Topock Environmental Investigation and Cleanup
Project Orientation

TOPOCK
Project Orientation

Revised Date: 01/24/14

Topock Environmental Investigation and Cleanup
Project Orientation

Welcome to the Topock Environmental Investigation and Cleanup project.

This orientation package has been prepared by the Topock Clearinghouse Task Force (CTF), a group of stakeholders comprised of state, regional, and federal agencies; tribal governments; and PG&E representatives. The CTF is dedicated to enhancing stakeholder understanding of technical forums, and fostering timely and effective project management and decisions for the Topock Compressor Station project.

For additional information, including a continuously updated information repository with a comprehensive collection of project-related documents, visit the project website at www.dtsc-topock.com.

TOPOCK
Project Orientation

Table of Contents

Topock Environmental Investigation and Cleanup

Overview

1

Topock Orientation Overview

The following summarizes the investigation and cleanup of the Topock Compressor Station, located south of Needles, California. This overview includes excerpts and figures from existing project documents to provide information essential to those who are unfamiliar with the project. This is a work product of the Clearinghouse Task Force, a group of stakeholders comprised of state, regional, and federal agencies, Native American Tribes, and Pacific Gas and Electric Company (PG&E) representatives.

More information can be found on the official project website, www.dtsc-topock.com, which is created and updated under the direction of the California Department of Toxic Substances Control (DTSC), the lead state agency overseeing the project.

Orientation Overview Table of Contents

1. Overview[1]

View of Topock Compressor Station near Needles, Calif., and the Colorado River

The Topock Compressor Station (Station) is located in eastern San Bernardino County, California. It is located approximately 12 miles southeast of Needles, California, south of Interstate 40. In 1951, the Station began compressing natural gas for transportation through pipelines to PG&E's service area in central and northern California. As natural gas is compressed, its temperature increases and cooling towers are used for cooling.

From 1951 to 1985, PG&E added chromium compounds to the water used in the cooling towers and other equipment to prevent corrosion of the cooling tower equipment. From 1951 through 1964, cooling tower wastewater containing hexavalent chromium was discharged into Bat Cave Wash, a natural ephemeral wash adjacent to the Station. Over time, the hexavalent chromium seeped into the groundwater and created a zone of contamination (plume) that now extends from below the Station towards the Colorado River. Based on results from periodic testing of the river water, the hexavalent chromium plume is not impacting the quality of the river water. Additionally, historical waste handling and disposal practices at and around the Station resulted in the contamination of soils in certain areas. The Station and its surrounding area under investigation will hereafter be referred to as the Site.

In 1996, PG&E signed an agreement with the California Department of Toxic Substances Control (DTSC) to conduct investigations to identify and clean up past environmental contamination. In 2005, PG&E signed a similar agreement with the U.S. Department of the Interior (DOI) as the federal lead agency to protect lands owned by the federal government. Environmental investigations since that time have shown groundwater at the Site contains elevated levels of

[1] *Adapted from DTSC Fact Sheet - PG&E Topock Environmental Investigation Update, January 2012*

chemicals, including total chromium, hexavalent chromium, molybdenum, selenium, and nitrates. In 2013, a Consent Decree between PG&E and DOI was entered into requiring the design, construction and operation of the groundwater remedy selected in the Record of Decision. The remedy will continue until the cleanup goals are achieved. PG&E estimates cleanup will be complete in approximately 30 years.

2. Topock Cleanup Timeline

1950s

1951 – PG&E begins Topock Compressor Station operations.

1951 to 1985 – Hexavalent chromium used at the Station as an anti-corrosion agent in its cooling towers.

1951 to 1968 – Cooling tower wastewater discharged into percolation beds in a dry wash area next to the Station.

1960s

1964 – PG&E begins treating the wastewater to remove hexavalentchromium.

1970s

1970 – PG&E installs an underground injection well to receive treated wastewater.

1971 – PG&E installs a series of lined evaporation ponds to receive treated wastewater.

1971 to 1974 – PG&E alternates disposal of the treated wastewater between the injection well and the lined ponds.

1974 – PG&E begins disposal of all wastewater exclusively in the lined ponds.

1980s

1985 – PG&E replaces the chromium-based anti-corrosion additive with a phosphate-based solution.

1987 – Corrective action at the Station begins with a RCRA Facility Assessment (RFA) conducted by the U.S. Environmental Protection Agency (EPA).

1990s

1996 – PG&E signs agreement with DTSC to identify and clean up past environmental contamination.

2000s

2000 – DTSC establishes Consultative Workgroup (CWG), comprised of stakeholder agencies, to provide consultation and recommendations to DTSC in its oversight of the project.

2004 – PG&E begins Interim Measures No. 2 (IM2) to extract and treat groundwater.

2005 – PG&E enters into a Voluntary Consent Agreement with DOI to conduct investigations and cleanup actions related to Site contamination affecting federal land. Larger capacity extraction and treatment facilities, known as Interim Measures No. 3 (IM3), began operating and replaced IM2.

2005 to 2009 – Data collected during environmental investigations summarized in Final RCRA Facility Investigation/Remedial Investigation (RFI/RI) Report.

2008 – Clearinghouse Task Force (CTF) established to help improve communications and enhance stakeholder understanding of technical and regulatory information related to the cleanup. Topock Leadership Partnership (TLP) established to enable senior officials to provide input on the direction of actions necessary to complete the cleanup.

2010s

2010 – PG&E performs a Time Critical Removal Action (in Area of Concern 4) to remove hazardous substances that posed a threat of release onto the Havasu National Wildlife Refuge.

2010 to Present – DOI's Record of Decision and DTSC's Notice of Remedy Selection were completed in January 2011. 60 Percent (Intermediate) Remedy Design currently under review by DTSC, DOI. RFI/RI soil investigation work plan submitted, DTSC evaluating potential environmental impacts associated with the proposed soil sampling activities.

2013 - A Consent Decree between PG&E and DOI was entered into requiring the design, construction and operation of the groundwater remedy.

3. Project Site[2]

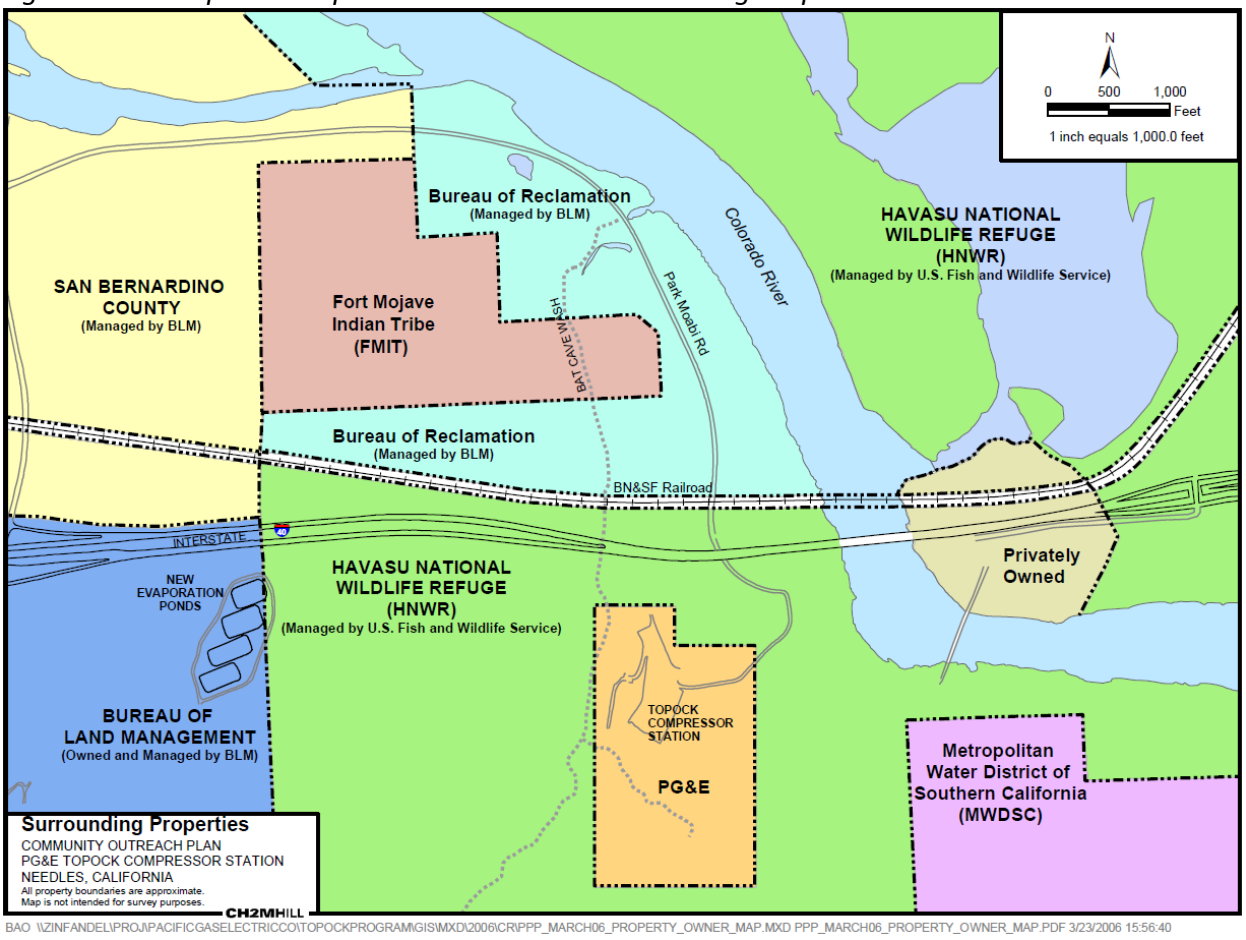
Site Location

The Topock Project Site (Site) is located in eastern San Bernardino County, about 12 miles southeast of the city of Needles, California, south of Interstate 40, and one-half mile west of the Colorado River. The Site has cultural and spiritual significance to native peoples and is part of their traditional lands.

Figure 1: Project Area

[2] *Adapted from DTSC Community Outreach Plan, February 2007*

Figure 2: The Topock Compressor Station and Surrounding Properties[3]



[3] *Adapted from DTSC Community Outreach Plan, January 2013*

Tribal Perspectives

Nine federally recognized Native American tribes - the Chemehuevi Indian Tribe, Cocopah Tribe of Arizona, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Havasupai Indian Tribe, Hualapai Indian Tribe, Quechan Tribe of the Fort Yuma Indian Reservation, Twenty-Nine Palms Band of Mission Indians, and Yavapai-Prescott Tribe (hereinafter "the Tribes") - have ties to the Topock area. Of those, the Chemehuevi Indian Tribe, Cocopah Tribe of Arizona, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and the Hualapai Indian Tribe are actively engaged in the environmental review of the Topock project.

Fort Mojave Indian Tribe

Fort Mojave Cultural Affiliation to Topock – The Fort Mojave has been part of this area since time immemorial: We are the "Ahamakav," the people of the river. We are a living culture and caretaker of this land given by the Creator, Matavilya. For many generations these oral traditions were handed down and passed on to the leadership of the different clans that make up the Ahamakav. During the early years before the European contact, we were an integral part of this region and our territory extended from north of Las Vegas to the South (Phoenix area), and east into Kingman, and as far west as Santa Barbara.

This was our territory and traditional homeland; today our reservation is now broken up into separate patches of land located in California, Arizona and Nevada. We have many areas of cultural and spiritual connection all up and down this valley. Much of the land is now owned or managed by federal agencies, state and individual landowners. Many historic and prehistoric places exist within the area of potential effects and the final remedy cleanup.

Our beliefs define who we are, and how we continue to exist as a people, our affiliation with the land, air, animals and plants, and most importantly the water known to many as the mighty Colorado River is the lifeline to millions who depend on this water to exist. In addition to the lands, the protection of the River is the number one concern to our tribe, as that is our namesake and what we are made from. The Tribe has strong language, clan, oral history, archaeological, and geographical ties to the Topock area. Such ties also include being the closest Indian Reservation to the project site. To the Mojave/Mohave we have a beginning at Avi Kwa Ame "Spirit Mountain" and we have an end to life, this takes place at Topock, this significant area is the entryway to the spirit world and is considered a "Holy" place. Although many significant things occurred to the land and irreversible changes occurred over time, the Sacred area at Topock remains an integral part of the Mojave/Mohave religious and spiritual beliefs and continued practice of the Mojave/Mohave people today.

Colorado River Indian Tribes

The Colorado River Indian Tribes (CRIT) includes four distinct Tribes - the Mohave, Chemehuevi, Hopi, and Navajo. There are currently about 4,000 enrolled CRIT members. The Colorado River Indian Reservation (CRIR) was established in 1865 for the "Indians of the Colorado River and its tributaries," by act of the United States Congress; its boundaries were refined over the next several years through a series of Executive Orders.

The CRIR was originally populated by people of the Mohave and Chemehuevi tribes, whose origins trace to the area along the Colorado River near the Topock Site "since time immemorial." Those two populations were later joined by people from the Hopi and Navajo nations. The four Tribal groups now function as a single, unified political and economic unit, while maintaining and interweaving their distinct cultural identities. The Reservation encompasses over 300,000 acres, with land on both the Arizona and California sides of the Colorado River.

Agriculture is the primary economic activity, with nearly 90,000 acres in production annually. The Tribes, individually and as a whole, respect and hold the Colorado River sacred. It has provided area Tribes with the very essence of life for as long as they have existed. CRIT participates in the Topock Remediation Project in order to offer guidance in the respectful treatment of cultural resources at the Project site, and to help ensure the Colorado River remains healthy so that it may continue to provide for future generations – "both Tribal and non-Tribal."

Hualapai

Topock is a very important sacred landscape for Hualapai due to the Hualapai and other Yuman peoples cultural and spiritual connection with Topock, Spirit Mountain, Boundary Cone and the Needles. Several Hualapai Elders who were asked to discuss Topock and Needles stated that "[she] doesn't remember too much of what I learned while I was young, but there is a common history that all River Tribes shared at one time." While another Elder said that "years ago all the River Tribes use to gather and meet at different places along the River. This is probably one of those places because the roads now follow some of the old trails. Today we still try to keep up those kinds of things with the other Tribes."

