater has been detected in groundwater samples collected within 100 feet of the Colorado River and is or may be migrating toward the Colorado River.

This time critical removal action is authorized pursuant to the response action authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. §9604. Pursuant to Executive Order 12580, as amended, and Department of the Interior (DOI) Departmental Manual, Section 104, response action authority has been delegated to the Service to address the release or threatened release of hazardous substances on or from land under Service jurisdiction, custody, or control. The purpose of the proposed time critical removal action is to monitor groundwater conditions to determine the extent of contamination and, if necessary, initiate hydrolic control measures needed to reduce further migration of hazardous substances.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The PG&E facility comprises approximately 265 acres located 15 miles southeast of Needles, California, south of Interstate 40, in the north end of the Chemebuevi Mountains. The facility is

on private land adjacent to the Refuge and BLM-managed land and is less than one mile from the Colorado River.

PG&E has been the owner and operator of the PG&E facility since 1951 and has owned the property on which the facility is located since 1965. Beginning in 1951, PG&E used hexavalent chromium as a corrosion inhibitor and algicide in the cooling towers at the facility. The cooling tower water was dumped directly into Bat Cave Wash, an ephemeral stream that flows north from the facility, across the Refuge and BLM-managed lands, and directly into the Colorado River. According to PG&E's estimates, from 1951 to 1969, PG&E disposed annually at least six million gallons of chromium-contaminated wastewater. From 1970 until approximately 1989, PG&E also disposed of wastewater in evaporation ponds on the Refuge adjacent to BLM-managed property. In addition to these evaporation ponds, PG&E disposed of wastewater and/or other waste containing hazardous substances in a percolation bed and an unlicensed injection well at or near the facility.

B. Other Actions to Date

In 1988, PG&E completed a soil investigation in the Bat Cave Wash area at the request of the California Department of Health Services (now known as the Department of Toxic Substances Control; DTSC) and the U.S. Environmental Protection Agency (EPA). The soil investigation documented chromium contamination in the environment around the former percolation bed. A 1989 "Comprehensive Ground Water Monitoring Evaluation," prepared by the California Regional Water Quality Control Board (CRWQCB), identified chromium contamination associated with the injection well.

On 29 May 1995, PG&E reported the presence of chromium in groundwater samples taken on the east side of Bat Cave Wash near the north boundary of the PG&E facility. On 26 February 1996, DTSC and PG&E executed a Corrective Action Consent Agreement pursuant to State law under which DTSC directed PG&E to perform a "Facility Investigation" as well as any "Interim Measures" determined to be necessary to address immediate or potential threats to human health and/or the environment.

In the course of implementing groundwater monitoring required under the Corrective Action Consent Agreement, PG&E has documented an extensive plume of groundwater contaminated with hexavalent chromium that stretches from the PG&E facility under the Refuge and BLM-managed property toward the Colorado River. On 3 February 2004, PG&E reported concentrations of hexavalent chromium of 111 parts per billion (ppb) in groundwater taken from monitoring well (MW) 34-80. This monitoring well is located on BLM-managed property approximately 100 feet from the Colorado River. Based on this finding, DTSC ordered PG&E to prepare and submit Interim Measures (IM) Workplan No. 2 "to immediately begin pumping, transport and disposal of groundwater from existing monitoring wells at the MW 20 cluster." These monitoring wells are located on BLM-managed property. To facilitate the coordination of BLM and DTSC authorities for responding to groundwater contamination from the PG&E facility, by Action Memorandum dated 3 March 2004, BLM authorized PG&E to perform the activities described in IM Workplan No. 2. At that time, no request was made for the Service to authorize IM Workplan No. 2-related facilities or activities on the Refuge.

In June 2004, the Consultative Working Group (the organization comprised of representatives from Federal, tribal, state, and local agencies and tasked with overseeing clean-up) Technical Subcommittee estimated that extraction rates in excess of IM-2 capabilities would be necessary to maintain hydraulic control of the contaminant plume during low river levels typical in winter. IM Workplan No. 3 was developed to address this need. IM Workplan No. 3 called for an on-site or nearby treatment plant with a direct pipeline connection to the MW-20 cluster wells and placed most facilities on BLM-managed or private lands. BLM authorized the IM-3 facilities with an Action Memorandum. IM Workplan No. 3 identified a location for a potential extraction well on the Refuge and associated piping to connect it to the treatment facility. Because PG&E identified this measure as a time critical emergency, on 21 September 2004 the Service authorized the extraction well and piping with a Special Use Permit. Although authorized, no IM-3 facilities or activities have been installed or conducted, respectively.

In December 2004, PG&E requested authorization from the Service to drill a cluster of three monitoring wells at location SO-2, use a "jeep track" and cleared staging area used previously when drilling monitoring wells, construct a new road to the SO-2 site (including removal of native and non-native vegetation), and maintain the new road to allow routine access with an all-terrain vehicle (ATV). The specific activities for which PG&E seeks authorization are described in the attached Technical Memorandum (Attachment 1).

III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT

As documented by groundwater sampling results, hexavalent chromium has been detected in significant concentrations in wells within 100 feet of the Colorado River. The Colorado River is an important drinking water source utilized by more than 20 million people. While investigation to date has not confirmed that contaminated groundwater has reached the Colorado River, the proximity of the groundwater plume to the river constitutes an actual or potential threat of contamination of a significant drinking water supply. In addition, the proximity of the groundwater plume to the river constitutes an actual or potential threat to the environment.

IV. ENDANGERMENT DETERMINATION

The action proposed by PG&E is needed to monitor and assess migration of the contaminant plume. This time critical removal action is necessary to mitigate or abate risks associated with release. The Service has determined, in accordance with Section 300.415(b) (2) of the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP), 42 U.S.C. §300.415(b) (2), that a time critical response is necessary.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The proposed time critical removal action is described in the attached technical memorandum and includes drilling and routinely sampling a monitoring well cluster at the SO-2 location. If this monitoring well indicates a spread of the contamination, PG&E has prior approval to drill and operate the extraction well and associated piping identified by IM Workplan No. 3. The extraction well will be operated in such fashion as to obtain hydraulic control of the contaminant plume. The extracted water will be piped to a treatment plant located on private land. These

facilities would be operated for a limited period of time. The proposed activities and/or facilities are described in IM Workplans Nos. 2 and 3.

The proposed removal action would be authorized for a period not to exceed two years from the date this Action Memorandum is signed. In the event that the Service determines it is necessary and appropriate to extend the time period for which these activities and facilities are authorized, the Service will notify PG&E and DTSC in writing of such determination.

Because the proposed facilities and activities will be installed and operated by PG&E, the Service has not determined the estimated costs to implement this time critical removal action.

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

In the event response action is delayed or not taken, the potential risk of release of hazardous substances into the Colorado River will not be fully monitored, mitigated, or abated.

VII. OUTSTANDING POLICY ISSUES

The Service is coordinating this time critical removal action with work required of PG&E pursuant to the Corrective Action Consent Agreement issued by DTSC. This coordination of Service CERCLA authorities and State Resource Conservation and Recovery Act authorities is intended to facilitate and streamline PG&E's performance of work necessary to protect the Colorado River. The Service must ensure, however, that such work is performed in a manner consistent with CERCLA, the National Contingency Plan (42 U.S.C. Part 300), and other applicable Federal requirements. In the event that Federal requirements are not satisfied through this coordination effort, the Service may be required to initiate, or require PG&E to perform, activities independent of State law.

VIII. ENFORCEMENT

The Service, BLM, and DOI have determined that PG&E is a responsible party pursuant to Section 107 of CERCLA, 42 U.S.C. § 9607. As defined by CERCLA, PG&E is the owner and operator of the PG&E facility from which hexavalent chromium has been released into the environment. Hexavalent chromium is a hazardous substance under CERCLA.

In a 12 February 2004 letter, DOI notified PG&E of its potential liability under CERCLA and has requested that PG&E enter into an administrative order on consent (AOC) by which PG&E would agree to reimburse DOI, the Service, and other DOI bureaus for response costs incurred in overseeing PG&E's performance of response action on Federal property. In the event that DOI is unable to reach an agreement with PG&E over the terms of this AOC, DOI may decide to take response action unilaterally, may initiate enforcement action or take any other measures necessary to direct or require PG&E to perform response action, and seek to recover all response costs incurred from PG&E.

