CH2M HILL
33 New MontgomeryStreet,
Suite 2000
San Francisco, California
94105

Tel 415.541.7220

CH2MHILL

November 20, 2006

Cahn Nguyen
California Department of Fish and Game
14700 South Broadway, Suite A
Blythe, CA
92225

RE: Fish and Game Code Section 1600 – Notification Package for Well Installation Activities

Dear Mr. Nguyen:

As discussed previously, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has directed Pacific Gas and Electric (PG&E) to install additional groundwater monitoring wells below the Colorado River to facilitate further characterization of groundwater in the vicinity of the PG&E Topock Compressor Station. The enclosed Notification of Lake or Streambed Alteration describes proposed well installation activities on the floodplain of the Colorado River. This notification is submitted for compliance with Section 1600 et seq. of the California Fish and Game Code, and includes a fee of $2,250 based on the estimated project cost.

In addition to the notification form, the proposed project work plan is enclosed which further specifies the well installation activities, as well as several background reports detailing existing biological conditions at the site. The document include:

- *Work Plan for Additional Groundwater Characterization Beneath the Colorado River by Slant Boring in California* (CH2M HILL 2006)
- *Biological Resources Survey Report for the Area of Potential Effect (APE) Topock Compressor Station Expanded Groundwater Extraction and Treatment System Needles, California* (CH2M HILL in 2005)
- *Desert Tortoise Presence/Absence Surveys for the PG&E Topock Compressor Station Expanded Groundwater Extraction and Treatment System* (Garcia and Associated 2006)
- *Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station Expanded Groundwater Extraction and Treatment System* (Garcia and Associates 2006)

You may recall that the well installation activities are scheduled to commence in mid-January 2007 to allow for completion by March 15, the estimated start of the nesting bird season. Given this timeframe, we look forward to working with you to ensure the necessary approvals can be obtained in advance of project construction.

Please feel free to contact me with any questions or information requests.

Sincerely,

Steven H. Smith, AICP
CH2M HILL
33 New Montgomery St, Suite 2000
San Francisco, CA 94105

cc: Brandon Liddell/PG&E
Yvonne Meeks/PG&E
Rob Knutson/PG&E

Enclosures

Date	Vendor Name	Vendor Number	
17-NOV-06	CALIFORNIA DEPARTMEN	002000	Check No. **2014339**

INVOICE NO.	INVOICE DATE	DESCRIPTION	DISCOUNT AMT	NET AMOUNT
CKRQ111506	15-NOV-06	FX S SMITH/SFO LLP	0.00	2,250.00
			0.00	$2,250.00

CH2M HILL, Inc. 9191 S. Jamaica Street Englewood, CO 80112

THE FACE OF THIS CHECK IS PRINTED BLUE - THE BACK CONTAINS A SIMULATED WATERMARK

CH2M HILL, Inc.
9191 S. Jamaica Street
Englewood, CO 80112

Wells Fargo Bank, N.A.
Van Wert, OH

56-382
412

CHECK NO. **2014339**

DATE: 17-NOV-06

CHECK AMOUNT:
********$2,250.00**

VOID OVER: ******$2,250.00

*Two thousand two hundred fifty and 00/100 Dollars*************************

Pay
To The
Order Of

CALIFORNIA DEPARTMENT OF FISH & GAME
14700 S BROADWAY STE A
BLYTHE, CA 92225
United States

⑈002014339⑈ ⑆041203824⑆ 9600064314⑈

FOR DEPARTMENT USE ONLY				
Date Received	*Amount Received*	*Amount Due*	*Date Complete*	*Notification No.*
	$	$		

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Brandon Liddell		
Business/Agency	Pacific Gas and Electric Company (PG&E)		
Street Address	245 Market Street		
City, State, Zip	San Francisco, CA 94105		
Telephone	(415) 973-4893	Fax	(415) 973-9250
Email	BxLg@pge.com		