According to Hualapai Elders, prior to European contact, Hualapai occupied lands in the area of Topock (The Needles *kwiđ-kwiđ*) and Boundary Cone, or *Wi Veskwiya* at the base of the Black Mountains. *Wi kwiđ-kwiđ* is the south-western most boundary. Today all of these areas are tied to Hualapai's place of creation, *Wikame.* When the world was covered in flood waters, all the Yuman people were created on Wikame. In the Hualapai's Creation Story, depicted in the petroglyphs at Wikahme, which is located 20 miles north of the point where Arizona, Nevada, and California meet, (and visible from Topock Compressor Station, as are the Needles) the Hualapai originated from 'Wikahme', also known as Spirit Mountain and Newberry Mountain.

Chemehuevi

The Chemehuevi Indian Tribe is a branch of the Southern Paiute and has been a persistent occupant of the Mojave Desert. Known to themselves as Nuwu (The People), they have been nomadic residents of the Mojave Desert's mountains and canyons and the Colorado River shoreline for thousands of years. In 1853, the people lost their traditional lands when the federal government declared them public domain. Hostilities with the neighboring Mojave scattered the people now numbering no more than a few hundred people. By 1885 the

Chemehuevi had reunited in the Chemehuevi Valley. Legend depicts the first to return as roadrunners racing down the valley to a forest of mesquite, their pods bursting with sweet beans.

Federal authorities established the Chemehuevi Valley Reservation in 1907. This protected some 36,000 acres of Chemehuevi homeland. But, the Tribal members were soon relocated to the Parker area, and their status as a tribe was taken away. With 1929 came the formation of the Metropolitan Water District and, in 1935, Congress authorized the acquisition of as much of the reservation as necessary for the Parker Dam Project. In 1940, the flood gates closed and nearly 8,000 acres of traditional Nuwuvi lands drowned.

From the early 1940s, a persistent desire for recognition and self-determination fueled the struggle to achieve federal recognition. Thirty years later, the Nuwu were formally reinstated as the Chemehuevi Tribe on June 5, 1970.

Cocopah Indian Tribe

The Cocopah Indian Tribe, known as the River People, have lived along the lower Colorado River and delta for centuries, maintaining their traditional and cultural beliefs throughout many political and environmental changes. Descended from the greater Yuman-speaking people who occupied lands along the Colorado River, the Cocopah had no written language; however, historical records have been passed on orally and by outside visitors.

Established in 1917, the Cocopah Reservation comprises approximately 6,500 acres. Currently there are approximately 1,000 tribal members who live and work on or near the Reservation. In 1964, the Tribe founded its first Constitution and established a Tribal Council.

Environmental Setting

From desert bighorn sheep to the endangered southwestern willow flycatcher, birds and other animals at the Havasu National Wildlife Refuge (HNWR) rely on the life-giving waters of the lower Colorado River. Established in 1941 to conserve, protect, and enhance fish, wildlife, and plants and their habitats, the HNWR protects 30 river miles—300 miles of shoreline—from Needles, California, to Lake Havasu City, Arizona. The Topock Site is located adjacent to and partially on the HNWR which is managed by U.S Fish and Wildlife Service (USFWS).

The terrestrial habitats in the vicinity of the Topock Site are typical of Mojave Desert uplands, consisting of creosote bush scrub (generally west of National Trails Highway) and salt cedar (generally between National Trails Highway and the Colorado River and at the mouth of Bat Cave Wash). These plant communities support a variety of common wildlife species and have provided habitat for several species that are currently designated as threatened or endangered by state and federal endangered species acts. The Topock Marsh is within the HNWR and provides important aquatic marsh and riparian habitat in the local vicinity.

There are five types of plant communities in the vicinity of the project area, with the boundary between these communities characterized by a transitional zone in which representative species from each community are found. The plant communities at the site consist of Mojave creosote bush scrub, Mojave wash scrub, desert riparian, tamarisk thicket, and freshwater marsh.

The Havasu National Wildlife Refuge forms a critical haven for wildlife in an increasingly populated part of the country. Federally listed species that occur on the HNWR include the southwestern willow flycatcher (*Empidonax traillii extimus*), the desert tortoise (Mohave population; *Gopherus agassizii)*, the Yuma clapper rail (*Rallus longirostris yumanensis*), the Colorado pikeminnow (*Ptychocheilus lucius*), the razorback sucker (*Xyrauchen texanus*), and the bonytail chub (*Gila elegans*). Some of the state-listed species that occur on the HNWR include the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), the Gila woodpecker (*Melanerpes uropygialis*), the elf owl (*Micrathene whitneyi*), and Arizona Bell's vireo (*Vireo bellii arizonae*). The HNWR is also charged with protecting wildlife and wildlife habitat for species other than threatened and endangered species. The habitat in and around the Topock Site supports bighorn sheep, bobcats, chuckwallas, red-tailed hawks and other mammals, reptiles, and birds. Mountain lion activity has been reported in this area as well.

Recreational activities at the HNWR include hunting, fishing, wildlife observation, photography, interpretation, and environmental education as well as boating, canoeing, and kayaking. All areas within the HNWR and outside the Station are currently accessible for these activities and are expected to remain accessible in the future.

Local Communities

Since 1951, PG&E has been the sole owner and operator of the Station. The Station is surrounded by federally owned lands of the U.S. Bureau of Reclamation (BOR, managed by or owned by BLM), HNWR (managed by USFWS), and lands owned by the Metropolitan Water District of Southern California and the Fort Mojave Indian Tribe. The nearest non-Tribal communities are two mobile home parks; Topock, Arizona, located about one-half mile east-northeast of the Station; and Park Moabi California, located about one mile northwest of the Station. Park Moabi is BOR land managed by BLM and leased by San Bernardino County. Sub-leases include the Pirates Cove Resort and Restaurant. The Fort Mojave Indian Reservation and the Chemehuevi Indian Reservation occur within 10 miles of the Station, while the Colorado River Indian Reservation lies approximately 35 miles to the south.

The nearest residential community is Topock, Arizona, approximately one-half mile east across the Colorado River. The community of Golden Shores, Arizona, is approximately four miles to the northeast of the Site across the river. The City of Needles, California, is approximately 12 miles northwest along I-40. The closest hospital is located in Needles and the closest schools are located across the river in Golden Shores. San Bernardino County's Moabi Regional Park sits one mile northwest of the Station on a side channel of the Colorado River. Downstream along the Colorado River are the cities of Lake Havasu, Arizona , Parker, Arizona , Blythe,

California, and Yuma, Arizona (18, 40, 99, and 137 miles away, respectively). The major metropolitan areas located in proximity to the site are Las Vegas, Nevada (131 miles from the site), Phoenix, Arizona (238 miles from the site), and Los Angeles, California . (275 miles from the site). [4]

[4] *Adapted from DTSC Project Website (www.dtsc-topock.com), Communities Page*

4. Cleanup Overview

History of Wastewater Management at the Compressor Station

Between 1951 and 1985, PG&E used a chromium-based additive in the cooling towers of the Station. Between 1951 and 1964, the untreated cooling tower water, which contained hexavalent chromium (Cr (VI)) and other heavy metals, was discharged into Bat Cave Wash, a normally dry streambed that flows north into the Colorado River about one half mile from the Station.

By 1964, PG&E had begun wastewater treatment to convert the Cr (VI) to trivalent chromium (Cr (III)), and continued to discharge the treated water to Bat Cave Wash through the rest of the decade. There are no records available on the volume of wastewater discharged from the Station to Bat Cave Wash during this time period, but PG&E estimates that the volume of wastewater generated by the facility from 1951 to 1969 was approximately 6 million gallons per year, totaling about 108 million gallons.

By 1970, PG&E improved the chromium treatment process and discharged the treated water into an injection well located near Bat Cave Wash. Between May 1970 and December 1973, PG&E estimates that approximately 29.4 million gallons of treated wastewater with an average Cr (VI) concentration of less than 1 ppm were injected into the injection well near Bat Cave Wash. From 1973 to 1989, treated wastewater was exclusively discharged to four single-lined evaporation ponds located on the HNWR. In 1989, those ponds were closed, and four new Class II evaporation ponds were placed into operation on BLM-managed lands for the evaporation of the phosphate-based anti-scaling cooling tower effluent.

Project Objectives[5]

The primary objectives of the agencies are to investigate and remediate contamination of the soil and groundwater caused by historical hazardous substances management practices by PG&E, and prevent further releases of any harmful materials within the cultural and natural environment near the Colorado River, specifically within the Area of Potential Effect (APE).

Environmental Cleanup Regulatory Oversight [6]

Two federal laws govern the investigation and cleanup of contaminated sites. The Resource Conservation and Recovery Act (RCRA) regulates the use, treatment, and storage and disposal of hazardous waste. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, was created to provide federal authority for the direct response to releases or threatened releases of hazardous substances that may endanger public health or the environment. The two laws include similar landmark decision documents,

[5] *From DOI CERCLA Document*

[6] *From DTSC Project Website (*www.dtsc-topock.com*), Regulatory Authority for Cleanup*

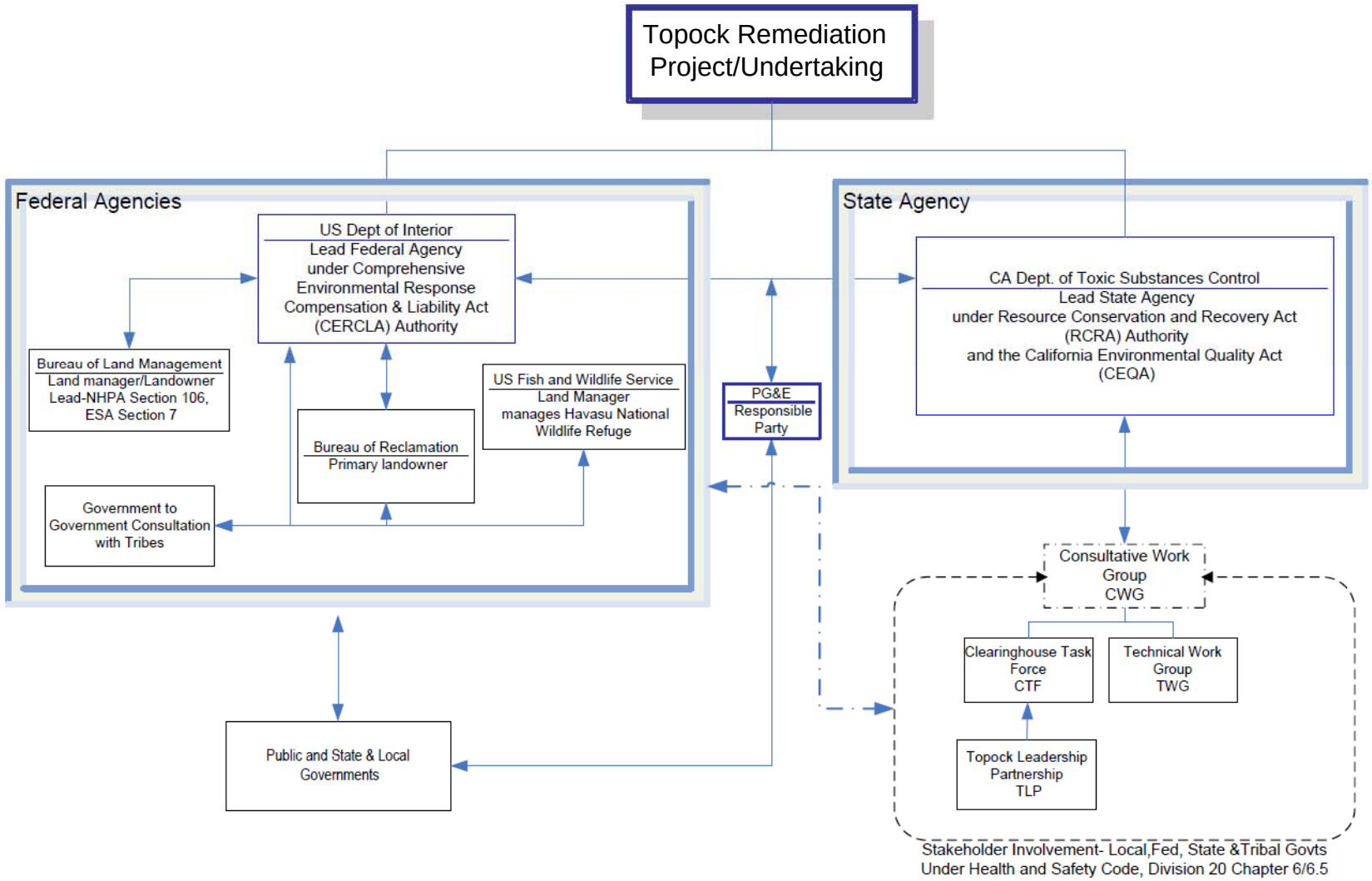
community involvement steps, and parallel, or equivalent, steps that govern the cleanup processes at sites where hazardous materials have been released. RCRA gives authorized states, including California, the ability to enforce environmental cleanup, or corrective actions.

The California Environmental Protection Agency (Cal/EPA) has been delegated authority by the U.S. EPA to implement the RCRA program in California. Cal/EPA's DTSC is the lead regulatory agency for environmental investigation and cleanup activities associated with PG&E's Topock Compressor Station. As the lead California regulatory agency, DTSC directs all site investigation and cleanup activities in accordance with RCRA and the California Environmental Quality Act (CEQA). PG&E entered into an agreement with DTSC in 1996 to undertake investigation and cleanup actions at the Site.

Federal agencies with jurisdiction over the surrounding land also have jurisdiction over the remediation process pursuant to CERCLA. In July 2005, PG&E and these federal agencies, which include the DOI, BLM, USFWS, and BOR, entered into a Consent Agreement to facilitate federal oversight of remediation activities. In accordance with this agreement, environmental investigation and cleanup activities at the Station, which are being conducted under the RCRA Corrective Action Process, are also being conducted to meet the requirements set forth by CERCLA. In 2013, a Consent Decree between PG&E and the DOI was entered into requiring the design, construction and operation of the groundwater remedy selected in the DOI Record of Decision.

Regulatory Working Structure

Government Agencies and Authorities



Today, PG&E's disposal of wastewater from ongoing Station operations is regulated by the Regional Water Quality Control Board—Colorado River Basin (RWQCB), a department under Cal/EPA.

Applicable or Relevant and Appropriate Requirements (ARARs) are the federal and state cleanup standards, standards of control, and other requirements that have been determined to be legally applicable to addressing hazardous substances at a site. ARAR are specified in the DOI Record of Decision and DOI, in coordination with DTSC, ensure compliance with ARARs.