IX. RECOMMENDATION

This decision document authorizes the installation and use of one monitoring well cluster and associated activities on Havasu National Wildlife Refuge. The monitoring well will be sampled routinely to assess the extent of contaminant spread. This action is consistent with DOI policy, and will provide significant environmental and public health benefits by reducing the risk of potential contaminant spread.

The Service has determined that PG&E is capable of performing this action in a manner consistent with the NCP, contingent on PG&E's full compliance with the requirements of this Action Memorandum including Attachment 1 (Technical Memorandum) and Attachment 2 (Special Conditions). I recommend your approval of the proposed facilities and activities.

Approved
Refuge Supervisor AZ/NM

Date

Approved
Regional Chief NWRs, Southwest Region

Date

Approved
Regional Director, Southwest Region

Date

Attachments

ATTACHMENT 2

Time Critical Removal Action, PG&E Topock Facility

HAVASU NATIONAL WILDLIFE REFUGE
SPECIAL CONDITIONS

The authorization to perform the time critical removal action addressed by this Action Memorandum is subject to Pacific Gas and Electric Company's ("PG&E" or "Permittee") agreement to comply with and be bound by the following Special Conditions.

1. All activities on Havasu National Wildlife Refuge (Refuge) are subject to the laws, regulations, and policies of the U.S. Fish and Wildlife Service (Service).
2. Permittee is responsible for ensuring compliance with the substantive requirements of all applicable or relevant and appropriate requirements (ARARs) identified by the Service including, without limitation, ARARs derived from the Clean Water Act, National Historic Preservation Act, Endangered Species Act, and other Federal or more stringent State laws or regulations.
3. This Action Memorandum authorizes activities and facilities for a period not to exceed two years. The authorized activity and related facilities/property must cease and be removed, respectively, within two years unless an extension is issued by the Refuge Manager at least 14 days prior to the expiration of this time.
4. Permittee agrees to indemnify and hold harmless the United States, including the Department of the Interior, the Service, and their agents and employees, from any and all claims or causes of action arising from or on account of acts or omissions of PG&E, its employees, successors, agents, contractors, subcontractors or other persons, in carrying out activities authorized by this Action Memorandum. Permittee further agrees that the United States, and its agencies and employees, shall not be held as a party to any contract entered into by Permittee in carrying out activities under this Action Memorandum.
5. All project activities will be conducted in a manner that avoids a take of any wildlife, particularly threatened and/or endangered (listed) species. Take is defined to include any harm or harassment, including significant habitat modification or degradation that could potentially kill or injure wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Should a listed species enter the project site or become harmed or killed by project activities, the project will be shut down and Permittee will consult immediately with the Service and the California Department of Fish and Game (CDFG). Negative effects to wildlife habitat will also be minimized to the maximum possible extent.
6. Wildlife of any kind will not be handled or harassed. Encounters with listed species will be reported to the CH2MHILL project and Refuge biologists. These biologists will

maintain records of all listed species encountered during project activities. This information will include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations, general conditions and health, any apparent injuries and state of healing, and diagnostic markings.

7. To the maximum extent possible, facilities (e.g., pipelines, wells, and access routes) will be sited within an existing right-of-way and previously disturbed or barren areas to limit new surface disturbance.
8. All PG&E employees and contractors involved with the proposed project will be required to attend PG&E's threatened and endangered species education program prior to initiation of activities. New employees will receive formal, approved training prior to working on-site.
9. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to wildlife or feral animals.
10. Lights will be angled toward the ground, reduced in intensity to levels compatible with safety concerns, and limited in duration of usage. The hue of lighting will be that which is most compatible with and least disturbing to wildlife.
11. Employees will not bring pets to the project site.
12. Firearms will be prohibited from the proposed project site.
13. Employees will be required to check under their equipment or vehicle before it is moved. If a desert tortoise is encountered, the vehicle is not to be moved until the animal has voluntarily moved to a safe distance away from the parked vehicle.
14. Upon completion of well and piping installation, all unused material and equipment will be removed from the site.
15. Upon locating a dead or injured individual of a listed species, PG&E will make initial notification to the Refuge and the Service within three working days. The notification must be made in writing to the Service's Division of Law Enforcement in Torrance (370 Amapala Avenue, Suite 114, Torrance, California 90501; (310) 328-1516) and by telephone and writing to the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003; (805) 644-1766). The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, probable cause of death (if known), and other pertinent information. Animals injured through PG&E activities will be transported to a qualified veterinarian for treatment at the expense of PG&E. If an injured animal recovers, the CDFG and the Refuge will be contacted for final disposition of the animal.
16. The CH2MHill project biologist will be responsible for assisting PG&E employees and

contractors in compliance with the minimization measures, performing surveys in front of the crew as needed to locate and avoid listed species, and monitoring compliance. Preconstruction surveys by a biologist will be implemented for special-status wildlife species in areas of planned disturbance immediately prior to initiation of ground-disturbing activities. The inspection will provide 100 percent coverage of the area within the project limits. All desert tortoise burrows and patters outside of, but near, the project footprint will be flagged at that time so that they may be avoided during work activities. At the conclusion of work activities, all flagging will be removed.

17. Preconstruction surveys for avian nesting pairs, nests, and eggs will occur in areas proposed for any vegetation removal and active nesting areas flagged. If nesting birds are detected, vegetation removal will be avoided and Refuge and CH2MHill biologists will be notified.
18. All native vegetation (particularly Palo verde, ocotillo, mesquite, willow species, cottonwood, cat-claw, smoke tree, and cacti species) are considered sensitive by the Refuge. To the maximum extent practicable, Permittee will avoid negative effects to these species.
19. PG&E will designate a field contact representative (FCR) who will be responsible for overseeing compliance with the minimization measures. The FCR must be onsite during all construction activities. The FCR will have authority to halt all activities that are in violation of any Special Conditions. The FCR will have a copy of all special conditions when work is being conducted on the site. The FCR may be a project manager, PG&E representative, or a biologist.
20. The area of disturbance will be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public health and safety, and other limiting factors. As needed, work area boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicle or equipment straying.
21. All activities will be restricted to a pre-determined corridor. If unforeseen circumstances require project expansion, the potential expanded work areas will be surveyed for listed species prior to use of the area. All appropriate minimization measures will be implemented within the expanded work areas based on the judgment of the Refuge biologist. Work outside of the original Refuge-designated area will proceed only after receiving written approval from the Refuge, Service, and CDFG describing the exact location of the expansion.
22. All open holes and trenches will be inspected for trapped desert tortoises at the beginning, middle, and end of the work day, at a minimum. PG&E has the option of erecting desert tortoise fencing in lieu of inspection of open trenches. During excavation of trenches or holes, earthen ramps will be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped. If a desert tortoise is trapped, the Refuge biologist

- will be notified immediately. The desert tortoise will be allowed to escape before work continues in that location. A final inspection of the open trench segment will also be made immediately before back filling. All open pipe segments will be covered when work activity is not occurring at the site. Trenches must meet the safety requirements of the Occupational Safety and Health Administration before personnel enter open trenches to remove wildlife.
23. All construction vehicles and equipment will be periodically checked to ensure proper working condition and to ensure that there is no potential for fugitive emissions of oil, hydraulic fluid or other hazardous products. The Refuge will be informed of any hazardous spills.
24. Workers will exercise caution when traveling to and from the project area. To minimize the likelihood for vehicle strikes of wildlife, the speed limit when traveling unpaved area roads will be 15 miles per hour.
25. Intentional killing or collection of plants, other than authorized by this Action Memorandum is prohibited. Permittee will notify the Refuge of any such occurrences.
26. For emergency situations involving a pipeline leak or spill or any other immediate safety hazard, PG&E will notify the Refuge within 24 hours. As a part of this emergency response, the Refuge may require specific measures to protect wildlife. During cleanup and repair, the Refuge may also require measures to recover damaged habitats.
27. Once the well facility and all terrain vehicle access route are no longer needed, PG&E will be required, as directed by the Refuge, to restore disturbed areas in a manner that will assist in the re-establishment of biological values (as per Condition 31). Methods of such restoration will include the reduction of erosion, planting with appropriate native trees, and irrigation of reestablished vegetation for three years following planting.
28. Within 60 days of completion of construction activities, the FCR and PG&E biologist will prepare a brief report for the Refuge documenting the effectiveness of the minimization measures and making recommendations for modifying the measures to enhance species protection. The report will also provide information on survey and monitoring activities, observed listed species, and the actual acreage disturbed by the project.
29. All areas within the proposed action area and within the potential impact of the action will be monitored semiannually by PG&E during the active period for tortoise by a biologist knowledgeable of desert tortoise ecology. These surveys will be completed throughout the duration of the action to verify the presence or absence of desert tortoise and reports will be provided to the biologists at the Refuge office on an annual basis.
30. PG&E will survey riparian areas surrounding the proposed action site for southwestern willow flycatchers according to the protocol established by the Service. These surveys

will be completed each year by a biologist permitted by the Service to carry out flycatcher surveys until the action has been completed and all facilities have been removed. Reports will be provided to the biologists at the Refuge office on an annual basis.