2. CONTACT PERSON (*Complete only if different from applicant*)

Name	Steven Smith, CH2M HILL		
Street Address	33 New Montgomery Street, Suite 2000		
City, State, Zip	San Francisco, CA 94105		
Telephone	(415) 541-7220	Fax	
Email	steven.smith@ch2m.com		

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name	United States Fish and Wildlife Service - Havasu National Wildlife Refuge (Contact: John Earle, Manager		
Street Address	317 Mesquite Avenue		
City, State, Zip	Needles, CA 92363		
Telephone	(760) 326-3853	Fax	(760) 326-5745
Email	John_Earle@fws.com		

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	Groundwater Characterization Beneath the Colorado River by Slant Boring in California
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years*)

C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (*year*)	Ending (*year*)	Start Date (*month/day*)	End Date (*month/day*)	
2007	2007	01/01	03/31	82.00

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.		
A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* ____
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* ____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* ____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ DFG Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number:* ____
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been received.***

	A. Project	B. Project Cost	C. Project Fee
1	Groundwater Characterization Beneath the Colorado River by Slant Boring CA	$400,000.00	$2,250.00
2			
3			
4			
5			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	$2,250.00

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant: ____ Notification Number: ____ Date: ____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☐ No ☑ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location.

(*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway*)

The site located near the PG&E Topock Compressor Station in San Bernardino County, California, approximately 11 miles southeast of the town of Needles. The proposed slant well site is located immediately south of Interstate 40 on the western shoreline of the Colorado River. Figures 1 and 2 in the attached Work Plan shows the location of the proposed project.

☐ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Lower Colorado River
C. What water body is the river, stream, or lake tributary to?	Colorado River
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	San Bernardino

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Topock	7N	24E	5	

☐ *Continued on additional page(s)*

K. Meridian (*check one*) ☐ Humboldt ☐ Mt. Diablo ☑ San Bernardino

L. Assessor's Parcel Number(s)

650-161-14

☐ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes*)

Latitude/Longitude	*Latitude:* 34.719	*Longitude:* -114.490
	☐ Degrees/Minutes/Seconds ☑ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:* 730019.35 meters	*Northing:* 3844530.00 meters ☐ Zone 10 ☑ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☑ NAD 83 or WGS 84

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☐	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☑	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☐
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐
Open trench	☐	☐	☐
Other *(specify)*: Well Installation via Slant Drilling	☑	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

See Attachment A, Part I

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

Track-mounted rotsonic drilling rig; tracked forklift; support vehicle (ATV). See attached work plan for further specifics.

☐ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☑ Yes ☐ No (*Skip to box 11*)
D. Will the proposed project require work in the wetted portion of the channel?	☐ Yes (*Enclose a plan to divert water around work site*) ☑ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

See Attachment A, Part II

☑ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
Arrow weed and Tamarisk (salt cedar)	Linear feet: ____ Total area: 0.11 acre	Linear feet: ____ Total area: 0.06 acre
	Linear feet: ____ Total area: ____	Linear feet: ____ Total area: ____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
Tamarisk		N/A

☐ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes (*List each species and/or describe the habitat below*) ☐ No ☐ Unknown

See Attachment A, Part III

☑ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

See Attachment A, Part IV

☐ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☑ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☐ Yes (*Enclose the hydrological study*) ☑ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

As described in the enclosed Work Plan, cuttings such as fragments of rock and soil that are removed to create boreholes will be contained in lined roll-off bins at the at the staging areas during drilling and sampling activities. After sampling and characterization, all cuttings bins will be removed from the staging areas for disposal in a permitted off-site disposal facility. Additionally, plastic sheeting will be laid on the ground surface in the staging areas to keep the drilling materials and equipment clean and to minimize impacts to the ground surface from drilling materials and equipment. Water generated during well installation will similarly be temporarily be stored with secondary containment, and characterized for disposal in a permitted facility.