Because of the importance of the area to the certain Native American tribes with ancestral ties to the region, and the presence of cultural resources of religious and cultural significance, as well as other sensitive cultural resources, several cultural resource protection statutes, regulations, and Executives Orders have been identified as ARARs for the Topock Site. As described in the Corrective Measures Study/Feasibility Study (CMS/FS), none of the alternatives under consideration were eliminated from further consideration based on its failure to satisfy cultural resource ARARs. In order to ensure that the remedy selected attains the substantive requirements established by these ARARs, however, as a remedy is selected, designed, and implemented, the federal agencies will continue to engage in consultation with Tribes, State Historic Preservation Officers, and others to identify potential effects on cultural resources and to seek ways to avoid, minimize, or mitigate any adverse effects.[7]

Assisting DTSC and PG&E with the planning and review of interim remedial measures are the members of the Topock Consultative Work Group (CWG), constituted under California's Site Designation Process, and consisting of representatives of DTSC, RWQCB, Metropolitan Water District of Southern California, Native American Tribal Governments, the various federal agencies who own or manage adjacent property, and other project stakeholders.[8]

Summary of Groundwater Remedy

The final remedy selected by DTSC and DOI is referred to as the "In-situ Treatment with Fresh Water Flushing" for treatment of hexavalent chromium in the groundwater. Chromium is an abundant element found naturally in the earth's crust, but hexavalent chromium can be toxic. Trivalent chromium, another form of chromium, is substantially less toxic. In fact, trivalent chromium is used as an essential nutrient and is added to vitamins. Fortunately, through treatment, the hexavalent chromium in groundwater can be changed to the trivalent form. Since the non-toxic trivalent chromium is generally not soluble in water, once treated, it comes out of the water and becomes part of the soil.

The remedy involves pushing the hexavalent chromium groundwater plume with uncontaminated water through a treatment area made up of injection and extraction wells

[7] *Adapted from DTSC Project Website (*www.dtsc-topock.com*), Regulatory Authority for Cleanup*
[8] *Adapted from Groundwater Proposed Plan, U.S. Department of the Interior, June 4, 2010*

(known as an in-situ reactive zone or IRZ). The IRZ treatment area biochemically converts the hexavalent chromium contaminated groundwater. This is achieved by injecting nutrients into the contaminated groundwater to stimulate growth of harmless, but helpful, naturally occurring bacteria. Bacteria then change the chemistry of the groundwater, causing the hexavalent chromium (Cr VI) to convert to trivalent chromium (Cr III). After the successful removal of the chromium from groundwater, the treatment will stop and the bacteria level and the geo-chemical conditions in the groundwater will return to pretreatment conditions. The Cr III is stable and does not revert back to Cr VI or to a dissolved state and will continue to be part of the soil.

The injection wells along the IRZ will inject nutrients into the contaminated groundwater and the extraction wells will take water out for carbon amendment prior to reinjection. Extraction wells installed near the Colorado River will extract the groundwater and send it to the west of the plume to recirculate the water through the IRZ. Also, extraction wells will be installed in the southeast edge of the plume to extract contamination that is trapped within the bedrock in the East Ravine area. The extracted contaminated water will be supplemented with nutrients and recirculated to one of the injection wells at the western plume edge to push groundwater movement to the treatment area.

Remedy Location and Design

The groundwater remedy consists of five main elements:

1) An IRZ with a line of wells along the length of National Trails Highway where a carbon source such as ethanol will be added to stimulate the growth of helpful bacteria
2) Extraction wells near the Colorado River that will circulate groundwater to the western edge of the plume where additional nutrients will be added
3) Freshwater injection wells to the west and outside of the plume to accelerate groundwater flow towards the IRZ
4) Restrictions on groundwater use
5) Continued monitoring of the treatment process and the groundwater plume

Supporting infrastructure for the remedy includes roads, pipelines, and utility connections needed to connect the remediation system and provide access to the wells and related remediation facilities. After evaluation of several alternatives, PG&E has decided to use a well in Arizona as the freshwater source for the remedy.

Remedy implementation will occur in multiple phases:

- Construction of new facilities (estimated 3 years)
- Operation and maintenance of the remediation system (estimated 30 years)
- Continued monitoring after treatment is complete (estimated 10 to 20 years)
- Decommissioning of facilities following successful remediation (estimated 1 year)

Additional information on the remedy and PG&E's design documents and can be found on the website at www.dtsc-topock.com.

Summary of Groundwater Remedy Features [9]

Remedy Feature	Design Parameters/Quantity
Remediation wells	A total of 48 remediation wells (plus 37 future provisional): • **National Trails Highway In Situ Reactive Zone (IRZ)** – 24 IRZ injection wells (plus 30 future provisional) 4 IRZ extraction wells (plus 1 future provisional) • **Inner Recirculation Loop** – 5 Riverbank Extraction (RB) wells – 4 Inner Recirculation Loop (IRL) injection wells (plus 3 future provisional) • **Topock Compressor Station Recirculation Loop** – 5 East Ravine extraction wells (plus 1 future provisional) – 2 Transwestern (TW) Bench extraction wells (plus 2 future provisional) – 2 TCS injection wells • **Freshwater Injection** – 2 Freshwater (FW) injection wells
Monitoring wells	• 19 new monitoring well locations • Reuse existing monitoring wells
Carbon amendment and carbon storage facilities	• One 3,000-gallon aboveground carbon storage tank and carbon amendment facility at the Transwestern (TW) Bench • One 15,000-gallon aboveground carbon storage tank and carbon amendment facility at the MW-20 Bench
Freshwater source/ supply well/pre-injection treatment/ storage	• Freshwater supply will be from the existing well HNWR-1, located on the Refuge in Arizona (plus one contingent well located north of HNWR-1, and associated contingent pipeline). If needed, freshwater can be supplemented from the existing supply wells to TCS, namely, Topock-2/3 wells. • One Fresh Water Pre-Injection Treatment System (FWPTS)[1] and associated tanks/chemical storage located at the Compressor Station • Shared use of existing Compressor Station freshwater storage tanks
Piping corridor (water pipes, electrical conduits, fibers, etc.)	• Approximately 105,000 feet (ft) of water/liquid/utility pipes, and approximately 70,000 ft of electrical conduits and cables. Over 85% of conveyance pipes/conduits will be belowground. • Approximately 2,200 feet of double-walled pipe.

[9] *Adapted from Groundwater Remedy Basis of Design Report/Intermediate (60%) Design*

Remedy Feature	Design Parameters/Quantity
Supporting facilities	• The primary power supply source for remedy facilities in California will be power generated by the TCS. Secondary power supply will be power generated from small photovoltaic solar panels at various locations such as at the Central Maintenance Facility at the TW Bench and at select remote well locations. Power will be transmitted at 480 VAC to 12K VAC along the pipeline corridor, six load centers are planned with a transformer/distribution equipment at each one (plus one future provisional load center to serve the future provisional well IRL-7 if this well is needed to be installed/operated). • For the freshwater supply well (HNWR-1) in Arizona, the power supply source will be power provided by Mohave Electric Cooperative. • One Remedy-produced Water Conditioning System[2] and associated tanks located at the Compressor Station • One central maintenance building (approx. 10,000 sq.ft.) and one storage building (approx. 900 sq.ft.) at the TW Bench. Shared use of existing TW Bench with Transwestern. • A Supervisory Control and Data Acquisition (SCADA) system located at the central maintenance building at the TW Bench.
Access pathways and roadways	• Reuse all existing access pathways and roadways. • Two new graded access roads will be needed in the Upland area to allow for installation and maintenance of wells IRL-2 and IRL-4. • To allow for shared use of the TW Bench by the Topock remediation project and Transwestern, one new access road east of the TW bench will be needed for access to Transwestern's gas transmission equipment. • Total new access roadways is 700 ft.
Other ancillary facilities	• Two aboveground pipe bridges for aerial crossing of Bat Cave Wash • Small photovoltaic solar panels at various locations such as at the Central Maintenance Facility at the TW Bench and at select remote well locations. Small communication radios at remote monitoring well locations to allow for remote data collection. • Security equipment (e.g., gate, security cameras) for remote facilities

Soils Investigation

The results of the RCRA RFI/RI are used to define potential contaminants at the Site and to determine the cleanup objectives. The CMS/FS identifies the technologies that may be effective for remediating past releases and develops different combinations of those technologies into overall remedial alternatives for all or part of the Site. Those alternatives are then evaluated based on state and federal selection criteria and used to identify a recommended cleanup approach for the Site, if necessary.[10]

PG&E prepared a Soil Investigation work plan, which is under DTSC and DOI review. The work plan will guide the field work in gathering data needed to assess impacts to the land that may have resulted from PG&E's historical operations. The work plan will investigate:

- Fifteen areas outside the Station which may have had historical activities
- Twenty-seven areas inside the Station
- Perimeter soil adjacent to the Station

[10] *Adapted from RCRA Facility Investigation/Remedial Investigation Report, CH2M Hill, August 2007*

- Onsite storm drains and their offsite outfalls

All the soil investigation data will be presented in the soil RFI/RI Report. Data collected from investigations will be used to assess the need for cleanup. [11]

Interim Measures

Interim Measures (IMs) are actions taken to stabilize the site condition or protect public health and the environment while long-term solutions are being developed and evaluated. Three IMs have been implemented at Topock. The last IM (IM No. 3) involves groundwater removal and treatment, which began in March 2004 when DTSC determined that actions were needed to protect the Colorado River from an area of impacted groundwater known as the "plume."

Under IM No. 3, groundwater that contains Cr (VI) is extracted and piped to a treatment facility, which removes the Cr (VI) and re-injects the treated groundwater back into the subsurface. The treated groundwater meets standards set by DTSC and the Water Board. IM work plans and associated documents are available in the Information Repositories and the project website at www.dtsc-topock.com.

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 555,654,954 gallons of water and removed 5,990 pounds of total chromium through June 30, 2012.

Similar to interim measures, the DOI directed and approved a time critical removal action at the Station in December 2009 due to high level of dioxin contamination discovered at Area of Concern 4. The time critical removal action was completed in October 2010.

[11] *Adapted from DTSC Fact Sheet - PG&E Topock Environmental Investigation Update, January 2012*

5. Stakeholder/Community Involvement

DTSC and DOI meet regularly with stakeholders and have conducted extensive community outreach regarding cleanup activities at the Topock Compressor Station and the Topock Site. These activities include hosting briefings and Site tours for elected officials and federal, state, county, and city agency staff. Fact Sheets have been and continue to be produced periodically and project documents are available in Information Repositories (see below) and on the website at www.dtsc-topock.com, which are updated regularly. To download documents from the website, please visit the Document Library page.

Fact sheets are distributed to elected officials; agency staff; and to the residents of local communities including Golden Shores, Topock, and Lake Havasu City, Arizona; and to ten Native American Tribal Governments: the Fort Mojave, Chemehuevi, Colorado River, Fort-Quechan, Cocopah, Havasupai, Hualapai, Torres-Martinez Desert Cahuilla, Yavapai-Prescott Indian Tribes, and the Twenty-Nine Palms Band of Mission Indians.[12]

Federal Relationship with Tribal Governments

The federal government has a unique relationship with Native American Tribal Governments, stemming from a decision long ago to recognize Tribal Governments as representing Sovereign nations. This Sovereign-to-Sovereign recognition is based on principles contained in the U.S. Constitution, Treaties, Statutes, Executive Orders, and federal regulatory policies. The relationship can be challenging, as it imposes on federal agencies an obligation to engage in government-to-government consultation with Native American Tribes whenever an undertaking on federal lands impacts, or may impact, Tribal interests. Federal agencies meet that obligation through timely, meaningful, good-faith consultation with Native American Tribes. The Topock remediation project is such an undertaking, and consultation between Tribal Governments and the numerous federal departments and agencies involved in the project is ongoing.

National Historic Preservation Act

Of particular concern at the Site are issues relating to the preservation and treatment of cultural and historic properties found within the project APE, which may suffer harm due to the remediation activities undertaken there. The BLM has been delegated the authority to represent the federal agencies for purposes of consulting with the Tribes pursuant to Section 106 of the National Historic Preservation Act (NHPA), and other federal laws and Executive Orders, concerning potential adverse effects on cultural and historic properties that may result from the undertaking.

[12] *From DTSC Project Website (www.dtsc-topock.com), Home Page*

The NHPA Section 106 process seeks to address historic preservation concerns while meeting the needs of federal undertakings through consultation among the agencies and other parties, including Tribes. The goal of the consultation is to identify cultural and historic properties potentially affected by the undertaking, assess the undertaking's effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

As part of its duties under the NHPA, and in consultation with area Tribes, the BLM has identified a traditional cultural property (TCP) or property of traditional religious and cultural significance existing within the APE. The USFWS portion of the TCP addressed as Part A of the maze is on the National Register of Historic Places (NRHP); furthermore, additional sites have been determined by BLM to be eligible for inclusion on the NRHP under criterion A. The Tribes have identified the Topock TCP as part of a larger area of traditional and cultural importance, whose boundaries have yet to be defined. This larger TCP will not be defined within the scope of this undertaking.

Because the area known as Topock is part of a broader traditional cultural landscape, Tribal Governments in the region recognize the project as significant, not only because of the sacred nature of the area in which the contamination exists, but also because significant water rights and land use rights are at risk. This concern is a particular focus of Tribes whose reservations or ancestral homelands are located downstream from the project area. The Tribes agree that the Colorado River and the surrounding natural environment and the health of the River are primary concerns of the Tribal Governments.

The primary objectives of the agencies are the remediation of historical contamination of the soil and groundwater by hazardous substances, and prevention of further releases of any harmful materials within the cultural and natural environment of the Colorado River and specifically within the APE. This concern is balanced by respect for the inherent rights of, and legal obligations of, the federal government to sovereign Tribal Nations.

Technical Review Committee

In 2011, a multi-disciplinary panel of independent scientific and engineering experts was established to provide on-call services to interested tribes relating to the cleanup. This panel, called the Technical Review Committee (TRC) was established by DTSC as part of the EIR mitigation measures to provide expertise to the local Tribal Governments in areas such as geology, hydrology, water quality, engineering, toxicology, and biology. In addition to reviewing project-related documents and participating in project meetings, the TRC advises and receives feedback from tribal members on technical matters relating to the site cleanup.