31. During December 2005, all areas used (including equipment storage/staging areas and access routes; excepting a six-foot wide ATV access route across and from the staging area to the well site) will be revegetated with native trees according to the following (Refuge biologists will be available for consultation on methods, techniques, and tree sources.).
- Fremont's Cottonwood from the mainstem Colorado River trees will be planted.
 - Trees will be planted on a three-foot by three-foot spacing.
 - Trees will be irrigated for three years following planting, such that after three years they will survive as historical wildlife habitat without irrigation.
 - If, after five years, tree survival falls below 80%, the previously planted areas will be revegetated using native honey mesquite in a five-foot by five-foot spacing. Irrigation and survival expectations will be the same as with the cottonwood.

IX. RECOMMENDATION

This decision document authorizes the installation and use of one monitoring well cluster and associated activities on Havasu National Wildlife Refuge. The monitoring well will be sampled routinely to assess the extent of contaminant spread. This action is consistent with DOI policy, and will provide significant environmental and public health benefits by reducing the risk of potential contaminant spread.

The Service has determined that PG&E is capable of performing this action in a manner consistent with the NCP, contingent on PG&E's full compliance with the requirements of this Action Memorandum including Attachment 1 (Technical Memorandum) and Attachment 2 (Special Conditions). I recommend your approval of the proposed facilities and activities.

Jeannie Wagner-Dover (Acting)

Approved
Refuge Supervisor AZNM

2-10-05

Date

Donald R. Cline

Approved
Regional Chief NWRS, Southwest Region

2/10/2005

Date

Don R. Cline

Approved
Acting Regional Director, Southwest Region

2/14/2005

Date

Attachments



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Lake Havasu Field Office

2610 Sweetwater Avenue

Lake Havasu City, AZ 86406-9071

In reply refer to:

CAAZCA 43660 (330)

December 29, 2004

Yvonne Meeks

Portfolio Manager – Site Remediation

Pacific Gas & Electric Company

4325 South Higuera Street

San Luis Obispo, CA 93401

Dear Ms. Meeks:

This letter is in response to your request dated December 22, 2004 for the Bureau of Land Management (BLM) review of well installation and construction activities on BLM managed land. Pacific Gas and Electric Company (PG&E) requested the following:

1. Field Activity Summary for Supplemental Interim Measures No. 2, Well Installation on BLM-Managed Land identifies 8 proposed well locations. These wells are included under Action Memorandum No. 2 previously approved by the BLM. BLM has reviewed the Field Activity Summary and approves the drilling of the following 7 monitoring and extraction wells: MW-27, MW-34, MW-33, SO-1, CW-1, PE-1, and PE-3. Contingency monitoring well location SO-4 is located near a riparian area within Bat Cave Wash. Previous surveys by BLM personnel have identified this location as an area of concern because of possible southwestern willow flycatcher habitat. An on-site field inspection was not conducted for SO-4 and BLM will not approve SO-4 in its current location at this time.

2. Design Plan for Groundwater Compliance Monitoring, Supplemental IM-3 Workplan identifies 7 well locations on BLM-managed land and PG&E private property. BLM has reviewed the Design Plan and approves the following 7 proposed compliance monitoring wells: CMW-1, CMW-5, CMW-6 on BLM property and CMW-2, CMW-3, CMW-4 and CMW-7 located on PG&E property.

3. Field Change for Construction of Valve Vault No. 1 and Extraction Well Vaults (MW-20 Bench). PG&E requests installation of a concrete valve box to be located on the MW-20 bench location with three brine tanks to be set where the last three treatment tanks are currently in place. BLM has reviewed this proposal and approves this location. This action is covered under Action Memorandum No. 2 since it is part of the required work to enable the correct functioning of the facility.

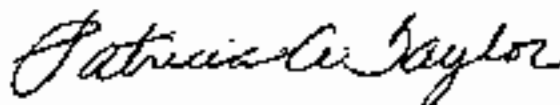
The Workplan included proposed well locations on Havasu National Wildlife Refuge (HNWR). BLM does not have jurisdiction on U.S. Fish and Wildlife Service property, and cannot authorize requests on the HNWR.

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2

You must continue to comply with the mitigation measures attached to Action Memorandum No. 3, dated September 17, 2004, which authorized Interim Measures No. 3 Work Plan, Revision 1 and Action Memorandum No 2, dated March 3, 2004. Additional Special Conditions of Approval are enclosed and should be considered a compliance requirement.

If you have questions, contact Project Manager Cathy Wolff-White at (928) 505-1309 or Wildlife Biologist Mark Howell at (928) 505-1226.

Sincerely,



Patricia A. Taylor
Acting Field Manager

Enclosure

SPECIAL CONDITIONS OF APPROVAL

1. All drilling activities will be completed prior to March 15, 2005. Completing drilling activities by this date should minimize impacts to wildlife and any local/transient Threatened or Endangered Species that could potentially occur within the project area.
2. Monitoring Well MW-27M/D is located in dense vegetation and, because of its location, will be a high priority item in the construction schedule. MW-27M/D shall be completed as early as possible to minimize potential impacts to avian species during the breeding season. Vegetation clearing for installation of MW-27M/D will be kept to a minimum and occur to the north of the access route. Only trimming and minor vegetation removal shall occur to allow access by drilling equipment. A biologist knowledgeable with southwestern flora and fauna will conduct a pre-construction survey and will be present during vegetation removal to identify native tree species.
3. All native tree species shall be avoided if possible. In the event that native trees cannot be avoided, those trees will be transplanted to a nearby location approved by the on-site biologist.
4. Disturbance will be kept to a minimum while conducting monitoring studies in the floodplain. If possible, vehicle travel shall be limited and foot travel will be used to access MW-27M/D. No motorized vehicle travel will occur within the dense vegetation along the southern portion of the floodplain for monitoring data gathering. If possible, vehicles shall stay at least 100' from the area of dense vegetation surrounding MW-27M/D.
5. A summary biological report will be submitted within 30 days of completion of Phase 2 Interim Measures No. 2. This report will consist of records for all wildlife sightings by on-site biologists during construction. A list of all vegetation removed and transplanted shall also be provided within the report. Photographs of all well locations prior to and after installation will also be provided for BLM review.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKE HAVASU FIELD OFFICE

In Reply Refer To:
CAAZCA 43660
2640 (AZ-070)

September 17, 2004

ACTION MEMORANDUM

TO: State Director

FROM: Acting Field Manager, Lake Havasu Field Office

THROUGH: Acting District Manager, Colorado River District

SUBJECT: Time Critical Removal Action No. 3,
Pacific Gas and Electric Topock Compressor Facility

1. PURPOSE

This Action Memorandum documents the basis for authorizing a time critical removal action to address the release of hazardous substances from the Pacific Gas and Electric ("PG&E") Compressor Station near Topock, Arizona (hereafter "PG&E facility"). Hazardous substances released from the PG&E facility have migrated onto or under land managed by the Bureau of Land Management ("BLM") on behalf of the Bureau of Reclamation ("BOR"). Specifically, hazardous substances including, without limitation, hexavalent chromium released from the PG&E facility have been detected in groundwater under BLM-managed land. This plume of contaminated groundwater has been detected in groundwater within 100 feet of the Colorado River and is or may be migrating toward the Colorado River.