☐ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

See Attachment A, Part V

☑ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

See Attachment A, Part VI

☑ *Continued on additional page(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. Havasu National Wildlife Refuge ☑ Applied ☐ Issued

B. Caltrans: Encroachment Permit ☑ Applied ☐ Issued

C. California State Lands Commission ☑ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

☐ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☑ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☑ Notice of Exemption	☐ Mitigated Negative Declaration	☐ NEPA document (*type*): ______
☐ Initial Study	☐ Environmental Impact Report	☐ CESA document (*type*): ______
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	☑ ESA document (*type*): Biological Evaluation
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)			
C. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes D, E, and F*)	☐ No (*Skip to box 14.G*)	
D. CEQA Lead Agency	Department of Toxic Substances Control (DTSC)		
E. Contact Person	Aaron Yue	F. Telephone Number	(714) 448-4543

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

See Attachment A, Section VII

☑ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☐ Yes (*Enclose proof of payment*) ☑ No (*Briefly explain below the reason a filing fee has not been paid)*

Project has been determined to be exempt from CEQA by the lead agency (DTSC).

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☐ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☑ I request the Department to first contact (*insert name*) Brandon Liddell/PG&E at (*insert telephone number*) (415) 973-4893 to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☐ Yes (Please enclose the information via digital media with the completed notification form)

☑ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

11·20·06
Date

BRANDON LIDDELL | PG&E
Print Name

ATTACHMENT A

I. Project Description

The project involves the installation of groundwater monitoring wells below the Colorado River using a slant drilling method. Two to four slant boreholes will be drilled from the shoreline of the river at angles of approximately 30 to 45 degrees below horizontal land surface. Following the drilling and testing of the boreholes, up to 6 groundwater monitoring wells will be completed in the borings and surface well monuments will be constructed.

The well installation will occur in the vicinity of the Pacific Gas and Electric (PG&E) Topock Compressor Station, located approximately 11 miles southeast of the Needles, California in the County of San Bernardino. The well installation site is located immediately south of Interstate 40 on the western shoreline of the Colorado River. The project site is located within the United States Fish and Wildlife Service's Havasu National Wildlife Refuge.

Access to the project site is provided off of National Trails Highway, which is accessible from the Park Moabi Road exit of Interstate 40. An existing off-road access route between National Trails Highway and the drill site will be cleared as needed to provide adequate vehicle and equipment access. Prior to drilling activities, an area measuring approximately 80 feet by 50 feet will be cleared at the drill site. Removal of native vegetation will be avoided, where possible. Associated materials and equipment will be staged in a clearing adjacent to the access route, approximately 500 feet northwest of the drill site.

Well installation equipment includes a track-mounted rotosonic drilling rig, which will advance a rotating and vibrating drill head or core barrel through the subsurface. The slant borings will extend approximately 150 feet and 250 feet eastward below the Colorado River. Support equipment includes a tracked forklift and support vehicle for equipment and material transfer to the drill site. Water and drill cuttings generated during well installation will be temporarily stored with secondary containment provided, and subsequently characterized for disposal at a permitted facility.

Following installation of the wells, planned site restoration activities will revegetate the drill site and access route with native plantings. The initial one-half year of monitoring the new groundwater wells will occur monthly; subsequent periodic monitoring (quarterly or monthly) is expected. Monitoring activities may require use of an all-terrain vehicle to transport equipment to the new well locations, and involves pumping small amounts of water to obtain groundwater samples. Each monitoring event can be completed within two days.

II. Project Impacts

As described in the Work Plan, clearing of vegetation will be required to allow access for drilling equipment at the proposed drilling site. At the drill site, an area of approximately 50 feet wide by 80 feet long will be cleared. To reach the drilling work area, an existing access route will be cleared as necessary between Park Moabi Road and a point north of the drill site and adjacent to Interstate 40. The existing access route will be extended south for approximately 60 feet to provide access between the existing route and the drill site (i.e., an area about 60 feet long by 12 feet wide). This area is primarily vegetated with arrow root and tamarisk (salt cedar). Removal of native vegetation will be avoided, wherever possible.