Topock Environmental Investigation and Cleanup

Consultative Workgroup[13]

In March 2000, DTSC established a Consultative Workgroup (CWG), comprised of stakeholder agencies, to provide consultation and recommendations to DTSC in its oversight of the project. CWG meetings are usually held every quarter to discuss project activities and plans.

The CWG includes, but is not limited to, representatives from the following agencies, Tribal governments, and stakeholders:

Lead Regulatory Agencies

- California Lead - California Department of Toxic Substances Control
- Federal Lead - U.S. Department of the Interior

Federal Oversight Agencies

- U.S. Department of the Interior
- U.S. Bureau of Land Management
- U.S. Bureau of Reclamation
- U.S. Fish and Wildlife Service

Supporting CWG Members

- Arizona Department of Environmental Quality
- California Department of Fish and Game
- California Regional Water Quality Control Board - Colorado River Basin
- California State Water Resources Control Board
- Chemehuevi Indian Tribe
- Cocopah Indian Tribe
- Colorado River Board of California
- Colorado River Indian Tribes
- Fort Yuma-Quechan Indian Tribe
- Fort Mojave Indian Tribe
- Hualapai Indian Tribe
- Metropolitan Water District of Southern California
- Mohave County Department of Public Health
- Pacific Gas and Electric Company
- Parker Indian Health Center, Office of Environmental Health & Engineering
- San Diego County Water Authority
- U.S. Bureau of Indian Affairs
- U.S. Environmental Protection Agency
- U.S. Geological Survey
- U.S. Indian Health Service

[13] *From DTSC Project Website (www.dtsc-topock.com), Regulatory Authority for Cleanup*

Project Website[14]

DTSC's website (www.dtsc-topock.com) provides an overview of current Site activities and other Site-related information. Information on this website includes:

- Station and Site location and history
- Investigation and cleanup activities: past, present, and future
- Community Outreach Information

Community Outreach[15]

DTSC issued an updated Community Outreach Plan (COP) in January 2013. The COP is a revision of the June 9, 1998 Public Participation Plan, which was previously updated in February 2007 and appended in July 2009. The COP uses a variety of communication tools to share information and to gain input from the community including surveys, fact sheets, meetings, and written and electronic documents.

The purpose of the COP is to keep the community, stakeholders, and other interested parties informed in a timely fashion, to formally document community perspectives regarding the environmental investigation and remediation at the Station, and to identify specific community outreach activities to be conducted to ensure community involvement in the agency decision-making process. The current COP can be found on the project website at www.dtsc-topock.com or at any of the information repositories.

In 2012, DOI issued a Community Involvement Plan (CIP) to update the CIP issued in 2009. The CIP outlines DOI's outreach activities to involve interested members of the public in a wide variety of Site issues, including characterizing the nature and extent of contamination, evaluating remedial alternatives, and selecting and implementing cleanup actions. The CIP will be reviewed and revised as necessary, until the Site cleanup is complete.

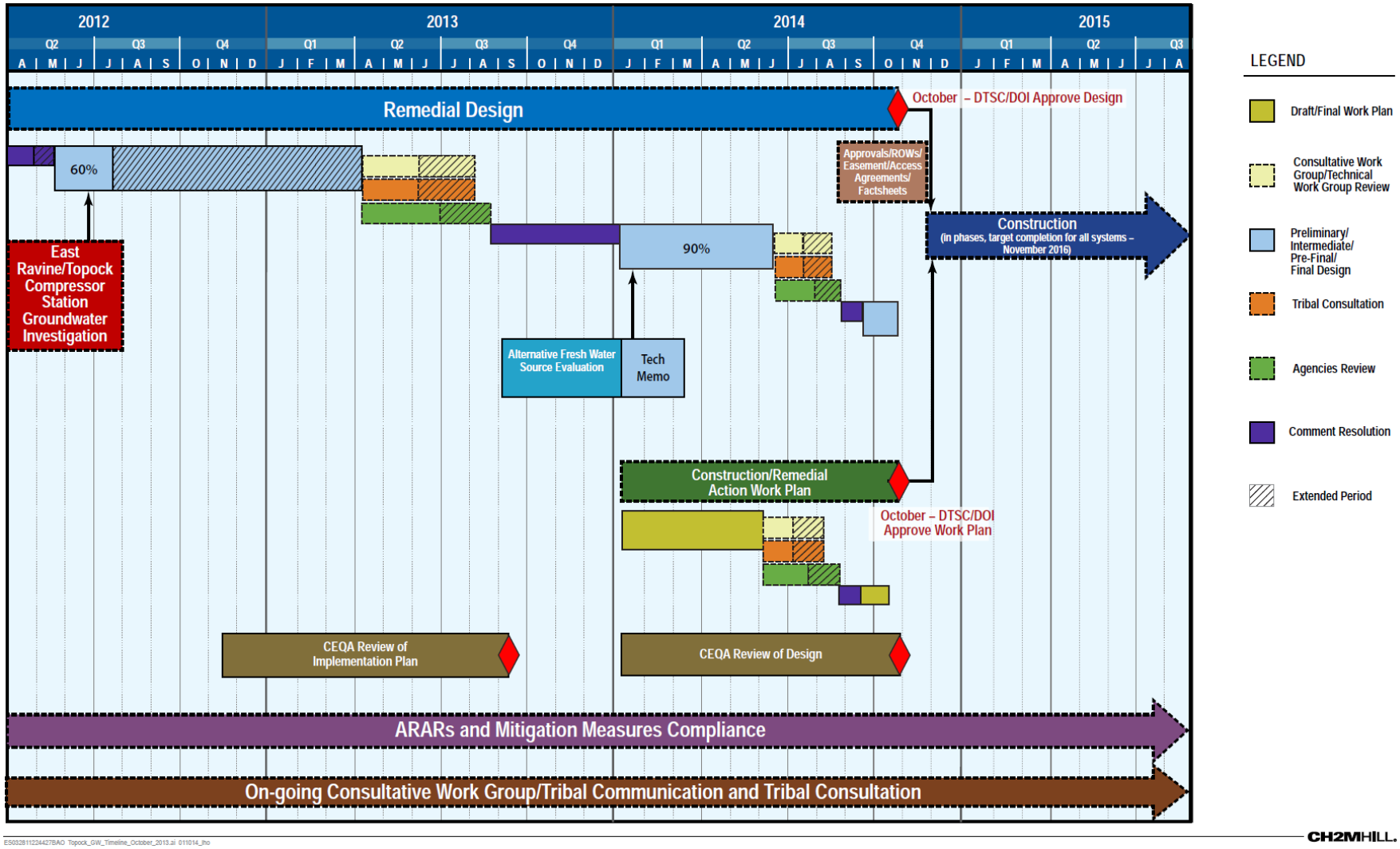
[14] *Adapted from DTSC Project Website (www.dtsc-topock.com), Home Page*

[15] *Adapted from DTSC Fact Sheet - PG&E Topock Environmental Investigation Update, January 2012*

6. Upcoming Project Schedules

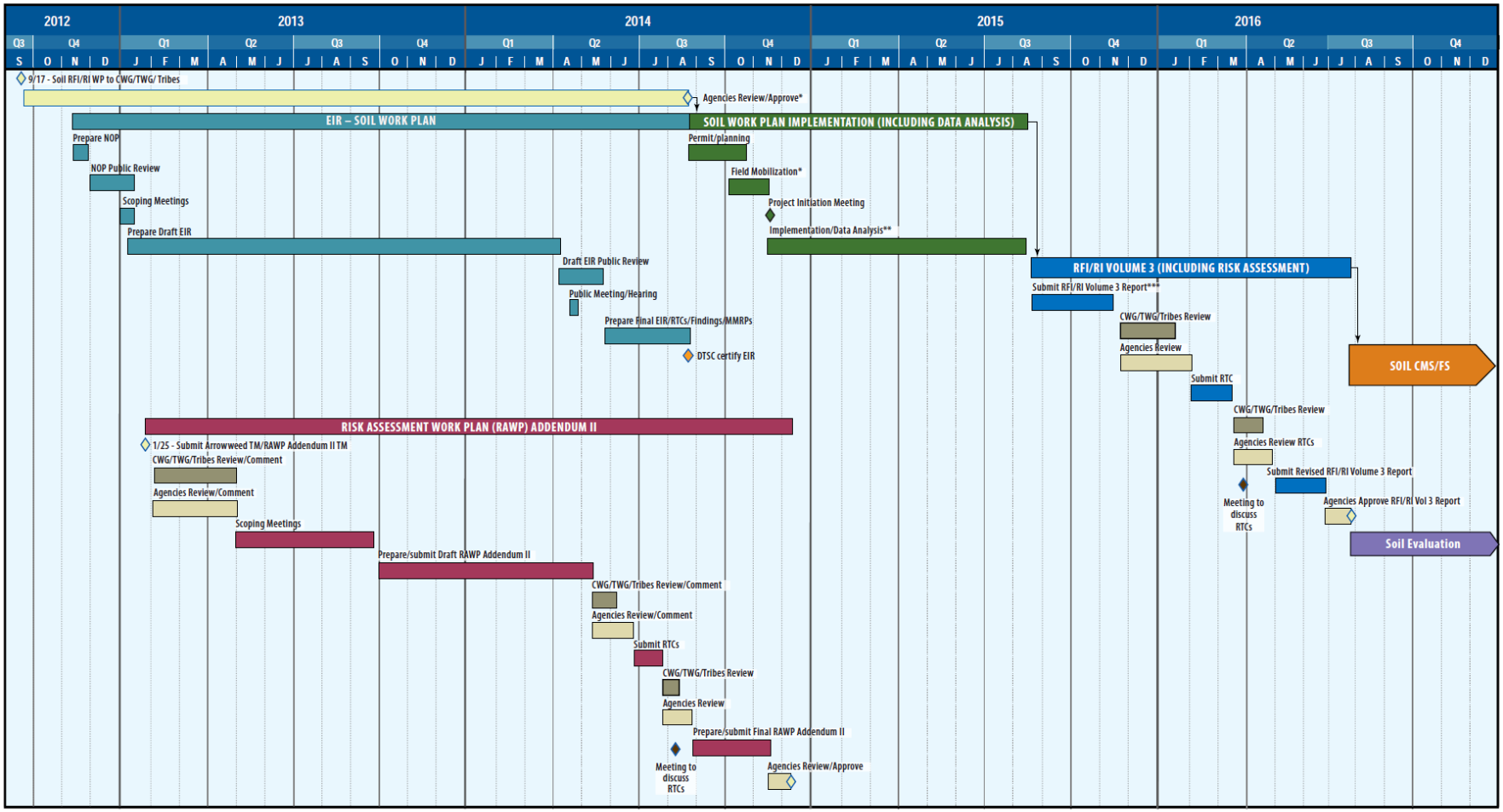
Groundwater Remedy Schedule

Groundwater Remedy Schedule updated January 2014



Soils Investigation Schedule

Schedule updated January 2014



* The timing of work plan approval is pending CEQA review. The timing and duration of mobilization is estimated and will be redefined following DTSC/DOI approval of the work plan.

** Field Implementation schedule duration will depend on field conditions, ability to perform field activities concurrently, and reaching timely decisions regarding the need for additional samples.

*** The timing and duration of Reporting is estimated and will be refined after completion of WP Implementation.

CEQA	California Environmental Quality Act
CMS/FS	Corrective Measure Study/Feasibility Study
CWG	Consultative Work Group
DOI	US Department of the Interior
DTSC	California Department of Toxic Substances Control
RTC	Response to Comments
TM	Technical Memo
TWG	Technical Work Group
WP	Work Plan

ES100112232744SAO_Topock_Soil_Timeline_October2013.ai 011014 lho

CH2MHILL.

7. Project Contacts

Visit www.dtsc-topock.com for more information

California Department of Toxic Substances Control

Aaron Yue, Project Manager
DTSC Project Manager
5796 Corporate Avenue, Cypress, CA 90630
(714) 484-5439
aaron.yue@dtsc.ca.gov

U.S. Department of the Interior

Pamela Innis
U.S. Department of the Interior, Topock Remedial Project Manager
P. O. Box 25007 (D-108)
Denver Federal Center, Building 67, Room 118, Denver, CO 80225
(303) 445-2502
pamela_innis@ios.doi.gov

PG&E

Yvonne Meeks, Manager, Environmental Remediation
Pacific Gas and Electric Company
4325 South Higuera
San Luis Obispo, CA 93401
(805) 234-2257
yjm1@pge.com

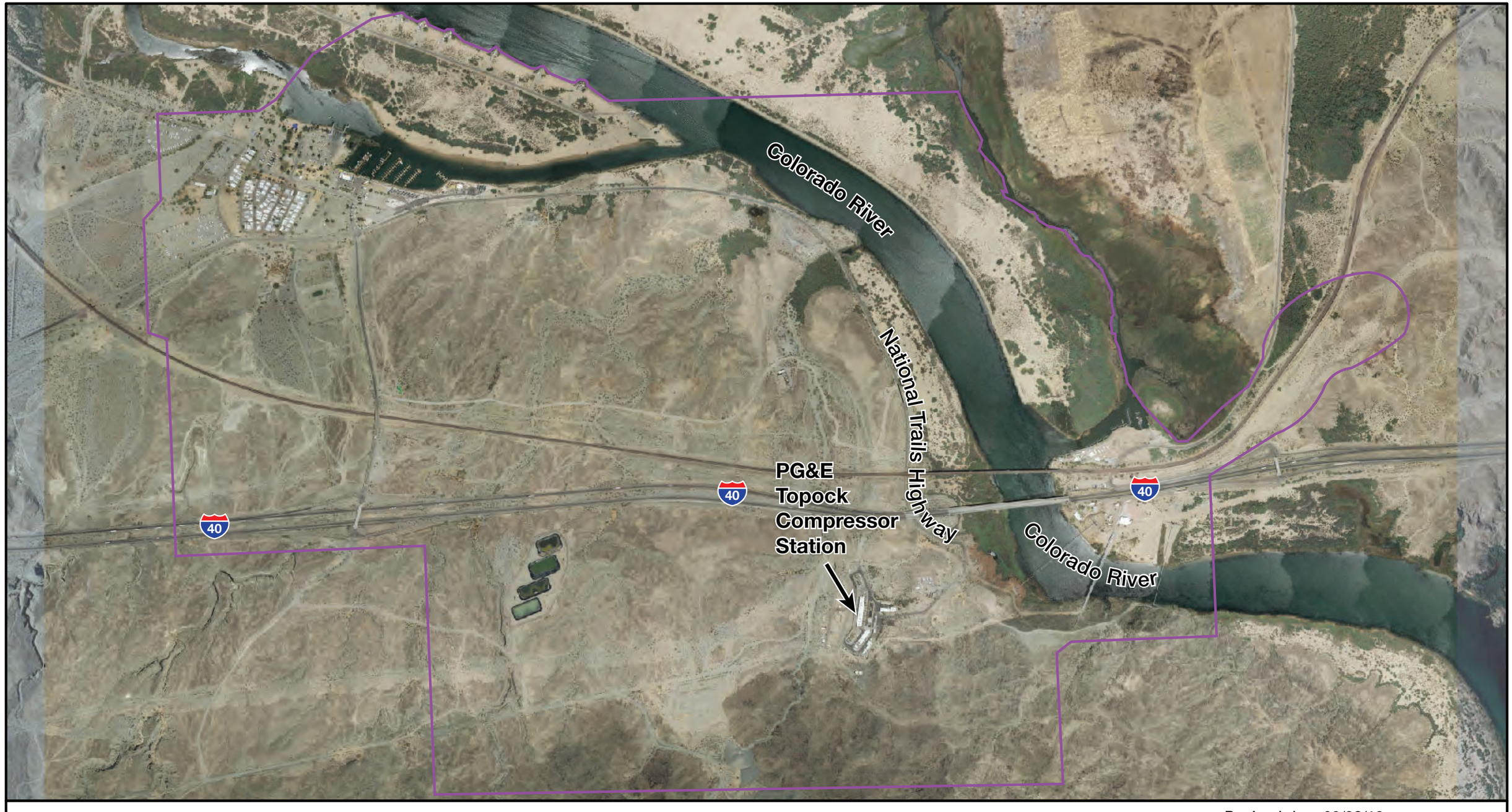
24-Hour PG&E Environmental Remediation Information and Response Line (to be used in case of an off-hours emergency): 1-866-247-0581.