This proposed time critical removal action is authorized pursuant to the response action authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. 9604. Pursuant to Executive Order 12580, as amended, and Department of the Interior ("DOI") Departmental Manual, Section 104 response action authority has been delegated to BLM to address the release or threatened release of hazardous substances on or from land under BLM's jurisdiction, custody, or control.

The purpose of this proposed time critical removal action is to undertake additional measures, as specified herein, to maintain hydraulic control of the groundwater plume to prevent or abate the release of hexavalent chromium into the Colorado River.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The PG&E facility comprises approximately 265 acres located 15 miles southeast of Needles, California, south of Interstate 40, in the north end of the Chemehuevi Mountains. The facility is on private land owned by PG&E and is situated within the Havasu National Wildlife Refuge. The facility is located within one-half a mile of BLM-managed land and is less than one mile from the Colorado River.

PG&E has been the owner and operator of the PG&E facility since 1951 and has owned the property on which the facility is located since 1965. Beginning in 1951 and continuing to approximately 1989, PG&E conducted onsite disposal of significant quantities of wastewater containing hexavalent chromium from the cooling towers of the compressor station at the facility. According to PG&E's estimates, from 1951 to 1969, PG&E disposed annually at least six million gallons of untreated chromium-contaminated wastewater into Bat Cave Wash, an ephemeral stream that flows north from the facility across Havasu National Wildlife Refuge and BLM-managed land emptying into the Colorado River. From 1970 to 1989, PG&E disposed its wastewater into evaporation ponds on Havasu National Wildlife Refuge property adjacent to BLM-managed property.

B. Other Actions to Date

In 1988, PG&E completed a soil investigation in the Bat Cave Wash area at the request of the California Department of Health Services (now known as the Department of Toxic Substances Control ("DTSC")) and the U.S. Environmental Protection Agency ("EPA"). The soil investigation documented chromium releases to the environment. In 1989, a "Comprehensive Ground Water Monitoring Evaluation" prepared by the California Regional Water Quality Control Board identified chromium releases in groundwater.

By letter dated May 29, 1995, PG&E reported the presence of chromium in groundwater samples taken on the east side of Bat Cave Wash near the north boundary of the PG&E facility. In response, on February 26, 1996, DTSC and PG&E executed a Corrective Action Consent Agreement pursuant to State law under which DTSC directed PG&E to perform a "Facility Investigation" as well as any "Interim Measures" determined to be necessary to address immediate or potential threats to human health and/or the environment.

In the course of implementing groundwater monitoring required under the Corrective Action Consent Agreement, PG&E has documented an extensive plume of groundwater contaminated with hexavalent chromium that stretches from the PG&E facility under National Wildlife Refuge and BLM-managed property toward the Colorado River. On February 3, 2004, PG&E reported concentrations of hexavalent chromium of 111 parts per billion ("ppb") in groundwater taken

from monitoring well MW34-80. This monitoring well is located on BLM-managed property within 100 feet from the Colorado River.

Based on this finding, DTSC ordered PG&E to prepare and submit Interim Measures ("IM") Work Plan No. 2 "to immediately begin pumping, transport and disposal of groundwater from existing monitoring wells at the MW20 cluster." These monitoring wells located on or near the "MW20 bench" are on BLM-managed property. By Action Memorandum issued March 3, 2004, BLM authorized PG&E to conduct a time critical removal action, consistent with IM No. 2, to prevent or abate the release of hexavalent chromium into the Colorado River. The scope of this removal action was to extract contaminated groundwater from existing or, if necessary, new wells to reverse the groundwater gradient away from the Colorado River and maintain hydraulic control of the chromium-contaminated plume.

On May 20, 2004, BLM issued a second Action Memorandum authorizing PG&E to operate, for a limited period of time, a batch treatment system on the MW20 bench. The purpose of this time critical removal action was to reduce the volume of hazardous waste being shipped offsite by allowing treatment of contaminated groundwater onsite prior to offsite transport and disposal as non-hazardous waste.

III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT

As documented by recent groundwater sampling results, hexavalent chromium has been detected in significant concentrations in wells within 100 feet of the Colorado River. The proximity of the groundwater plume to the Colorado River constitutes an actual or potential threat to the environment.

To date, the rate of extraction of groundwater has succeeded in maintaining hydraulic control of the chromium plume. However, due to the influence of water levels in the Colorado River on groundwater gradient, increasing groundwater extraction rates is expected to be necessary to maintain hydraulic control of the chromium-contaminated plume. Specifically, during the period of lowest river levels from October 2004, through January 2005, extraction rates between 120-150 gallons per minute may be required to maintain such hydraulic control. Existing storage and treatment capacity on the MW20 bench is insufficient to satisfy these increased extraction rates.

Expansion of the existing facilities on the MW20 bench as the sole means of managing the maximum projected groundwater volume poses several concerns for public health and safety, and ease of implementation. Our review of the Potential Expansion of Facilities on the Monitoring Well 20 (MW20) Bench, submitted on September 17, 2004 shows that transporting the maximum projected volume of groundwater from the MW20 bench would require more than 40 trucks per day, increasing risks of transportation accidents and hazardous waste spills, adverse impacts on local roads and residents, and potential impacts on cultural and biological resources. Additional offsite treatment and disposal facilities that could accommodate the additional volume of hazardous waste on a 24 hours a day, seven days a week basis would be required. Such disposal facilities would be several hundred miles from the Topock site. For these reasons and others, expanding the MW20 bench facilities as the sole means of managing the volume of

extracted groundwater necessary to maintain hydraulic control of the chromium-contaminated plume is undesirable.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances through groundwater may continue to migrate toward the Colorado River and may reach the River if not addressed by implementing the time critical removal action described in this Action Memorandum. This time critical removal action is necessary to prevent or abate the release or substantial threat of release of hazardous substances into the Colorado River. Due to the proximity of the groundwater plume to the River, BLM determines, in accordance with Section 300.415(h)(2) of the National Oil and Hazardous Substances Contingency Plan ("National Contingency Plan" or "NCP"), 42 U.S.C. §300.415(h)(2), that a time critical response is necessary.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

As described specifically in the attached *Interim Measures No. 3 Work Plan, Revision 1* ("Work Plan"), which is incorporated herein, the proposed time critical removal action includes the following actions: (1) installation and utilization of piping from the MW20 bench to a proposed private treatment facility on Parcel 650-151-06; (2) installation and utilization of piping for conveyance of treated water from the proposed private treatment facility to proposed injection wells on Parcel 650-151-06; (3) any necessary improvements to existing access roads to install piping or remove waste materials from the proposed private treatment facility; (4) potential installation of monitoring wells to evaluate the effects on groundwater flow and chemistry due to injection of treated waste water; and (5) expansion of facilities on, and transportation from, the MW20 bench to accommodate, for a limited time period, the potential need to transport treated water and brine until more permanent disposal measures are in place. These activities, as identified in the attached Work Plan, are authorized by this Action Memorandum: provided, however, that prior to implementation all such activities are subject to BLM review and approval. Specifically, all such measures must comply with appropriate mitigation measures as identified by BLM in consultation with affected parties, to address impacts on cultural and biological resources and satisfy all applicable Federal requirements.

In particular, implementation of the activities identified in the Work Plan must comply with all mitigation measures identified in the *Cultural Resources Management Plan for the Topock Compressor Station Expanded Groundwater Extraction and Treatment System, San Bernardino County, California (September 2004)*, as specified by the Memorandum of Agreement executed on September 14, 2004, by BLM, and the California State Historic Preservation Officer regarding Interim Measures No. 3. Furthermore, implementation of the activities identified in the Work Plan must comply with all mitigation measures identified, and to be identified by BLM in the attached *Lake Havasu Field Office Wildlife and Threatened or Endangered Species Stipulations*, and in consultation with State agencies and the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act, 16 U.S.C. §1536.