Following the well installation activities, the project site will be partially re-vegetated as described below under Section A-VI. The re-vegetated area would measure approximately 45 feet by 50 feet (0.05 acre). It is anticipated that approximately 0.11 acre of vegetation will be cleared for construction and access. Therefore, an area of about 0.06 acre will be permanently impacted.

III. Special status animal or plant species, or habitat that could support such species, known to be present on or near the project site.

The project site is considered potentially suitable habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*). Upland from the project site approximately 500 feet to the west, there is marginally suitable habitat for the Mojave desert tortoise (*Gopherus agassizii*). Protocol surveys for these species conducted in 2005 and 2006 at the project site and nearby vicinity did not indicate any occurrence of these species. These surveys are enclosed along the Notification package.

The project site may be on the 100-year floodplain of the Colorado River (FEMA floodplain mapping data is not available for the project site). The 100-year floodplain of the Colorado River in the project vicinity is designated critical habitat for the bonytail chub (*Gila elegans*). In addition, the razorback sucker (*Xyrauchen texanus*) may occur in the adjacent Colorado River.

IV. Document Sources

CH2M HILL. 2005. *Biological Resources Survey Report for the Area of Potential Effect (APE) Topock Compressor Station Expanded Groundwater Extraction and Treatment System Needles, California.* October.

Garcia and Associates (GANDA). 2006. *Desert Tortoise Presence/Absence Surveys for the PG&E Topock Compressor Station Expanded Groundwater Extraction and Treatment System.* July.

Garcia and Associates (GANDA). 2006. *Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Topock Compressor Station Expanded Groundwater Extraction and Treatment System. September.*

V. Avoidance/Minimization Measures

As noted in the enclosed work plan, the following pre- and post-activity surveys and monitoring will be performed.

1. Prior to vegetation removal, the project boundaries will be clearly marked with lath staking and flagging to minimize habitat impacts by the work crew. A preconstruction survey of the marked site will be performed by a qualified biologist to identify wetlands and any special status species in the area. Wetlands are known to occur nearby and the slant drill site abuts both fringe and adjacent wetlands. The biologist will ensure that boundaries are adjusted, if needed, to avoid these wetlands. Additionally, the biologist will search for active bird nests prior to vegetation removal. However, the drilling is scheduled to occur outside the bird nesting season. Therefore, active nests are not expected within the slant drilling area. The biologist will also photo document and GPS the pre-construction site conditions.

2. During vegetation removal, a biologist will be onsite monitoring activities to ensure work crews remain within the designated boundary and minimize impacts. The predominant plant species at the site that is expected to be removed is non-native tamarisk. However, native screwbean mesquite trees have been observed intermixed with tamarisk in the area. If avoidance or transplantation of native mesquite trees is not possible, then the biologist will document the number of trees removed and the replacement ratio will be 2:1. The biologist will ensure that the lath staking and flagging is correctly positioned to demarcate the slant drill site boundaries once the vegetation has been removed. Upon vegetation removal completion, the biologist will depart the site.

3. The PG&E field contact representative will be responsible for providing site orientation training to the workers and ensuring compliance with all applicable biological measures during slant drilling activities.

4. Once slant drilling and well installation activities are completed, the biologist will return to the site to photo document and GPS the post-construction conditions. The data will be included in a brief report that will be submitted to the DTSC, BLM, and USFWS within 60 days of well installation. The report will document pre- and post-activity conditions. A copy of the report will be provided to CDFG.

VI. Mitigation/Compensation Measures

As noted in the enclosed work plan, after completion of construction activities, the following restoration measures will be undertaken.

1. The slant drill site will be re-vegetated with mesquite trees. The planting scheme will be similar to the MW-43 restoration effort, which focused on ultimate re-closure of the tree canopy. The existing irrigation infrastructure will be extended to the slant drill site.