Sensitivity

Maps/Figures

Topock Environmental Investigation and Cleanup

Area of Potential Effects (APE)



LEGEND

Area of Potential Effects (APE)

N

0 500 1,000 2,000 Feet

Revised date 09/28/12

FIGURE 1
AREA OF POTENTIAL EFFECTS

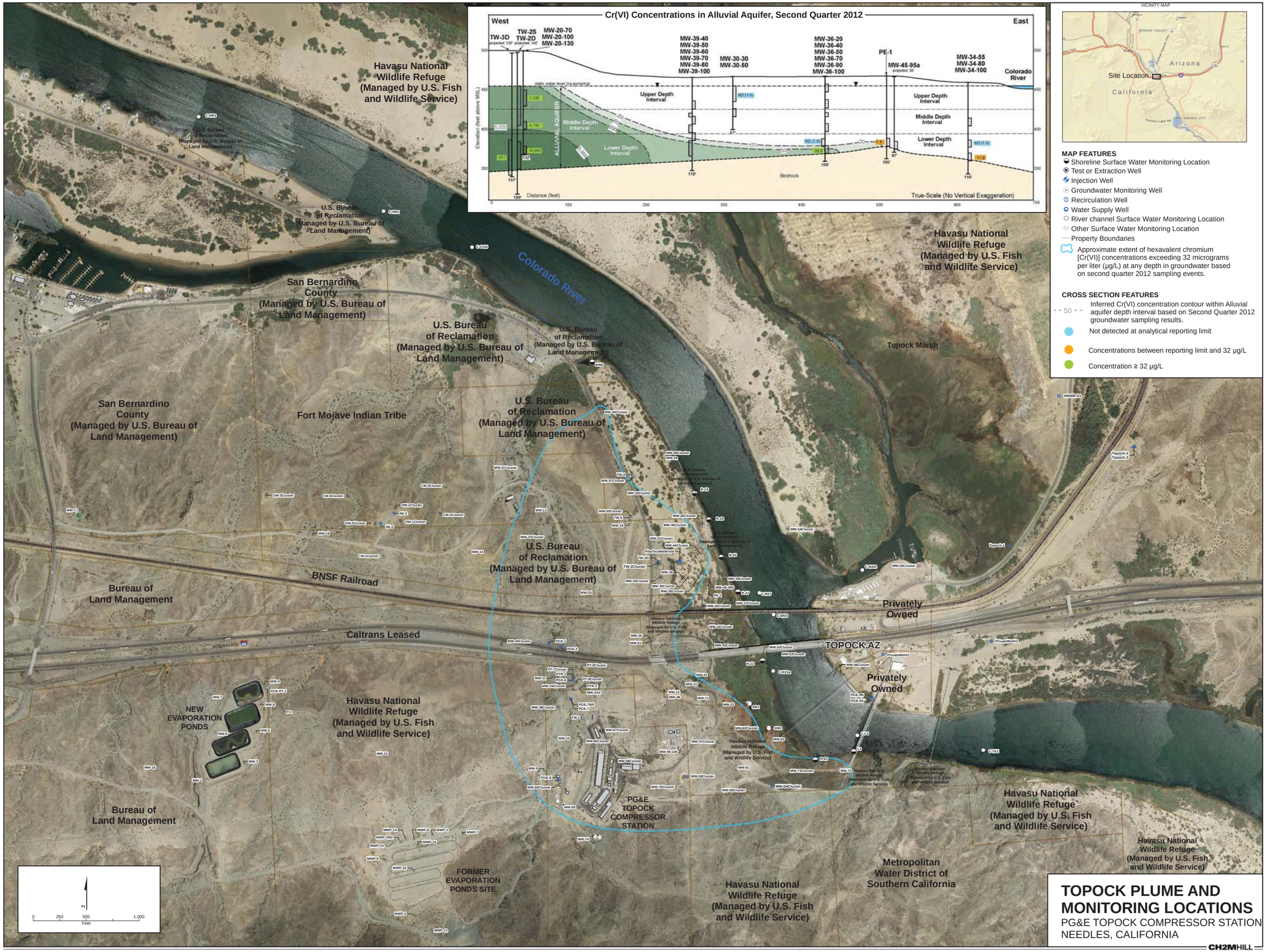
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Path: D:\Projects\Topock\MapFiles\2012\CMS\Plume_EIR.mxd

Topock Environmental Investigation and Cleanup

Groundwater Plume



TOPOCK PLUME AND MONITORING LOCATIONS

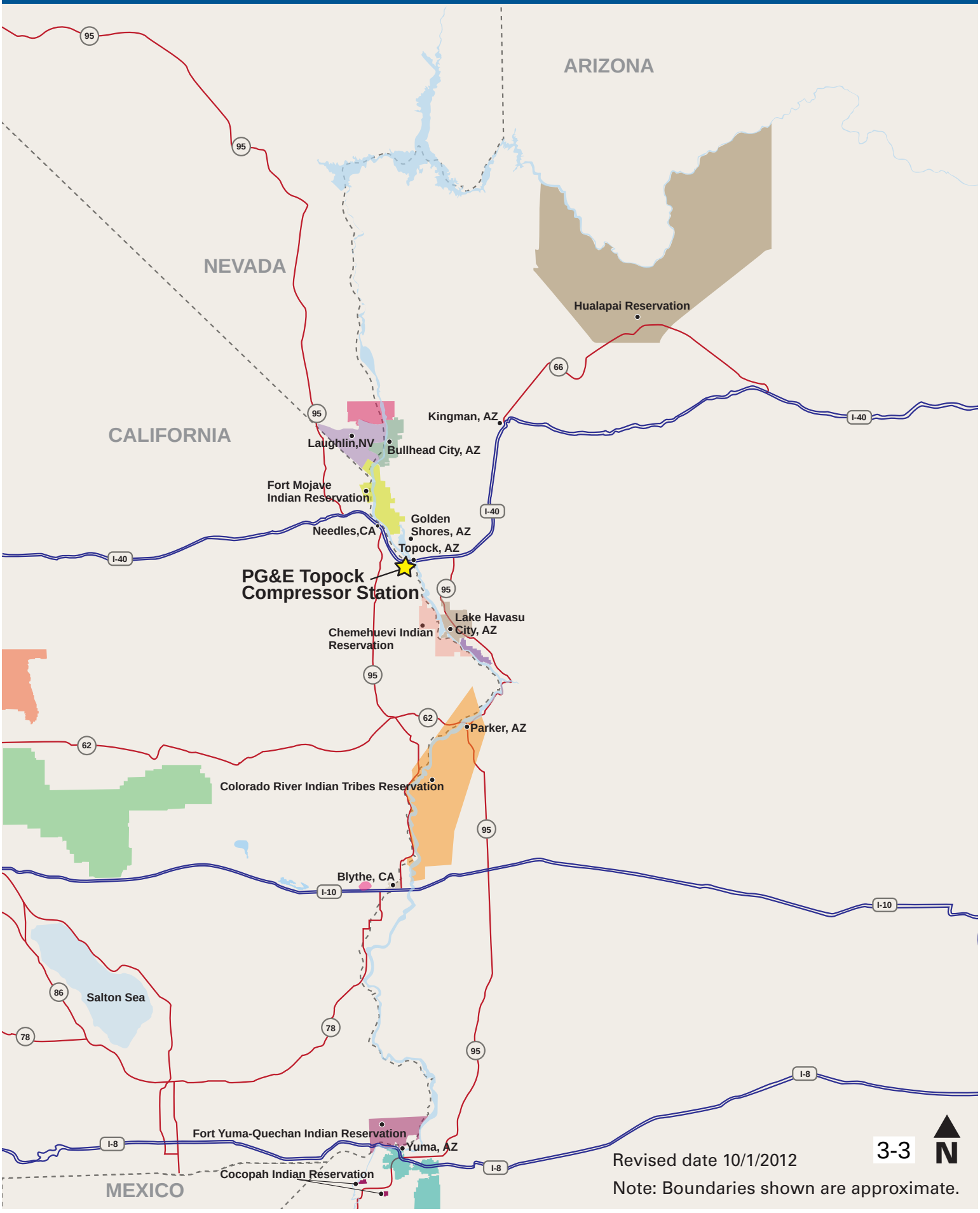
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Topock Environmental Investigation and Cleanup

Colorado River Communities and Tribal Reservations

Colorado River Communities and Tribal Reservations



3-3

Revised date 10/1/2012

Note: Boundaries shown are approximate.

Topock Environmental Investigation and Cleanup

Soils Investigation Areas

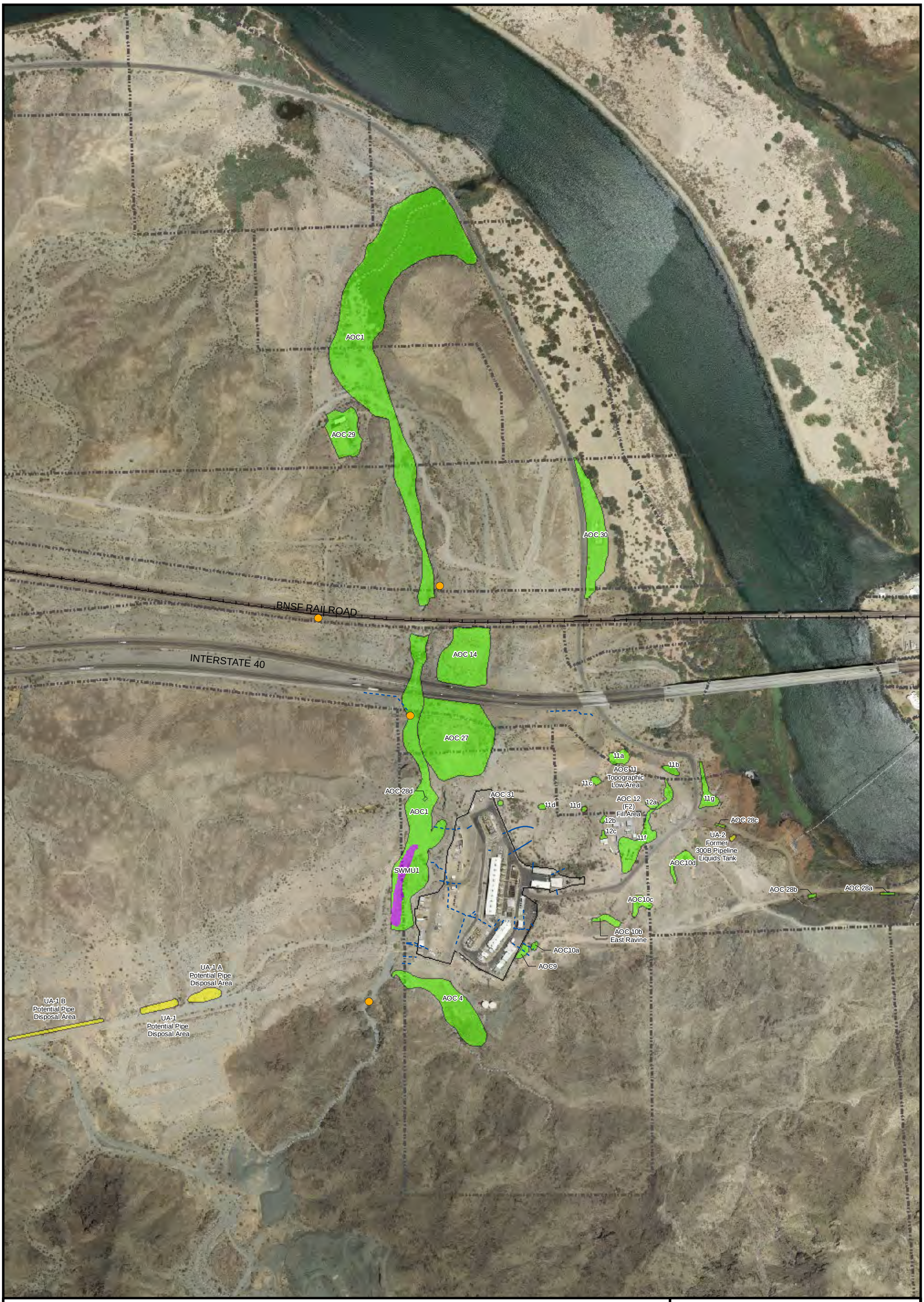
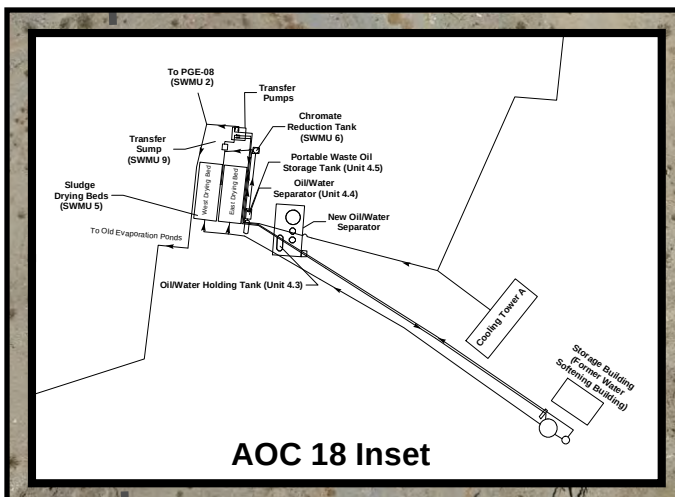


