

2006 ANNUAL REPORT

ARCHAEOLOGICAL AND HISTORICAL RESOURCES MANAGEMENT ACTIVITIES

for the

Pacific Gas and Electric Company Topock Compressor Station Expanded Groundwater Extraction and Treatment System San Bernardino County, California

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INTRODUCTION

The Cultural Resource Management Plan (CRMP) for the Topock Compressor Station Expanded Groundwater Extraction and Treatment System (GETS) required for the Interim Measures No. 3 (IM 3) project was adopted in September 2004 pursuant to the National Historic Preservation Act (NHPA) Section 106 Memorandum of Agreement for the Project among the California Office of Historic Preservation, the Bureau of Land Management, and Pacific Gas and Electric Company. The CRMP identifies measures for avoiding, minimizing or mitigating the effects of remediation activities on archaeological and historical sites, thereby ensuring that the Bureau of Land Management (BLM) takes into account the effects of the remediation project on such properties as defined by the NHPA. The CRMP includes measures for identifying, evaluating, and managing archaeological and historical sites within the GETS Area of Potential Effects (APE) and describes measures designed to treat the effects on historic properties that may result from activities associated with construction, operation, and maintenance of the remediation project.

The management measures presented in the CRMP are based on the principle that preservation of historic properties in place and avoidance of damage to those properties are the most desirable objectives of management. The CRMP requires a series of routine and periodic actions to ensure that these principles are upheld and both long-term and short-term potential effects are addressed. These include:

- Routine operating procedures to ensure avoidance of ground disturbance at all archaeological and historical sites.
- Archaeological monitoring during construction in areas containing identified sites.
- Periodic site monitoring and condition assessment to identify any progressive degradation of sites, including (1) quarterly visits to each site during the first year of the project to ensure construction activities continue to avoid historic properties; and (2) subsequent annual field visits for a minimum of 4 years to monitor site conditions and disturbances.
- Continuing coordination with the State Historic Preservation Officer (SHPO), the BLM, and interested tribes, as appropriate and in accordance with Section 106 of the National Historic Preservation Act.

As stipulated in Section 1.3 (page 4) of the CRMP and as requested by the BLM in response to comments from the SHPO, this annual report describes actions taken by Pacific Gas and Electric Company (PG&E) during 2006 to meet the CRMP requirements described above. It reports solely on actions by or on behalf of PG&E, and does not describe activities, consultations, or other actions taken by the BLM or other federal or state agencies. Applied EarthWorks, Inc. (Æ) prepared this report on behalf of PG&E. In addition to describing routine and continuing activities, the report also discusses specific actions called for in the CRMP regarding certain individual sites.

SITE AVOIDANCE

To ensure avoidance of sensitive archaeological and historical resources during routing operation of the GETS, PG&E continued to carry out operational procedures designed to reduce the possibility of inadvertent damage to sites. During 2006 a limited number of management and

operating personnel were apprised of site locations to be avoided. Principal among these were the Onsite Project Manager and Assistant Project Manager, who have primary responsibility for the day-to-day operation of the system. These individuals ensured that ongoing operation and maintenance of the system was designed to avoid archaeological and historical sites, and that protective barriers installed at certain sites were inspected regularly and remained in place and in good repair. In addition, PG&E's Project Senior Cultural Resources Specialist visited the project area at least once each month to inspect site protective measures, 'spot-check' sites closest to ongoing project activities, and coordinate as necessary with the Onsite Project Manager and Assistant Project Manager.

To effectively protect and manage cultural resources, PG&E also maintained closure of several roads that provide access to certain archaeological sites and that were closed initially during construction of the IM 3 project. In addition, PG&E maintained closure of the eastern end of Route 66 (initially closed in 2005) and assisted the BLM with the emergency closure of the project area, implemented on 1 August 2006.

QUARTERLY AND ANNUAL SITE MONITORING

The CRMP calls for periodic monitoring and condition assessment of all National Register of Historic Places (NRHP)-listed or -eligible archaeological and historical sites within and immediately adjacent to the GETS APE. Eighteen archaeological and historical sites determined or presumed eligible are located within close proximity to the existing treatment plant, access roads, staging areas, wellheads, and other operational features of the remediation project. These project-related features require on-going vehicular and pedestrian access as part of the continued operation of the facilities and other ongoing remediation-related activities. These 18 sites were selected for quarterly monitoring in 2006:

- CA-SBR-219
- CA-SBR-2910H and related features
- CA-SBR-11697H
- CA-SBR-11700
- CA-SBR-11701
- CA-SBR-11861H
- CA-SBR-11867
- CA-SBR-11872
- CA-SBR-11897
- CA-SBR-11898
- CA-SBR-11899
- CA-SBR-11939
- CASBR-11959
- CA-SBR-11961
- CA-SBR-11962
- CA-SBR-11963
- CA-SBR-11966
- CA-SBR-11970.

The first phase of quarterly monitoring occurred during October 2005 following construction of the IM 3 project. During that first effort, a monitor from Æ described the current condition and integrity of each site, noting any previous impacts (e.g., vehicle tracks). Each resource was photo-documented, and detailed photo records were completed. Exclusion barriers erected around the sites to protect them during normal systems operations were improved or maintained as needed. In cases where easily identifiable photo points (e.g., well heads or other permanent features) were not present, Æ installed short wooden stakes (labeled “PP-1”, “PP-2”, etc.) to permit future photographic orientation and to ensure that photographs taken during subsequent monitoring efforts would be comparable with the photographs taken initially.