Because such actions will be financed by PG&E, BLM has not determined the estimated costs to implement this time critical removal action.

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

In the event this time critical response action is delayed or not taken, hazardous substances may be released, or there is a substantial threat of such release, into the Colorado River.

VII. OUTSTANDING POLICY ISSUES

BLM is coordinating this time critical removal action with work required of PG&E pursuant to the Corrective Action Consent Agreement issued by DTSC. This coordination of BLM CERCLA authorities and State RCRA authorities is intended to facilitate and streamline PG&E's performance of work necessary to protect the Colorado River. BLM must ensure, however, that such work is performed in a manner consistent with CERCLA, the NCP, and other applicable Federal requirements. In the event that Federal requirements are not satisfied through this coordination effort, BLM may be required to initiate, or require PG&E to perform, activities independent of State law.

VIII. ENFORCEMENT

BLM and DOI have determined that PG&E is a responsible party pursuant to Section 107 of CERCLA, 42 U.S.C. §9607. As defined by CERCLA, PG&E is the owner and operator of the PG&E facility from which hexavalent chromium has been released into the environment. Hexavalent chromium is a hazardous substance under CERCLA.

By letter dated February 12, 2004, DOI has notified PG&E of its potential liability under CERCLA and has requested that PG&E enter into an administrative order on consent ("AOC") by which PG&E would perform future response action and agree to reimburse DOI, BLM, and other DOI bureaus for response costs incurred in overseeing PG&E's performance of response action on Federal property. In the event that DOI is unable to reach an agreement with PG&E over the terms of this AOC, DOI may decide to take response action unilaterally, may initiate enforcement action or take any other measures necessary to direct or require PG&E to perform response action, and seek to recover all response costs incurred from PG&E.

IX. ADDITIONAL MITIGATION MEASURES

Further review of the proposal revealed that the Mitigation Measures in Section 7.0 of Interim Measures No. 3 Work Plan, Revision 1 need further revision. The attachment entitled Mitigation Measures, Lake Havasu Field Office replaces Section 7.0 of the Interim Measures No. 3 Workplan, Revision 1, in its entirety.

X. RECOMMENDATION

This decision document identifies the current proposed time critical removal action to prevent or abate releases of hexavalent chromium from the PG&E facility from migrating to the Colorado River. BLM has determined that PG&E is capable of performing this removal action in a manner consistent with the NCP, contingent on PG&E's full compliance with the requirements of this Action Memorandum including the attached Work Plan. Conditions at the site meet the criteria for undertaking the proposed time critical removal action, as specified by Section 300.415 (b)(2) of the NCP, 40 CFR §300.415(b)(2). We recommend your approval of the proposed time critical removal action.

Patricia A. Taylor
Acting Field Manager

9-17-04
Date

I Concur:

Wayne King
Acting District Manager

9/17/2004
Date

Glenn J. Zielinski
Approval
State Director

9/17/04
Date

Disapproval
State Director

Date

Attachments:

- Interim Measures No. 3 Work Plan, Revision 1
- Memorandum of Agreement between BLM, Lake Havasu Field Office and California State Historic Preservation Officer
- Mitigation Measures, Lake Havasu Field Office
- Potential Expansion of Facilities on the Monitoring Well 20 (MW20) Bench

MITIGATION MEASURES

LAKE HAVASU FIELD OFFICE

1. All project activities shall be conducted in a manner that avoids take of a Federally listed species. Take is defined to include any harm or harassment, including significant habitat modification or degradation that could potentially kill or injure listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Should a listed species enter the project site or become harmed or killed by project activities, the project shall be shut down and the USFWS, BLM and CDFG shall be consulted. Impacts to habitat shall also be minimized to the maximum possible extent.
2. PG&E shall designate a field contact representative (FCR) who shall be responsible for overseeing compliance with the mitigation measures. The FCR must be onsite during all construction activities. The FCR shall have authority to halt all activities that are in violation of the mitigation measures and/or pose a danger to listed species. The FCR shall have a copy of all mitigation measures when work is being conducted on the site. The FCR may be a project manager, PG&E representative, or a biologist.
3. PG&E shall have a qualified biologist responsible for assisting crews in compliance with the mitigation measures, performing surveys in front of the crew as needed to locate and avoid listed species, and monitoring compliance. Preconstruction surveys by a biologist shall be implemented for special-status wildlife species in impact areas immediately prior to initiation of ground-disturbing activities. The inspection shall provide 100 percent coverage of the area within the project limits. All desert tortoise burrows and pellets outside of, but near, the project footprint shall be flagged at that time so that they may be avoided during work activities. At the conclusion of work activities, all flagging shall be removed.
4. Listed species including the desert tortoise shall not be handled or harassed. Encounters with a listed species shall be reported to the project biologist and BLM Lake Havasu (BLM) biologists. These biologists will maintain records of all listed species encountered during project activities. This information will include for each individual: the locations (narrative, vegetation type, and maps) and dates of observations; general conditions and health; any apparent injuries and state of healing; and diagnostic markings.
5. All PG&E employees and contractors involved with the proposed project shall be required to attend PG&E's threatened and endangered species education program prior to initiation of activities. New employees shall receive formal, approved training prior to working on-site.
6. To the maximum extent possible, facilities (treatment facility, pipelines, injection wells, and access routes) shall be sited within an existing right-of-way (ROW) and previously-disturbed or barren areas to limit new surface disturbance.
7. Existing routes of travel to and from the proposed project site shall be used. Cross-country use of vehicles and equipment shall be prohibited.
8. Trash and food items shall be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs.

9. To minimize effects, lights shall be angled toward the ground, reduced in intensity to levels compatible with safety concerns, and limited in duration of usage. The hue of lighting shall be that which is most compatible with and least disturbing to wildlife.
10. Employees shall not bring pets to the project site.
11. Firearms shall be prohibited from the project site, except as required for security employees.
12. Employees shall be required to check under their equipment or vehicle before it is moved. If a desert tortoise is encountered, the vehicle is not to be moved until the animal has voluntarily moved to a safe distance away from the parked vehicle.
13. Upon project completion, all unused material and equipment shall be removed from the site. This condition does not apply to fenced sites.
14. Palo verde, ocotillo, mesquite, cat-claw, smoke tree, and cacti species are considered sensitive by the BLM. To the extent practicable, these species shall be avoided. If avoidance is not possible, these species shall be transplanted when practical. Should any of the aforementioned plants be destroyed, they shall be replaced.
15. The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public health and safety, and other limiting factors. As needed, work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying.
16. All activities shall be restricted to a pre-determined corridor. If unforeseen circumstances require project expansion, the potential expanded work areas shall be surveyed for listed species prior to use of the area. All appropriate mitigation measures shall be implemented within the expanded work areas based on the judgment of the agencies and the project biologist. Work outside of the original ROW shall proceed only after receiving written approval from the BLM, Fish and Wildlife Service (Service) and CDFG describing the exact location of the expansion.
17. PG&E has the option of erecting desert tortoise fencing in lieu of inspection of open trenches. If the trench is short, personnel may monitor the trench. All open holes and trenches shall be inspected for trapped desert tortoises at the beginning, middle, and end of the work day, at a minimum. During excavation of trenches or holes, earthen ramps shall be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped. If desert tortoises are trapped, the project biologist shall be notified immediately. The desert tortoise shall be allowed to escape before work continues in that location. A final inspection of the open trench segment shall also be made immediately before back filling. All open pipe segments shall be covered when work activity is not occurring at the site.
18. All construction vehicles and equipment shall be periodically checked to ensure proper working condition and to ensure that there is no potential for fugitive emissions of oil, hydraulic fluid or other hazardous products. The BLM shall be informed of any hazardous spills.