FIGURE 1-2
SOLID WASTE MANAGEMENT UNITS AREAS OF CONCERN, AND OTHER UNDESIGNATED AREAS TO BE INVESTIGATED UNDER PART A

SOIL RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION WORK PLAN
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CA

CH2MHILL

Path: D:\Projects\Topock\MapFiles\2012\SWP_B\ALL_SWMU_AOC_Locs11X17Outside.mxd



SWMU 11
Sulfuric Acid Tanks

AOC 6
Cooling Tower B

AOC 24
Potential Former
Oil/Water Separator

AOC 25
Compressor Building
Engines and Basements

AOC 19
Former Cooling
Liquid Mixing Area

SWMU 6
Former Chromate
Reduction Tank

AOC 16
Sand Blast Shelter

SWMU 9
Former Transfer Sump

AOC26
Former Scrubber Sump

UNIT 4.5
Former Portable
Waste Oil Storage Tank

AOC 32
Oil Storage Tank and
Waste Oil Sump

AOC 15
Auxiliary Jacket
Water Cooling Pumps

SWMU 5
Former Sludge
Drying Beds

UNIT 4.4
Former Oil/Water Separator

AOC33
Potential Burn Area

UNIT 4.3
Oil Water Holding Tank

AOC 21
Round Area by
Sludge Drying Beds

SWMU 11
Sulfuric Acid Tanks

AOC 18
Transfer Piping
(See Inset Map)

AOC 17
Onsite Septic System

AOC 25
Auxiliary Building

AOC 5
Cooling Tower A

AOC 22
Unidentified Three-
Sided Structure

AOC 23
Former Water
Conditioning Building

SWMU 8
Former Process Pump Tank

AOC 8
Paint Locker

AOC 7
Hazardous Material
Storage Area

LEGEND

- Area of Concern (AOC)
- Solid Waste Management Unit (SWMU)
- Site Fence Boundary
- Stormwater Piping Above Ground (Approximate Location)
- Stormwater Piping Below Ground (Approximate Location)

Notes:
1) AOC 13 is not depicted on this figure. It consists of the unpaved areas within the compressor station.

2) AOC 20 is not depicted on this figure. It consists of industrial floor drains within the compressor station.

3) Boundaries of all SWMUs, AOCs, and Other Areas are approximate.

N

0 100 200 Feet

FIGURE 1-3
PART B INVESTIGATION AREAS

SOIL RCRA FACILITY INVESTIGATION/
REMEDIAL INVESTIGATION WORK PLAN
PG&E NEEDLES TOPOCK COMPRESSOR STATION,
NEEDLES, CA

CH2MHILL

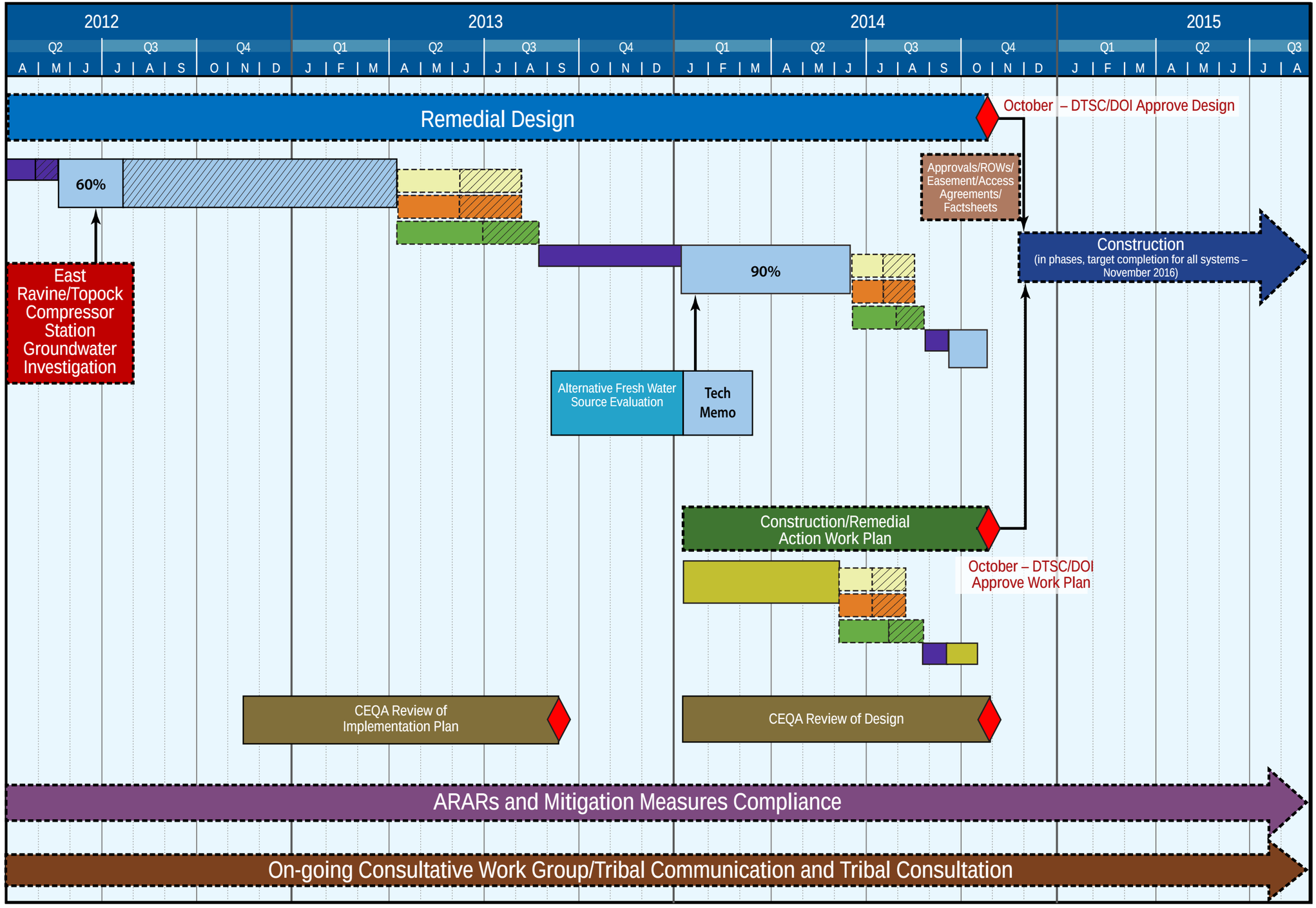
Path: D:\Projects\Topock\MapFiles\2012\SWP_B\ALL_SWMU_AOC_11X17.mxd Date Saved: 8/8/2012 3:47:42 PM

Schedules

4

Groundwater Remedy Design, Construction, and Initial Start-Up Schedule

PG&E Topock Compressor Station | Needles, California
January 10, 2014

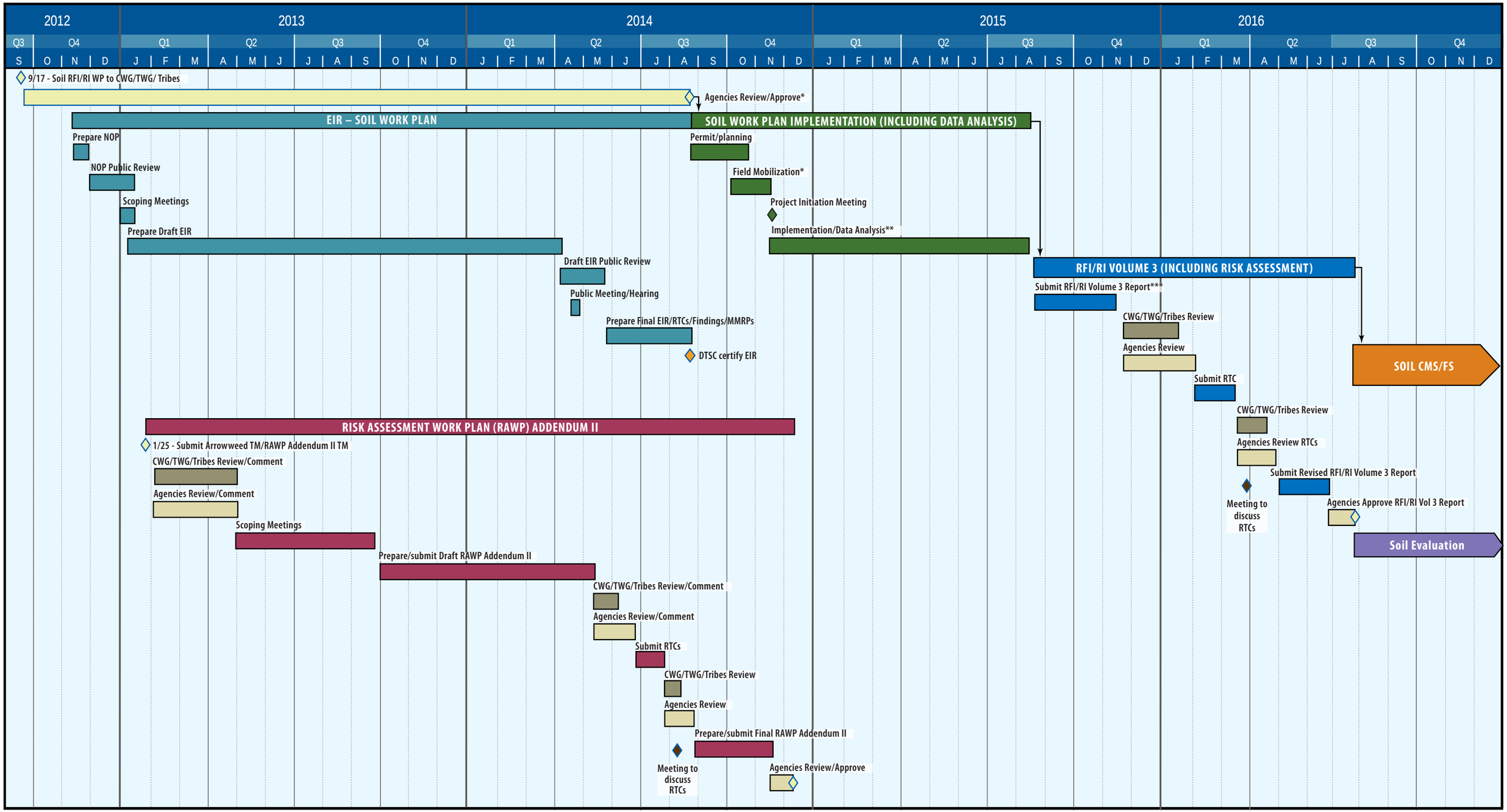


LEGEND

- Draft/Final Work Plan
- Consultative Work Group/Technical Work Group Review
- Preliminary/ Intermediate/ Pre-Final/ Final Design
- Tribal Consultation
- Agencies Review
- Comment Resolution
- Extended Period

CH2MHILL

Soil RCRA Facility Investigation/Remedial Investigation Timeline (2012-2016)



* The timing of work plan approval is pending CEQA review. The timing and duration of mobilization is estimated and will be redefined following DTSC/DOI approval of the work plan.

** Field Implementation schedule duration will depend on field conditions, ability to perform field activities concurrently, and reaching timely decisions regarding the need for additional samples.

*** The timing and duration of Reporting is estimated and will be refined after completion of WP Implementation.

CEQA	California Environmental Quality Act
CMS/FS	Corrective Measure Study/Feasibility Study
CWG	Consultative Work Group
DOI	US Department of the Interior
DTSC	California Department of Toxic Substances Control
RTC	Response to Comments
TM	Technical Memo
TWG	Technical Work Group
WP	Work Plan

Working Groups

Summary of Project and Stakeholder and Community Groups

The California Department of Toxic Substances Control (DTSC) is overseeing the Resource Conservation Recovery Act (RCRA) corrective action (investigation and cleanup) project at the PG&E Topock site near Needles, California. The Department of the Interior (DOI) is overseeing the same site activities under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The site is located next to the Colorado River, which is provides drinking water to millions of people in the western United States; including 18 million Californians.

DTSC recognizes the importance of the environmental investigations and cleanup activities at the PG&E Topock site to the many stakeholders who value the surrounding land and Colorado River, including U.S. Department of Interior Agencies, communities in California, Arizona, Nevada and 10 Native American Tribes, six of which have lands that border the Colorado River. To this end, DTSC has established several focused stakeholder groups which are outlined below.

Federal laws provide for communication/consultation with Native American Tribes, stakeholders and the community on CERCLA projects. Nine federally recognized tribes have identified areas of traditional, sacred, religious and cultural importance within the Area of Potential Affect (APE) for the Topock Project. The Metropolitan Water District, Arizona Department of Environmental Quality and the Regional Water Quality Control Board are also interested parties on the project. The Federal agencies participate in the stakeholder groups established by DTSC. The agencies believe these forums offer opportunities for ongoing communication on this complex project. Additionally, the Federal Agencies have a trust responsibility to the Tribes, which obligates the Agencies to protect the Trust interests of the Tribe to the maximum extent feasible for resources held in trust by the U.S. Government for the Tribes. The Consultation Protocol describes the manner in which the BLM and other Federal and State Agencies will consult with Signatories, Tribes, and Invited Signatories during the execution of the Programmatic Agreement (PA) for the Undertaking. The BLM, mindful of its government-to-government responsibilities, as lead Federal Agency for Section 106 review and implementation for the Undertaking, shall continue to consult with all Tribes who have participated in the Undertaking's consultation process whether or not the Tribes have signed this PA.