During 2006, quarterly monitoring occurred in January, April, July, and October. At these times Æ’s Cultural Resources Monitor revisited each site and compared current site conditions and integrity with conditions described during the previous quarterly monitoring phase to determine whether the site had been affected during the intervening period by natural and/or man-made actions. Photographs of each site taken during the previous monitoring phase(s) were compared and contrasted with the site’s current condition to help identify recent impacts; the monitor made notes describing each site’s current condition.

Each site was photographed again from the same photo points established previously and from the same angle, essentially duplicating the photographs taken previously for future comparison, and detailed photographic records were completed. Additionally, any previously established exclusion barriers and/or photo points were repaired or replaced as needed.

Quarterly monitoring during 2006 did not identify any new impacts or effects at any of the 18 archaeological or historical sites or their associated features. The conditions of the sites did not appear to have changed. In addition, the protective gravel road base placed across the surface of Historic Route 66 (CA-RIV-2910H) appears to have been maintained successfully throughout the period.

As part of the final phase of quarterly monitoring, four archaeological and historical loci deemed eligible for NRHP inclusion were also documented photographically for the purposes of annual monitoring. These four loci are Locus B and Locus C of the Topock Maze (i.e., CA-SBR-219 B and C), CA-SBR-11700, and CA-SBR-11701. The photographs taken of these site areas will be used for comparative purposes during the first annual site visit in 2007.

The photographic documentation of CA-SBR-219 B and C, CA-SBR-11700, and CASBR-11701 occurred in October 2006. The same methods used during the quarterly monitoring efforts were used for the photographs taken for annual monitoring; photographic overviews of each site area and selected features within each site area, as well as photographs of any previous impacts (e.g., dirt road alignments, off-road vehicle tracks) that may have occurred within the site area prior to GETS construction, were taken from photographic points established by Universal Transverse Mercator (UTM) coordinates. Detailed photographic records describing each photo also were completed.

AGENCY CONSULTATION AND COORDINATION

During 2006 PG&E continued its regular meetings and consultations with the BLM, California Department of Toxic Substances Control, California Office of Historic Preservation, interested Native American tribes, and other parties.

SITE RECORDS UPDATES AND NRHP NOMINATIONS

During 2006, Dr. David Earle began research to prepare the NRHP nomination for the PMR-BNSF segment of Route 66. The research covered all of the associated elements that contribute to the site's eligibility. This work will continue and the nomination will be completed in 2007.

2006 MAINTENANCE ACTIVITIES TO PROTECT HISTORIC ROUTE 66

The primary protective strategy was to discourage use of the road by placing removable barriers at the western entrance to the roadway and by designing the Project vehicle traffic pattern to avoid driving on this roadway, except when necessary. Routine protective activities included bi-weekly patrolling of the entire length of the protected portion of historic Route 66 to identify signs of erosion or degradation of the protective cover, and periodic inspections of the depth of protective cover, to ensure that the cover remains adequate.

Maintenance activities during 2006 fell into two categories: (1) ongoing and (2) restorative. The ongoing activities included maintenance of berms and light road grading after storm events. Restorative activities during the first quarter of 2006 were more extensive due to heavier damage resulting from storms in late 2005. PG&E installed erosion-protection berms and drainage conveyances; cleaned debris from existing culverts to help drainage of dry washes; enhanced culvert capacity at two of the dry washes to prevent road washouts; and added roadbase and protective geotextile to better protect the original paved surface of historic Route 66.

IM-3 OPERATIONAL ACTIVITIES

The following accomplishments for 2006 were reported to the Project's Consultative Workgroup by the Department of Toxic Substance Control in January, 2007:

- IM-3 system currently operating at 135 gallons per minute, and removing ~3 lbs of chromium per day.
- Over 69 million gallons of contaminated groundwater was extracted from the plume in 2006.
- Over 1,000 lbs of chromium removed in 2006.
- Over 124.5 million gallons of groundwater and 3,800 lbs of chromium removed between start of IM operations in March 2004 and December 2006.
- Landward gradients well above the DTSC performance specification of 0.001 have been achieved every month since numerical gradient control standards were first applied in May 2005.
- Over 120 samples collected in 2006 within treatment plant (effluent, sludge, process) as required by WDR

- IM-3 operations have exceeded uptime predictions. The system maintained over 96 percent extraction uptime in 2006, greater than the ~89 percent average predicted in the Facility O&M Manual.
- The injection system allows cleaned water to remain in basin and trucking of extracted groundwater was reduced by up to 90 %.
- Over 50 groundwater samples collected at monitoring wells during four sampling events in 2006 to evaluate effects of injection. Monitoring reports submitted quarterly.
- As documented in the Performance Assessment Report (November 2006) demonstrated injection to be a successful method for management of treated water.

OTHER NON-IM3 ACTIVITIES

In 2006 Æ prepared a sixth addendum to the report of archaeological and historical investigations for the Topock Remediation Project. This addendum addressed potential impacts to cultural resources during implementation of a proposed pilot study of in-situ remediation techniques, as described in the *In-Situ Hexavalent Chromium Reduction Pilot Test Work Plan – Upland Plume Treatment*. The upland pilot study covers approximately 0.5 acre on the Havasu National Wildlife Refuge, in an area referred to as the Monitoring Well (MW)-24 bench. In addition to addressing potential impacts of the pilot study, the sixth addendum documented potential impacts to historic properties during testing and maintenance of three nearby monitoring wells and the decommissioning of a fourth well.

While no known archaeological or historical sites would be impacted directly as a result of the work described in the sixth addendum, Locus A of the Topock Maze (CA-SBR-219) is located approximately 400 feet west of the MW-24 bench. The report recommended continued consultation between the BLM and local Native American representatives regarding the project's indirect effects on the Topock Maze.