19. Workers shall exercise caution when traveling to and from the project area. To minimize the likelihood for vehicle strikes of listed species, speed limits when commuting to project areas on ROW roads shall not exceed 20 miles per hour.
20. Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas shall be prohibited. The BLM shall be notified of any such occurrences.
21. For emergency situations involving a pipeline leak or spill or any other immediate safety hazard, PG&E shall notify the BLM within 48 hours. As a part of this emergency response, the BLM may require specific measures to protect listed species. During cleanup and repair, the agencies may also require measures to recover damaged habitats.
22. Once the treatment facility is no longer needed, PG&E shall restore disturbed areas in a manner that will assist in the re-establishment of biological values within the disturbed ROW. Methods of such restoration shall include the reduction of erosion, re-spreading of the top two inches of soil, planting with appropriate native shrubs, and scattering of bladed vegetation and rocks across the ROW, depending upon the appropriateness or effectiveness in a given area.
23. Within 60 days of completion of construction activities, the FCR and biologist shall prepare a brief report for the BLM documenting the effectiveness and practicality of the mitigation measures and making recommendations for modifying the measures to enhance species protection. The report will also provide information on survey and monitoring activities, observed listed species, and the actual acreage disturbed by the project.
24. Any future construction during the nesting season for migratory birds, generally February to August for most birds, will require preconstruction surveys for nesting pairs, nests, and eggs. These preconstruction surveys shall occur in areas proposed for any vegetation removal and active nesting areas flagged. If nesting birds are detected, vegetation removal will be avoided during the nesting season. All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests.
25. All areas within the proposed action area, subject to operations and maintenance activities, and within the potential impact of the action shall be monitored semiannually during the active period for tortoise by a biologist knowledgeable of desert tortoise ecology. Surveys shall be completed throughout the duration of the action to verify the presence or absence of desert tortoise and reports shall be provided to the biologists in the BLM Lake Havasu Field Office on an annual basis.
26. Riparian areas surrounding the proposed action site and subject to influence of operations and maintenance activities shall be surveyed for southwestern willow flycatchers according to the protocol established by the Service. These surveys shall be completed each year by a biologist permitted by the Service to carry out flycatcher surveys until the action has been completed and all facilities have been removed. Reports shall be provided to the biologists in the BLM Lake Havasu Field Office on an annual basis.
27. Upon locating an individual of a dead or injured listed species, PG&E shall make initial notification to the BLM and US Fish and Wildlife Service (Service) within three working days of its finding. The notification must be made in writing to the Service's Division of Law Enforcement in Torrance (370 Arapahoe Avenue, Suite 114, Torrance, California 90501;

(310) 328-1516) and by telephone and writing to the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003; (805) 644-1766). The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Animals injured through PG&E activities shall be transported to a qualified veterinarian for treatment at the expense of PG&E. If an injured animal recovers, the CDFG and the BLM shall be contacted for final disposition of the animal.

28. PG&E will immediately notify the BLM Lake Havasu Field Manager (or his designated representative) of any cultural resources (prehistoric/historic sites or objects) and/or paleontological resources (fossils) encountered during permitted operations and will maintain the integrity of such resources pending subsequent investigation. All operations in the immediate area of the discovery must be suspended until written authorization from BLM to proceed is issued. An evaluation of the discovery shall be made by a qualified archaeologist or paleontologist to determine appropriate actions to prevent the loss of significant cultural or scientifically-important paleontological values.
29. No permanent improvements that affect the integrity of the bridge/culvert over Bat Cave Wash on historic Route 66 will be implemented.
30. Actions that result in impacts to archaeological or historical resources are subject to the provisions of the Archaeological Resources Protection Act of 1979, as amended, and the Federal Land Policy and Management Act of 1976.

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5 **MEMORANDUM OF AGREEMENT**
6 **BETWEEN**
7 **THE BUREAU OF LAND MANAGEMENT, LAKE HAVASU FIELD OFFICE**
8 **AND**
9 **THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER**
10 **REGARDING**
11 **THE PACIFIC GAS & ELECTRIC TOPOCK INTERIM MEASURES NO. 3,**
12 **EXPANDED GROUNDWATER EXTRACTION AND TREATMENT PROJECT**
13 **SAN BERNARDINO COUNTY, CALIFORNIA**
14
15

16 WHEREAS, Pacific Gas & Electric Company (PG&E) proposes to construct, operate and
17 maintain in the area depicted as the "Area of Potential Effects" (APE) in Figure 1 of Attachment
18 1 to this Memorandum of Agreement (MOA), an expanded groundwater extraction and treatment
19 system, called the Topock Interim Measures No. 3 Project (Project), in order to maintain
20 hydrologic control of an area in which groundwater has been contaminated by Chromium VI to
21 prevent Chromium-contaminated groundwater from impacting the Colorado River; and
22

23 WHEREAS, the U.S. Department of the Interior, Bureau of Land Management (BLM), Lake
24 Havasu Field Office, proposes to issue an Action Memorandum under the Comprehensive
25 Environmental Response, Compensation, and Liability Act (CERCLA) (Undertaking)
26 authorizing PG&E to conduct that portion of the Project located on public lands, and will act as
27 lead federal agency for all lands within the current and within any expanded APE of the
28 Undertaking and the Project, regardless of ownership, for purposes of complying with Section
29 106 of the National Historic Preservation Act, as amended (NHPA) (16 U.S.C. 470f), and its
30 implementing regulations codified at 36 CFR part 800; and
31

32 WHEREAS the BLM, in consultation with the California State Historic Preservation Office
33 (SHPO), has determined that construction, operation, maintenance, and subsequent dismantling
34 of the Project will have an adverse effect upon CA-SBr-2910H, a property determined eligible
35 for inclusion in the National Register of Historic Places (NR) and upon CA-SBr-219, a property
36 listed in the NR (historic properties), and notified the Advisory Council on Historic Preservation
37 (ACHP) of the adverse effect finding in accordance with 36 CFR part 800, regulations effective
38 January 11, 2001, implementing Section 106 of the NHPA; and
39

40 WHEREAS, PG&E will construct, operate, maintain, and ultimately dismantle the Project,
41 implement the *Cultural Resources Management Plan for the Topock Compressor Station*
42 *Expanded Groundwater Extraction and Treatment System, San Bernardino County, California*
43 (Applied Earthworks, September 2004) (CRMP) that is Attachment 1 to this MOA, has
44 participated in the consultation, and has been invited to concur in this MOA; and

1
2 WHEREAS, the BLM has consulted the Quechan Tribe-Fort Yuma, Ft. Mohave Indian Tribe,
3 Cocopah Indian Tribe, Chemehuevi Indian Tribe, Havasupai Tribe, Hualapai Tribe, Yavapai-
4 Prescott Indian Tribe, Twenty-Nine Palms Band of Mission Indians and Colorado River Indian
5 Tribes (Tribes) regarding the Project and the Undertaking and their effect on historic properties,
6 and will continue to consult with the Tribes throughout the implementation of this MOA and the
7 CRMP;

8
9 NOW, THEREFORE, the BLM and the SHPO agree that the Project and the Undertaking shall
10 be implemented in accordance with the following stipulations in order to take into account the
11 effects of the Project and the Undertaking on historic properties, and further agree that these
12 stipulations shall govern the Project and the Undertaking and all of their parts until this MOA
13 expires or is terminated.

14 15 Stipulations

16
17 The BLM shall ensure that the following measures are carried out:

18 19 20 I. MANAGEMENT OF HISTORIC PROPERTIES AND CULTURAL RESOURCES

- 21
22 A. The BLM shall ensure that known historic properties and other cultural resources, whether
23 known or unknown that may be subsequently identified, within the current APE and within
24 any expanded APE, are managed in accordance with the CRMP. Unsurveyed portions of the
25 current APE and any expanded APE shall be surveyed and inventoried as prescribed in the
26 CRMP.
27
28 B. Notwithstanding the current provisions of section 1.3, page 4, of the CRMP, the parties to
29 this MOA agree that copies of survey and evaluation reports and of annual reports will
30 routinely be submitted to the SHPO.
31
32 C. The parties to this MOA agree that the effects and any prospective effects of the Project and
33 of the Undertaking on historic properties and cultural resources subject to this MOA shall be
34 resolved by satisfactory implementation and completion of the measures prescribed in the
35 CRMP or in any amendments thereto agreed upon pursuant to stipulation II.C.2., below.
36

37 II. ADMINISTRATIVE PROVISIONS

- 38
39 A. Confidentiality. The parties to this MOA acknowledge that historic properties and cultural
40 resources covered by this MOA are subject to the provision of § 304 of the National Historic
41 Preservation Act of 1966 and § 6254.10 of the California Government Code (Public Records
42 Act), relating to the disclosure of archaeological site information and, having so
43 acknowledged, will ensure that all actions and documentation prescribed by this MOA are
44 consistent with § 304 of the NHPA and § 6254.10 of the California Government Code.