Consultative Work Group (CWG)

The Consultative Work Group (CWG) was first established in 1999 to facilitate participation of key stakeholders in the site investigation and remediation process. DTSC expanded the CWG after designation as the Administering Agency pursuant to the provisions of Health and Safety Code, Division 20,Chapter 6/65 "Unified Agency Review of Hazardous materials Release Sites" (added by Assembly Bill 2061 of 1993) in 2004. As Administering Agency, DTSC is required to hold CWG meetings. The CWG is comprised of 15 stakeholder groups with approximately 100 participants. DTSC currently convenes the CWG quarterly to

provide timely information about the status of the corrective action and any important related developments; solicit opinions, comments and recommendations from stakeholders with regard to important decisions pertaining to the corrective action process; and to allow for full participation of the stakeholders in discussions and deliberations.

The objective of the CWG is to facilitate participation of these state, regional, federal agencies, and Native American Tribes (stakeholders) in the corrective action process, and through such participation, integrate applicable federal and state regulatory authorities and requirements. In addition, the CWG will assist DTSC in making appropriate decisions towards the effective and expedited remediation of past releases from the PG&E Topock site which balance protection of the lands and waters of the Colorado River basin in a manner that is respectful and minimizes impacts to sensitive cultural and environmental resources. This will be achieved by maintaining active communication and regular consultation among the various parties on matters related to the corrective action at PG&E Topock.

Technical Work Group (TWG)

DTSC established the Technical Work Group (TWG) as a subgroup of the CWG. The TWG meets to discuss various specific project related issues in greater detail which are then reported back to the CWG. Areas of discussion include groundwater investigation, hydrogeology, soil investigation, modeling and engineering design, human, ecological and risk evaluations and assessments, and remediation alternatives for the Topock project. The TWG is comprised primarily of stakeholders and/or their consultants with technical expertise in these areas. The TWG usually meets monthly to quarterly depending on project needs.

Clearinghouse Task Force (CTF)

The Clearinghouse Task Force (CTF) was formed as an outcome of the 2008 Topock Breakthrough Summit. The CTF was formed to develop and implement processes and tools to improve communications and enhance Topock stakeholder understanding of project technical and regulatory information. The goal is to foster timely and effective project management, early collaboration, and provide information to the state and federal agencies for decision making on the Topock Remediation Project. The CTF is a smaller, more intimate group, with limited participation (approximately 15 people). CTF members are also CWG members. The CTF meets regularly, depending on need, ranging from monthly to quarterly. The CTF will communicate progress to the Topock Leadership Partnership and the Consultative Work Group, and will integrate feedback and direction from these groups into future process improvement efforts.

Topock Leadership Partnership (TLP)

The TLP was created as a result of the 2008 Topock Breakthrough Summit and an understanding that a forum was needed to enable senior officials to provide input to the DTSC and Department of the Interior (DOI) on the direction of actions necessary to complete the Topock Remediation Project. A Topock Leadership Partnership (TLP) mission statement was developed and specifies that the purpose of the TLP is

to exchange information, views and opinions on various actions proposed by the DTSC and DOI with respect to the development, selection, and implementation of the groundwater remedy for the Topock site. The intent is not government-to-government consultation but to provide a senior level perspective of each participant's interests and gain understanding of differing points of view which could be considered before critical decisions are made by the agencies. The TLP has met five times since 2008, principally prior to critical project decisions. Generally, the TLP discusses larger, conceptual and broader policies or decisions, while the TWG and the CWG continue to deal with more detailed and technical issues. Senior leaders of CWG stakeholder groups and the 10 nearby Native American Tribes are invited to the TLP.

Topock Environmental Investigation and Cleanup

Topock Leadership Partnership (TLP)

Working Draft for Discussion and Comment

Revised Draft 1/29/09

Topock Leadership Partnership

Mission Statement

The establishment of the TLP represents an effort to garner increased shared understanding of each participant's interests, to be considered in the decision making process on actions or guidance necessary to move expeditiously to final remedies for the Topock site.

Introduction

This mission statement identifies the purpose and objectives of the Topock Leadership Partnership (TLP). The TLP is an interagency group composed of senior officials (or their designated employees with authority to act on their behalf) acting in their official capacities. PG&E will provide support to the TLP and attend TLP meetings at the direction of DTSC. The TLP is a critical part of building trust and improving communications in order to move forward with the cleanup of the Topock site in an environmentally and culturally sensitive manner. Each of the entities participating on the TLP will determine who is appropriate to represent that entity. However, as a general principle, each participant should have sufficient authority to provide meaningful, high-level management input on issues for the entity they represent.

The TLP's focus relates to the cleanup of hazardous wastes and hazardous substances disposed at or released from the Pacific Gas and Electric Company (PG&E) compressor station located near Topock, Arizona (the "Topock site"). Several federally recognized tribes have identified areas of traditional, sacred, religious and cultural importance within the Area of Potential Effect for the Topock Remediation Project.

Historic disposal and releases of hazardous wastes and hazardous substances at the Topock site, including hexavalent chromium, are the subject of an ongoing investigation being implemented by PG&E and directed by DTSC and DOI pursuant to administrative orders entered with PG&E under State and Federal law, respectively. These State and Federal laws provide for community involvement, including the involvement of tribal governments, and stakeholders, in the evaluation and selection of corrective and remedial action. The establishment and activities of the TLP are consistent with and in furtherance of these community involvement requirements.

Purpose and Objectives

The purpose of the TLP is to exchange information, views, and opinions relating to the development, evaluation, selection, and implementation of remedial and corrective action at the Topock site.

The TLP will provide a big picture perspective on the interests and objectives of many of those who depend on the Colorado River and will engage senior leadership in a timely and respectful dialogue meant to facilitate the selection of remedial action that will protect public health, welfare, and the environment.

The TLP will participate in discussions before critical decisions as determined by DTSC and DOI are made and, if possible, before on-site activities occur. This dialogue should improve mutual understanding of differing points of view and the flow of information among the parties. TLP participants recognize that decision-making authority for selecting corrective action and remedial action is vested in and will remain with DTSC and DOI, respectively.

Meetings

As determined by DOI and DTSC, meetings will be held in advance of major decisions, major tasks, major on-site activities, or as new undertakings are scheduled. This may be on a quarterly basis or more or less frequently, as needed and determined by the participants, with the understanding that the meetings should be primarily event-driven. Members will have input on scheduling of meetings and topics to be discussed.

Relationship to Other Topock Committees

In general, the TLP will discuss larger conceptual and broad policies or decisions while the Technical Work Group (TWG) and the Consultative Work Group (CWG) continue to deal with more detailed and technical issues. The TLP will utilize the communications process improvement work of the Information Clearinghouse to provide executive level information explaining and summarizing technical reports or alternatives. The same stakeholders can participate on the TLP and with the CWG and TWG.

The TLP is not a forum for government-to-government consultation or any other form of consultation required by law including, without limitation, any consultation that may be required by the National Historic Preservation Act or other statutes or Executive Orders.

Reserved Rights

Neither the establishment of this TLP nor participating on it affects in any manner any rights or authorities of the participants and all such rights and authorities are hereby reserved. This mission statement is not intended to and does not create any right or benefit, substantive or procedural, enforceable at law or in equity, by any participant or any other person.

Topock Environmental Investigation and Cleanup

Consultative Work Group (CWG)

CHARTER
CONSULTATIVE WORK GROUP

PACIFIC GAS AND ELECTRIC COMPANY
TOPOCK FACILITY
NEEDLES, CALIFORNIA

Revised December 30, 2011

A. KEY OBJECTIVE

Pursuant to Section 25187 of the California Health and Safety Code, the Department of Toxic Substances Control has been designated as the sole Administering Agency representing the State of California for all Corrective Action activities and related permitting activities at the PG&E Topock facility located in Needles, California. Accordingly, DTSC has established a Consultative Work Group (CWG) consisting of itself, its sister State agency the Regional Water Quality Control Board (RWQCB), federal agencies (DOI, BLM, BOR, USFWS), as federal land management agencies as well as trustees of federal resources within or around the area of investigation, the Fort Mojave Indian Tribe as an adjacent property owner, the Metropolitan Water District of Southern California as an adjacent property owner and as an importer of Colorado River water for treatment and distribution as drinking water to cities and water districts throughout Southern California, Native American Tribes with lands in the vicinity of the Colorado River and representatives of the State of Arizona; all considered critical stakeholders in this project.

In designating DTSC as the administering agency, the California Environmental Protection Agency Site Designation Committee (Committee) is required to consult with the appropriate agencies that have expressed an interest in the Site, including all agencies that would otherwise be issuing a permit or other form of authorization. In compliance with Committee Resolution No. 03-03, DTSC has established the Consultative Work Group (CWG)
The objective of the Consultative Work Group is to facilitate participation of these state, regional, federal agencies, and Native American Tribes (stakeholders) in the corrective action process, and through such participation, integrate applicable federal and state regulatory authorities and requirements. In addition, the Consultative Work Group will assist DTSC in making appropriate decisions towards the effective and expedited remediation of past releases from the PG&E Topock site which balance protection of the lands and waters of the Colorado River basin in a manner that is respectful and minimizes impacts to sensitive cultural and environmental resources. This will be achieved by maintaining active communication and regular consultation among the various parties on matters related to the corrective action at PG&E Topock.

This Charter recognizes several facts concerning the RCRA Corrective Action Program for this facility and the coordination with the federal agencies on response actions at the facility pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

- Between 1951 and 1985, PG&E used Hexavalent chromium (CrVI) as a corrosion inhibitor in their cooling towers. From 1951 to 1964, waste water containing CrVI was discharged into a normally dry wash known as Bat Cave Wash.

- In 1964 PG&E began to treat the wastewater to convert the hexavalent chromium to its trivalent form. In 1985 PG&E stopped using chromium and switched to a phosphate-based corrosion inhibitor.

- In 1996, PG&E and DTSC entered into a Corrective Action Agreement to investigate releases of hexavalent chromium to Bat Cave Wash and other Solid Waste Management Units.

- DTSC has maintained a public participation plan for the Topock site since 1998. DTSC's public participation activities for the Topock site have included: updating the public participation plan, establishment and maintenance of a project website, preparation and distribution of fact sheets and public notices, maintenance of information repositories, outreach, interviews, and surveys, and public meetings, presentations, briefings and tours. In March 2000, DTSC formed a Consultative Workgroup (CWG) with other state and federal agencies.

- An Interim Measure (IM) has been implemented at the Site since March 2004. Implementation of the IM is expected to continue until a final corrective action/remedial action is in place. The IM currently consists of groundwater extraction for hydraulic control of the groundwater plume in the Colorado River floodplain, management of extracted groundwater via treatment in a groundwater treatment plant, and reinjection by groundwater injection wells.

- In 2005, PG&E and the federal agencies - Department of the Interior, Bureau of Land Management, Fish and Wildlife Service and Bureau of Reclamation – entered into an Administrative Consent Agreement to implement response actions at the site as set forth in the National Oil and Hazardous Substances Pollution Contingency Plan.

- The RFI/RI Volume 1 was completed in 2007; the RFI/RI Volume 1 report documents the site background and history of the Topock Compressor Station and identifies the solid waste management units (SWMUs), areas of concern (AOCs) and other undesignated areas to be carried forward in the RFI/RI for further investigation and evaluation. An addendum to the Volume 1 report is forthcoming to capture areas identified after the completion of the 2007 report.

- The RFI/RI for groundwater (RFI/RI Volume 2) was completed in 2009 and indicates that groundwater has been impacted with hexavalent chromium in a plume that underlies an area that is approximately 175 acres. The depth to groundwater in the area of the plume ranges from approximately 28 feet to over 135 feet bgs, and the thickness of the aquifer in the area of the plume ranges from less than 50 feet near the bedrock interface to over 150 feet near National Trails Highway..

- The groundwater risk assessment was completed in 2009, and provides the basis (along with applicable or relevant and appropriate requirements) for the remedial action goals in the CMS/FS. The groundwater risk assessment defined the media and constituents of concern, and risk-based remediation goals.

- The CMS/FS for groundwater was completed in 2009 and presents the identification and evaluation of various remedial alternatives to address the remedial action goals for groundwater contamination associated with the historic discharges to Bat Cave Wash (SWMU 1/AOC 1) and East Ravine (AOC 10) at the compressor station. The remedial action objectives are based on the conclusions of the groundwater risk assessment and the identification of applicable or relevant and appropriate requirements, and focus on the reduction of hexavalent chromium concentrations in site groundwater. The remedial alternatives are evaluated against the threshold and balancing criteria of RCRA and CERCLA.

- RFI/RI Volume 3 is forthcoming and will address the remaining SWMUs, AOCs, and undesignated l areas within and outside of the PG&E facility. RFI/RI Volume 3 will be completed following completion of the soil characterization activities.

- The PG&E facility is surrounded by property under the jurisdiction, custody, or control of the federal agency stakeholders as well as sensitive natural resources under the trusteeship of the federal government. Other entities owning or managing property near the PG&E facility include Burlington Northern Santa Fe Railroad, San Bernardino County, the Southern California Metropolitan Water District, and the Fort Mojave Indian Tribe. The approximately 175-acre groundwater plume underlies lands owned/managed by the Bureau of Reclamation, Bureau of Land Management, Burlington Northern Santa Fe Railroad, the U.S. Fish and Wildlife Service, and the Fort Mojave Indian Tribe. Several other entities have easements and/or rights-of-way within the 175-acre plume area, including California Department of Transportation, San Bernardino County, Southern California Gas Company, Transwestern Pipeline Company, Mojave Pipeline Company, PG&E, City of Needles Electric, Southwest Gas Corporation, and Frontier Telephone. In addition, the groundwater contamination is adjacent to the Colorado River and the Havasu Wildlife Refuge. Native American communities live around, upstream and downstream of the affected area.

B. ROLES OF CONSULTATIVE WORK GROUP MEMBERS

1. *Administering Agency*

California Health and Safety Code, Division 20, Chapter 6.5 Section 25187, and Chapter 6.65 provide the basis for DTSC's authority as the administering agency. As the agency authorized to implement RCRA regulations in California, and the administering agency designated by the Committee, DTSC is the State of California agency with sole jurisdiction over all corrective action resulting from the release of RCRA hazardous wastes from the PG&E Topock facility. Accordingly, in February 1996 DTSC and PG&E entered into a Corrective Action Consent Agreement to investigate and remedy hazardous waste releases from the Topock facility.