2. Some of the newly planted mesquite trees along the edge of the existing staging area and access/egress route may be crushed by the drill rig and other support equipment. Those trees that do not survive will be replaced at a 1:1 ratio.

VII. Briefly Describe Larger Project or Plan

PG&E is conducting a Remedial Investigation (RI) and a RCRA Facility Investigation (RFI) to investigate the release of hazardous substances and hazardous wastes at or from the Topock Compressor Station. The RI is being performed under the oversight of the United States Department of Interior (DOI), the United States Bureau of Land Management (BLM), the United States Fish and Wildlife Service (USFWS), and the United States Bureau of Reclamation (BOR) (collectively "the Federal agencies") in accordance with a Consent Agreement entered between the federal agencies and PG&E pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RFI is being performed under the oversight of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) in accordance with corrective action orders entered pursuant to State law.

A Feasibility Study/Corrective Measure Study will follow the RI/RFI Report, culminating in a proposed final remedy. To support the completion of the RI/RFI and facilitate selection of the final remedy, DTSC and the Federal agencies have directed PG&E to implement additional groundwater characterization activities. The proposed project involves the installation of a groundwater well cluster extending below the Colorado River from the western shoreline.

Department of Toxic Substances Control

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

October 30, 2006

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

ADDITIONAL GROUNDWATER CHARACTERIZATION IN CALIFORNIA BY SLANT DRILLING AT PACIFIC GAS AND ELECTRIC COMPANY (PG&E), TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Ms. Meeks,

The Department of Toxic Substances Control (DTSC) has completed the evaluation of the *Work Plan for Additional Groundwater Characterization Beneath the Colorado River by Slant Boring in California* (Work Plan). The Work Plan was submitted to DTSC in accordance with our directive in the September 29, 2006 letter. As a result of the review, DTSC is in general agreement with the proposed work and approves the Work Plan contingent on resolution of recommendations provided in the enclosed memorandum by Mr. Christopher Guerre of DTSC's Geological Services Unit. Furthermore, DTSC understands that the proposed slant drilling location is within the property owned and managed by the United States Department of the Interior and that PG&E shall comply with all permitting requirements identified by the Department of Interior prior to commencement of any proposed activities.

The purpose of the slant drilling investigation is to evaluate the extent of hexavalent chromium in groundwater within the fluvial sediments beneath the Colorado River south of the Interstate Highway 40 Bridge, and to investigate the thickness of the reductive zone immediately beneath the Colorado River at that location. DTSC's current understanding is that any hexavalent chromium originating from PG&E's historic discharge should pass through the proposed, downgradient sampling location. This is based on regional groundwater flow considerations and the nature of the bedrock structure.

Based on existing information and interpretation, DTSC believes the proposed drilling location within California will provide significant information associated with plume delineation. Therefore, DTSC does not plan to conduct additional characterization within California if the sampling results from the proposed wells do not detect

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

TO: Aaron Yue
Project Manager
Geology, Permitting & Corrective Action Branch

FROM: Chris Guerre, CHG
Senior Engineering Geologist
Geological Services Unit

DATE: October 27, 2006

SUBJECT: Workplan for Angled Multilevel Wells Beneath the Colorado River
PG&E Topock Compressor Station, Needles, California
Project No. 22120/540015-48/36-HWMP

DOCUMENT REVIEWED

Work Plan for Additional Groundwater Characterization Beneath the Colorado River by Slant Boring in California, PG&E Topock Compressor Station, Needles, California (Workplan). The Workplan is dated October 19, 2006 and was prepared by CH2M Hill.

BACKGROUND

The Geological Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the above-referenced workplan regarding installation of two angle borings and multilevel monitoring wells beneath the Colorado River from the California shoreline. The Workplan was prepared in response to a September 29, 2006 DTSC letter requesting PG&E prepare a workplan for a slant boring. Well installation is to be completed prior to March 15, 2007, the next migratory bird nesting season.