B. Resolving Objections.

1. Should any party to this MOA object to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA (other than the Project and the Undertaking itself) or to any documentation prepared in accordance with and subject to the terms of this MOA, the BLM shall immediately notify the other parties to this MOA of the objection and consult with the objecting party and the other parties to this MOA for no more than fourteen (14) days to resolve the objection. The BLM shall reasonably determine when this consultation will commence. If the objection is resolved through such consultation, the action in dispute may proceed in accordance with the terms of that resolution. If, after initiating such consultation, the BLM determines that the objection cannot be resolved through consultation, the BLM shall forward all documentation relevant to the objection to the ACHP, including the BLM's proposed response to the objection, with the expectation that the ACHP will within thirty (30) days after receipt of such documentation:

- a. advise the BLM that the ACHP concurs in the BLM's proposed response to the objection, whereupon the BLM will respond to the objection accordingly; or
- b. provide the BLM with recommendations, which the BLM will take into account in reaching a final decision regarding its response to the objection; or
- c. notify the BLM that the objection will be referred for comment pursuant to 36 CFR § 800.7(c), and proceed to refer the objection and comment. The BLM shall take the resulting comment into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(1) of the NHPA.

2. Should the ACHP not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, the BLM may assume the ACHP's concurrence in its proposed response to the objection.
3. The BLM shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection. The BLM's responsibility to carry out all actions under this MOA that are not the subjects of the objection will remain unchanged.
4. At any time during implementation of the measures stipulated in this MOA, should an objection pertaining to such implementation be raised by a Tribe, the BLM shall notify the other parties to the MOA in writing of the objection and take the objection into consideration. The BLM shall consult with the objecting party and, if the objecting party so requests, with the other parties to this MOA for no more than fifteen (15) days. Within ten (10) days following closure of this consultation period, the BLM will render a decision regarding the objection and notify all consulting parties hereunder of its decision in writing. In reaching its decision, the BLM will take into account any comments from the consulting parties and the

1 objecting party regarding the objection. The BLM's decision regarding the resolution of the
2 objection will be final.

- 3
- 4 5. The BLM shall provide all parties to this MOA, and the ACHP when ACHP comments have
5 been issued hereunder, and any parties that have objected pursuant to paragraph 4. of section
6 B. of this stipulation, with a copy of its final written decision regarding any objection
7 addressed pursuant to this stipulation.
- 8
- 9 6. The BLM may authorize any action subject to objection under this stipulation to proceed after
10 the objection has been resolved in accordance with the terms of this stipulation.
- 11
- 12 7. Notwithstanding any provision of stipulation II.B., the Project and the Undertaking may
13 proceed without interruption during the resolution of any objections under this MOA.
14 Following resolution of any objection, the BLM shall ensure that measures required by such
15 resolution are carried out.
- 16

17 **C. Amendments.**

18

- 19 1. Any party to this MOA may propose that this MOA be amended, whereupon the parties to
20 this MOA will consult for no more than fifteen (15) days to consider such amendment. The
21 amendment process shall comply with 36 CFR §§ 800.6(c)(1) and 800.6(c)(7). This MOA
22 may be amended only upon the written agreement of the signatory parties. If it is not
23 amended, this MOA may be terminated by either signatory party in accordance with
24 Stipulation II.D., below.
- 25
- 26 2. Attachment 1 (CRMP, including Appendices) to this MOA may be amended through
27 consultation among the parties to this MOA without amending the MOA proper.
- 28

29 **D. Termination.**

30

- 31 1. If this MOA is not amended as provided for in section C.1. of this stipulation, or if either
32 signatory party proposes termination of this MOA for other reasons, the signatory party
33 proposing termination shall, in writing, notify the other parties to this MOA, explain the
34 reasons for proposing termination, and consult with the other parties for at least thirty (30)
35 days to seek alternatives to termination. Such consultation shall not be required if the BLM
36 proposes termination because the Undertaking no longer meets the definition set forth in 36
37 CFR § 800.16(y).
- 38
- 39 2. Should such consultation result in an agreement on an alternative to termination, then the
40 consulting parties hereunder shall proceed in accordance with the terms of that agreement.
- 41
- 42 3. Should such consultation fail, the signatory party proposing termination may terminate this
43 MOA by promptly notifying the other parties to this MOA in writing. Termination hereunder
44 shall render this MOA without further force or effect.

4. If this MOA is terminated hereunder and if the BLM determines that the Undertaking and the Project authorized by the Undertaking will nonetheless proceed, then the BLM shall either consult in accordance with 36 CFR § 800.6 to develop a new MOA or request the comments of the ACHP pursuant to 36 CFR Part 800.

E. Duration of the MOA.

1. Unless terminated pursuant to section D. of this stipulation, or unless it is superseded by an amended MOA, this MOA will be in effect following execution by the signatory parties until the BLM, in consultation with the other parties to this MOA, determines that all of its stipulations have been satisfactorily fulfilled. Upon a determination by the BLM that all of the terms of this MOA have been satisfactorily fulfilled, this MOA will terminate and have no further force or effect. The BLM will promptly provide the other parties to the MOA with written notice of its determination and of the termination of this MOA. Following provision of such notice, this MOA will have no further force or effect.

2. The terms of this MOA shall be satisfactorily fulfilled within ten (10) years following the date of execution by the SHPO. If the BLM determines that this requirement cannot be met, the parties to this MOA will consult to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment, or termination. In the event of termination, the BLM will comply with section D.4 of this stipulation if it determines that the Undertaking and the Project authorized by the Undertaking will proceed notwithstanding termination of this MOA.

3. If the Undertaking has not been implemented within ten (10) years following execution of this MOA by the SHPO, this MOA shall automatically terminate and have no further force or effect. In such event, the BLM shall notify the other parties to this MOA in writing and, if it chooses to continue with the Undertaking and the Project authorized by the Undertaking, shall reinitiate review of the Undertaking and the Project in accordance with 36 CFR Part 800.

F. Effective Date of this MOA. This MOA will take effect on the date that it has been executed by the BLM and the SHPO.

EXECUTION of this MOA by the BLM and the SHPO, its transmittal by the BLM to the ACHP in accordance with 36 CFR § 800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR § 800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that the BLM has afforded the ACHP an opportunity to comment on the Undertaking and the Project and their effects on historic properties, and that the BLM has taken into account the effects of the Undertaking and the Project on historic properties.

LAKE HAVASU FIELD OFFICE

2004 SEP 16 A 11: 22

LAKE HAVASU CITY, AZ

SIGNATORY PARTIES:

BUREAU OF LAND MANAGEMENT,
LAKE HAVASU FIELD OFFICEBy: Patricia Taylor Date: 9-14-04Title: Acting Field Manager

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: William O. Miller Date: 14 SEP 2004Title: State Historic Preservation Officer

CONCURRING PARTY:

PACIFIC GAS & ELECTRIC COMPANY

By: Robert C. Davis Date: SEPT. 14, 2004Title: PRINCIPAL ENGINEER, ENVIRONMENTAL AFFAIRS


UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKE HAVASU FIELD OFFICE

In Reply Refer To:
CAAZCA 43660 (070)

March 3, 2004

ACTION MEMORANDUM

TO: Elaine Zielinski
State Director

FROM: Don Ellsworth 
Field Manager, Lake Havasu Field Office

SUBJECT: Time Critical Removal Action,
Pacific Gas and Electric Topock Compressor Facility

I. PURPOSE

This Action Memorandum documents the basis for authorizing a time critical removal action to address the release of hazardous substances from the Pacific Gas and Electric (PG&E) Compressor Station near Topock, Arizona (hereafter "PG&E facility"). Hazardous substances released from the PG&E facility have migrated onto or under land managed by the Bureau of Land Management ("BLM") on behalf of the Bureau of Reclamation ("BOR"). Specifically, hazardous substances including, without limitation, hexavalent chromium released from the PG&E facility have been detected in groundwater under BLM-managed land. This plume of contaminated groundwater has been detected in groundwater samples collected within 150 feet of the Colorado River and is or may be migrating toward the Colorado River.