The Workplan states that the primary objectives of the slant drilling groundwater investigation are to assess chromium concentrations and natural geochemical parameters (e.g., reducing conditions) in the fluvial sediments beneath the Colorado River downgradient of the chromium plume observed in the floodplain. Additionally, permanent multilevel groundwater monitoring points are proposed to monitor water quality and hydraulics downgradient of the floodplain.

The Workplan proposes to install two angle borings (Borings 1 and 2) from one location adjacent to the California shoreline just south of Interstate Highway I-40 on Havasu contingency designs (e.g., Solinst mutlichannel tubing (CMT) system, conventional single well design) be developed to ensure an alternate design will be identified and ready to implement prior to the implementation of field activities. PG&E will need DTSC's concurrence regarding any alternative designs.

3. The GSU has some concern regarding the placement and confirmation of annular seals and filter packs. Due to the angle of the boring it may be difficult to accurately tag the top of annular materials including collapsed borehole sediments. If this problem is encountered in the field, it is recommended that additional filter pack be added around screened zones to prevent sand/bentonite from invading and potentially occluding the screened zone.

4. Depth-specific Isoflow® sampling described in Section 2.4 on page 2-5 of the Workplan indicates that sample collection will occur every 20 feet from 10-foot open boreholes. The GSU understands that a conventional open borehole doesn't exist as part of the Isoflow® sampling technique but it does utilize a temporary well screen that is exposed to the formation by retracting an outer casing.

5. The last paragraph of Section 2.6 on page 2-9 of the Workplan indicates that the new multilevel angle wells will be incorporated into the Topock monitoring program. The GSU requests that after installation, these wells be sampled once each month for six months. An alternate groundwater sampling schedule may be requested by PG&E after the six month period. A more frequent sampling schedule may be necessary based on initial results.

6. The notes on Figure 4 indicate that the 40° slant boring may be drilled if field conditions allow and additional characterization is required. The 40° slant boring should be installed unless DTSC concurs that it is not necessary or impracticable.

7. The GSU requests that PG&E notify the DTSC team at least two weeks prior to the initiation of field activities described in the Workplan.

Peer Reviewed By: Alfredo Zanoria, CHG, CEG

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WORKPLAN FOR ADDITIONAL GROUNDWATER PLUME INVESTIGATION BY SLANT BORING IN CALIFORNIA, PACIFIC GAS AND ELECTRIC COMPANY, TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA (EPA ID NO. CAT080011729)

Dear Ms. Meeks,

The Department of Toxic Substances Control (DTSC) has evaluated the proposed locations for additional groundwater investigation in Arizona and California as described in Figure 1 - map of the "potential drilling locations" provided by CH2M Hill on behalf of Pacific Gas and Electric Company (PG&E) for the site reconnaissance visit of September 21, 2006. The site reconnaissance visit was attended by representatives from DTSC, Arizona Department of Environmental Quality (ADEQ), U.S. Fish and Wildlife Service, Bureau of Land Management, and PG&E. From the site visit, DTSC noted that all parties found the proposed B1/ B2 slant boring transact locations to be more favorable than the A1/A2 transact locations due to terrain limitations for the necessary drill rig. DTSC also agreed with ADEQ that all proposed samples within the Arizona state borders will be collected under the jurisdiction and direction of ADEQ.

DTSC notes that the window of opportunity for the slant boring and well installation at the B1 location is limited due to biological impact restrictions for the migratory bird nesting season, which begins on March 15 and extends through September 30 of each year. DTSC's goal is to have the well at B1 location constructed before March 15, 2007. To that end, DTSC expects PG&E to make a good faith effort in submitting a work plan outlining the steps and schedule needed to accomplish this task, obtaining the necessary permits for such work, including but not limited to a permit from the Havasu National Wildlife Refuge and other governing agencies, as well as any tribal consultations associated with the completion of this well. Based on the projected schedule provided by Mr. Kevin Sullivan via email today, DTSC is requiring PG&E to immediately prepare a workplan for the slant boring and well installation at the B1