This time critical removal action is authorized pursuant to the response action authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. §9604. Pursuant to Executive Order 12580, as amended, and Department of the Interior ("DOI") Departmental Manual, Section 104 response action authority has been delegated to BLM to address the release or threatened release of hazardous substances on or from land under BLM's jurisdiction, custody, or control. The purpose of the proposed time critical removal action is to prevent or abate the release of hexavalent chromium into the Colorado River.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

The PG&E facility comprises approximately 265 acres located 15 miles southeast of Needles, California, south of Interstate 40, in the north end of the Chemehuevi Mountains. The facility is an inholding within the Havasu National Wildlife Refuge, is located within half a mile of BLM-managed land, and is less than one mile from the Colorado River.

PG&E has been the owner and operator of the PG&E facility since 1951 and has owned the property on which the facility is located since 1965. Beginning in 1951 and continuing to approximately 1989, PG&E conducted onsite disposal of significant quantities of wastewater

containing hexavalent chromium from the cooling towers of the compressor station at the facility. According to PG&E's estimates, from 1951 to 1989 PG&E disposed annually at least six million gallons of untreated chromium-contaminated wastewater into Bat Cave Wash, an ephemeral stream that flows north from the facility across Havasu National Wildlife Refuge and BLM-managed land emptying into the Colorado River. From 1970 until approximately 1989, PG&E also disposed of wastewater in evaporation ponds on the Refuge adjacent to BLM-managed property. In addition to these evaporation ponds, PG&E disposed of wastewater and/or other waste containing hazardous substances in a percolation bed and an unlicensed injection well at or near the facility.

B. Other Actions to Date

In 1988, PG&E completed a soil investigation in the Bat Cave Wash area at the request of the California Department of Health Services (now known as the Department of Toxic Substances Control ("DTSC")) and the U.S. Environmental Protection Agency ("EPA"). The soil investigation documented chromium contamination in the environment around the former percolation bed. A 1989 "Comprehensive Ground Water Monitoring Evaluation" prepared by the California Regional Water Quality Control Board ("CRWQCB") identified chromium contamination associated with the injection well.

By letter dated May 29, 1995, PG&E reported the presence of chromium in groundwater samples taken on the east side of Bat Cave Wash near the north boundary of the PG&E facility. In response, on February 26, 1996, DTSC and PG&E executed a Corrective Action Consent Agreement pursuant to State law under which DTSC directed PG&E to perform a "Facility Investigation" as well as any "Interim Measures" determined to be necessary to address immediate or potential threats to human health and/or the environment.

In the course of implementing groundwater monitoring required under the Corrective Action Consent Agreement, PG&E has documented an extensive plume of groundwater contaminated with hexavalent chromium that stretches from the PG&E facility under National Wildlife Refuge and BLM-managed property toward the Colorado River. On February 3, 2004, reported concentrations of hexavalent chromium of 111 parts per billion ("ppb") in groundwater taken from monitoring well MW34-80. This monitoring well is located on BLM-managed property approximately 150 feet from the Colorado River. Based on this finding, DTSC has ordered PG&E to prepare and submit Interim Measures ("IM") Workplan No. 2 "to immediately begin pumping, transport and disposal of groundwater from existing monitoring wells at the MW20 cluster." These monitoring wells are located on BLM-managed property. To facilitate the coordination of BLM and DTSC authorities for responding to groundwater contamination from the PG&E facility, this Action Memorandum authorizes PG&E to perform the activities described in IM Workplan No. 2, as specified herein.

III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT

As documented by recent groundwater sampling results, hexavalent chromium has been detected in significant concentrations in wells within 150 feet of the Colorado River. The Colorado River is an important drinking water source utilized by the Metropolitan Water District of Southern California, which provides drinking water to approximately 18 million people. While investigation to date has not yet confirmed that contaminated groundwater has reached the Colorado River, the proximity of the groundwater plume to the River constitutes an actual or potential threat of contamination of a significant drinking water supply. In addition, the proximity of the groundwater plume to the Colorado River constitutes an actual or potential threat to the environment.

IV. ENDANGERMENT DETERMINATION

Actual, ongoing, or threatened releases of hazardous substances through groundwater may continue to migrate toward the Colorado River and may reach the River if not addressed by implementing the time critical removal action described in Attachment 1 of this Action Memorandum. This time critical removal action is necessary to prevent or abate the release or substantial threat of release of hazardous substances into the Colorado River. Due to the proximity of the groundwater plume to the River, BLM determines, in accordance with Section 300.415(b)(2) of the National Oil and Hazardous Substances Contingency Plan ("National Contingency Plan" or "NCP"), 42 U.S.C. §300.415(b)(2), that a time critical response is necessary.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

As described specifically in Attachment 1, which is incorporated herein, the proposed time critical removal action is to pump, and transport and dispose offsite, groundwater from existing monitoring wells at the MW20 cluster in order to achieve a net reversal of the groundwater gradient away from the Colorado River. Activities on BLM-managed land called for in any transportation plan, site health and safety plan, or other plans identified in Attachment 1 that have not yet been reviewed and approved by BLM are authorized by this Action Memorandum; provided, however, that such plans are subject to BLM review and approval prior to implementation.

In the event such reversal of gradient is not achieved by pumping from the existing wells identified in Attachment 1, additional existing wells may be pumped, or new wells may be sited, installed, tested and pumped, to achieve such reversal. Any such additional wells are authorized by this Action Memorandum; provided, however, that utilization of such wells is subject to BLM review and approval prior to installation or pumping.

Because such actions will be financed by PG&E, BLM has not determined the estimated costs to implement this time critical removal action.

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

In the event response action is delayed or not taken, hazardous substances may be released, or there is a substantial threat of such release, into the Colorado River.

VII. OUTSTANDING POLICY ISSUES

BLM is coordinating this time critical removal action with work required of PG&E pursuant to the Corrective Action Consent Agreement issued by DTSC. This coordination of BLM CERCLA authorities and State RCRA authorities is intended to facilitate and streamline PG&E's performance of work necessary to protect the Colorado River. BLM must ensure, however, that such work is performed in a manner consistent with CERCLA, the National Contingency Plan (42 U.S.C. Part 300), and other applicable Federal requirements. In the event that Federal requirements are not satisfied through this coordination effort, BLM may be required to initiate, or require PG&E to perform, activities independent of State law.

VIII. ENFORCEMENT

BLM and DOI have determined that PG&E is a responsible party pursuant to Section 107 of CERCLA, 42 U.S.C. § 9607. As defined by CERCLA, PG&E is the owner and operator of the PG&E facility from which hexavalent chromium has been released into the environment. Hexavalent chromium is a hazardous substance under CERCLA.

By letter dated February 12, 2004, DOI has notified PG&E of its potential liability under CERCLA and has requested that PG&E enter into an administrative order on consent ("AOC") by which PG&E would agree to reimburse DOI, BLM, and other DOI bureaus for response costs incurred in overseeing PG&E's performance of response action on Federal property. In the event that DOI is unable to reach an agreement with PG&E over the terms of this AOC, DOI may decide to take response action unilaterally, may initiate enforcement action or take any other measures necessary to direct or require PG&E to perform response action, and seek to recover all response costs incurred from PG&E.

IX. RECOMMENDATION

This decision document identifies the current proposed time critical removal action to prevent or abate releases of hexavalent chromium from the PG&E facility from migrating to the Colorado River. BLM has determined that PG&E is capable of performing this removal action in a manner consistent with the NCP, contingent on PG&E's full compliance with the requirements of this Action Memorandum including Attachment 1. Conditions at the site meet the criteria for undertaking the proposed time critical removal action, as specified by Section 300.415 (b)(2) of the NCP, 40 CFR § 300.415(b)(2). We recommend your approval of the proposed time critical removal action.

Carl R. Smith
Approval

3/3/04
Date

Disapproval

Date

Attachment:

Interim Measures Workplan No. 2