The California Water Quality Control Board (CRWQCB) is DTSC's main regulatory partner overseeing the corrective action at PG&E Topock. As the California agency mandated to protect the water resources of the state, the CRWQCB has a vital interest in the potential impact to groundwater and surface waters resulting from the hazardous waste release at Topock. Any corrective action at the site must meet the applicable requirements of the California Water Code and Clean Water Act, pursuant to Health & Safety Code sections 25264, subdivision (a) and 25187, subdivision (b)(4); see also, section 25204.6, subdivision (b). The RWQCB assists DTSC as administering agency in the Consultative Workgroup.

Role of the administering agency:

- Convene regular or special meetings of the CWG, and preside over such meetings
- Provide timely information to stakeholders about the status of the corrective action and any important related development
- Solicit opinions, comments and recommendations from stakeholders with regard to important decisions pertaining to the corrective action process
- Allow for full participation of the stakeholders in discussions and deliberations
- Provide timely decisions and resolution of issues to maintain progress and expedite the corrective action.

2. *Stakeholders*

DTSC is committed to properly inform the public, Tribal Nations, members of the surrounding community affected by the hazardous waste releases, and affected land owners (stakeholders), and to involve them in important decisions related to the investigation and cleanup process (HSC Ch. 6.5, Sec. 25103, 253587[b]). The PG&E Topock facility is largely surrounded by federal lands and is located adjacent to the Colorado River and the Havasu Wildlife Refuge. Also located near the facility are lands owned by the Fort Mojave Indian Tribe and the Metropolitan Water District of Southern

California. Hazardous waste releases from PG&E Topock have affected, or have the potential to affect these resources as well as people living near and downstream of the facility, including Native American communities. Because these resources are under the trusteeship of United States federal agencies, DTSC considers these agencies/trustees to be critical stakeholders in the corrective action process at PG&E Topock.

Additionally, because of the importance of the Colorado River as a resource serving the irrigation and drinking water needs of millions of Southern Californians, DTSC considers the Metropolitan Water District of Southern California to be a critical stakeholder in this corrective action process.

Therefore, DTSC has created the Consultative Workgroup to facilitate the participation of these and other stakeholders in the corrective action process. Current CWG members and interested Tribal Nations are shown in Attachment A. This list of interested stakeholders is updated periodically.

Role of the Stakeholders:

- attend regular meetings of the Consultative Workgroup and any special meetings called by the administering agency

- notify the administering agency of important issues/concerns; request a special meeting of the CWG if it deems necessary to resolve such issues/concerns

- provide suggestions for agenda items in CWG meetings

- participate in discussions, share information, and provide comments and recommendations to the administering agency on issues/decisions pertinent to corrective action

- be timely in responding to communications or requests for information/comments/recommendations to avoid unnecessary delay of the project

- perform any special tasks agreed to by the members of the CWG

- provide assistance and information regarding compliance with laws, regulations and policies within each Stakeholder's jurisdiction

C. CONSULTATIVE WORK GROUP MEETINGS

1. The CWG shall meet on a frequency dictated by activities associated with the project. At its discretion, DTSC may call for a special meeting of the CWG. Any member of the CWG can request that DTSC hold a special meeting. DTSC will hold the meetings in locations in the vicinity of the PG&E Topock Compressor Station such as Bullhead City/Laughlin, Boulder City, Needles, Lake Havasu City

and Parker. DTSC will periodically survey the CWG as to the location and frequency of the meetings.

2. The CWG meetings are a venue for providing timely updates on the status of corrective action, consultation with members on important decisions to be made, discussion of technical and legal issues and areas of concern, coordination of activities, and all other matters of common interest to the members of the CWG.

3. DTSC is responsible for arranging the time and place of CWG meetings and informing the members of the details about the meeting at least two weeks before the meeting. DTSC shall prepare the agenda for the meeting and solicit suggestions for agenda items from members. DTSC shall inform the members of the final agenda at least a week before the meeting. DTSC, as well as invited presenters on the agenda, will strive to provide members with electronic copies of handouts related to their agenda items at least a week before the meeting.

4. DTSC shall preside over all meetings of the CWG.

5. After every meeting, DTSC shall prepare a summary of action items which shall be distributed to all members within three weeks after the meeting. The action item summary shall specify the task(s) or activity to be completed, the responsible person(s), completion date, etc. These action items shall be reviewed at the next meeting and a progress report given by the responsible party. Unresolved action items may be carried forward into the next meeting, at the discretion of the CWG.

6. As the need arises, DTSC may invite PG&E and its representatives to give presentations and/or participate in deliberations of the CWG. DTSC may also invite other interested parties to attend meetings and give presentations to the CWG.

D. REVIEW OF DOCUMENTS

DTSC and PG&E shall ensure that all CWG members receive copies of technical reports, documents or applications submitted by PG&E to DTSC or other agencies on a timely basis. At the request of any CWG member, DTSC will accept from CWG members formal written comments on technical reports/documents submitted by PG&E pertaining to the site investigation and remedial actions. Members shall normally be provided at least thirty days to prepare their comments. A shorter timeframe for review may be set for time critical documents or small documents. Unless the deadline is waived by DTSC, comments submitted after the deadline may be excluded from further consideration/deliberation. All members' comments received by DTSC within the

specified deadline will be transmitted in their existing form to PG&E, with a requirement that PG&E respond.

It is DTSC's intent to understand all views within the CWG through free and open deliberations before DTSC makes a determination on the next course of action required of PG&E. Discussion shall be conducted in a manner that brings out the best solutions without sacrificing orderly project management resulting in unnecessary delay of the project. When agreements cannot be reached despite extensive discussion, DTSC as the administering agency has the authority to make final decisions to resolve issues.

Notwithstanding any provision of this Charter, each CWG member reserves all rights and authorities available to it with respect to corrective or remedial action associated with the site.

List of Consultative Work Group Members

August 2012

Lead Regulatory Agency

California Department of Toxic Substances Control

Federal Oversight Agencies

United States Bureau of Land Management
United States Bureau of Reclamation
United States Department of the Interior
United States Fish and Wildlife Service

Supporting CWG Members

Arizona Department of Environmental Quality
California Department of Fish and Game
California Regional Water Quality Control Board - Colorado River Basin
California State Water Resources Control Board
Chemehuevi Indian Tribe
Colorado River Board of California
Colorado River Indian Tribes
Metropolitan Water District of Southern California
Mohave County Department of Public Health
Pacific Gas and Electric Company
Parker Indian Health Center, Office of Environmental Health & Engineering
San Diego County Water Authority
United States Bureau of Indian Affairs
United States Department of the Interior, Office of Environmental Policy and Compliance
United States Department of the Interior, Office of the Solicitor
United States Environmental Protection Agency
United States Geological Survey
United States Indian Health Service

Topock Environmental Investigation and Cleanup

Clearinghouse Task Force (CTF)

Topock Remediation Project
Clearinghouse Task Force
Mission Statement
(Approved by CTF on November 15, 2011)

CTF Purpose:

The Clearinghouse Task Force (CTF) has been formed to develop and implement processes and tools to improve communications and enhance Topock stakeholder understanding of project technical and regulatory information. The goal is to foster timely and effective project management, early collaboration, and provide information to the state and federal agencies for decision making on the Topock Remediation Project.

CTF Focus:

The CTF will focus on:

- Improving existing and developing new processes and tools to assist in Topock remediation project stakeholders' understanding of project technical materials, studies, reports and regulatory decision-making documents. These processes and tools will present information in the most simple, clear and transparent way possible;

- Providing a sound platform for stakeholders to be informed about all project activities (past, current and future) within the context of the State and Federal regulatory processes; and

- Enhancing upward communication about project plans and activities to leadership in order that they may provide meaningful input to aid the State and Federal agencies in making sound decisions about project direction.

Direction:

The CTF will communicate progress to the Topock Leadership Partnership and the CWG, and will integrate feedback and direction from these groups into future process improvement efforts.

TOPOCK CLEARINGHOUSE TASK FORCE

Task Force Members	Facilitation and Technical Support
Karen Baker, DTSC Yolanda Garza, DTSC Pam Innis, DOI Kim Liebhauser, BLM Bart Koch, MWD Eddie Rigdon, MWD Nora McDowell, Fort Mojave Indian Tribe Dawn Hubbs, Hualapai Loretta Jackson-Kelly, Hualapai Jill McCormick, Cocopah Edgar Castillo, Cocopah Thomas Pradetto, Chemehuevi Steven Escobar, Chemehuevi Ginger Scott, CRIT Wilene Fisher-Holt, CRIT Doug Bonamici, CRIT Leo Leonhart, representing FMIT Sheryl Bilbrey, PG&E Yvonne Meeks, PG&E Glenn Caruso, PG&E	Christina Hong, CH2M Hill Lisa Micheletti Cope, ARCADIS Christa Marting, ETIC Win Wright, TRC Ed Moser, Keadjian Lisa Kellogg, ARCADIS

Topock Environmental Investigation and Cleanup

Fact Sheets

For fact sheets produced before June 2010, please visit www.dtsc.topock.

Department of Toxic Substances Control

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances through the restoration of contaminated resources, enforcement, regulation and pollution prevention.

State of California

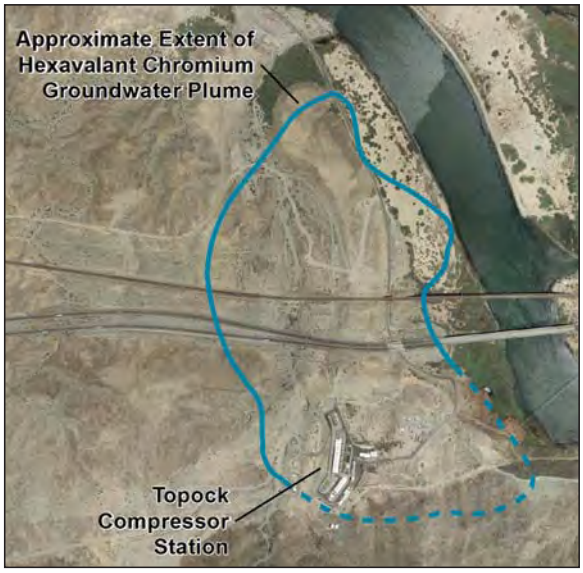
California Environmental Protection Agency

FACT SHEET – January 2012

PG&E Topock Environmental Investigation Update

Introduction

The California **Department of Toxic Substances Control (DTSC)** is the lead state agency overseeing the soil and **groundwater** investigation and cleanup (also known as **remediation**) at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) and adjacent land, collectively known as the Topock Site (Site) in San Bernardino County, California.



Map of Topock project site and approximate affected groundwater plume boundary

Topock site location map showing the compressor station and surrounding communities

Site Background and History

The Station is located in eastern San Bernardino County, California. It is located approximately 12 miles southeast of Needles, California, south of Interstate 40.

In 1951, the Station began compressing natural gas for transportation through pipelines to PG&E's service area in central and northern California. As natural gas is compressed, its temperature increases and the compressed gas must be cooled. From 1951 to 1985, PG&E added chromium to the water used in the cooling towers and other equipment to prevent corrosion of the cooling tower equipment. During parts of those years, cooling tower wastewater containing **hexavalent chromium** was discharged into a natural wash adjacent to the Station. Over time, the hexavalent chromium seeped into the groundwater and created a plume that extends from below the Station towards the Colorado River. Based on results from periodic testing of the river water, the hexavalent chromium plume is not impacting the quality of the river water.

In 1996, PG&E signed an agreement with DTSC to conduct investigations to identify and clean up past environmental contamination. In 2005, PG&E signed a similar agreement with the United States **Department of the Interior (DOI)** as the federal

Words in **bold** *appear in the glossary on Page 4 of the fact sheet.*

lead agency to protect lands owned by the federal government. Environmental investigations since this time have shown groundwater at the site contains elevated levels of chemicals, including **total chromium**, hexavalent chromium, **molybdenum**, **selenium**, and **nitrates**.

Groundwater Remedy Adopted

DTSC selected a final groundwater remedy approach for the site and certified the Topock **Environmental Impact Report (EIR)** on January 31, 2011. The selected remedy involves **in-situ treatment** with freshwater flushing. The concept of the remedy is to install injection and extraction wells along a road approximately 600 feet west of the Colorado River. This water stimulates the growth of harmless, but helpful, naturally occurring bacteria which then create geochemical conditions that remove hexavalent chromium from groundwater by converting it to non-soluble **trivalent chromium**. Extraction wells near the river act as a barrier to prevent contamination from reaching the river. Additional injection wells located around the plume inject fresh water and groundwater, removed from locations near the river, to push the plume toward the treatment zone. DTSC identified mitigation measures in the EIR to minimize the potential environmental impacts associated with the remedy during its construction, operation and maintenance. PG&E will implement these measures as required by the EIR as part of the remedy.

Groundwater Remedy Implementation Timeline

Groundwater Remedy Design

Efforts are currently underway on the design of the approved groundwater remedy. PG&E anticipates the design to be completed by November 2012. After DTSC and DOI approve the design, construction and start–up of the remedy will occur. Operation and maintenance of the groundwater remedy will continue until the cleanup goals are achieved. PG&E estimates cleanup will be complete in approximately 30 years.

Focused Groundwater Evaluation

Groundwater investigation at the Site revealed contamination under the Station and in an adjacent area called East Ravine. Additional data is being collected in these areas to assist in the design of the remedy. Throughout 2011, PG&E installed 11 new wells in these areas and collected monthly groundwater samples during the ongoing groundwater investigation. This additional information will be used to refine the **groundwater conceptual model**, or the understanding of groundwater conditions, in the vicinity of the East Ravine/ Station and will be incorporated in the Site-wide **Groundwater Monitoring Program**.

Well drilling in the East Ravine Area

Soil Investigation is Being Planned

PG&E is working with DTSC and DOI in planning and preparing a soil investigations **work plan**. The soil work plan will guide the field work in gathering data to assess any potential adverse impacts to the land that may have resulted from PG&E's historical operations. The work plan will investigate:

- Nine areas outside the Station which may have had historical activities
- Twenty five areas inside the Station
- Perimeter adjacent to the Station
- Onsite storm drains and their offsite outfalls

It is anticipated that the soil work plan will be approved by Summer 2012. After the completion

Site location map showing the PG&E Topock Compressor Station and East Ravine Area

of field work, PG&E will use the collected data to evaluate and recommend a cleanup action, if necessary. All the soil investigation data will be presented in the soil work plan in Summer 2012.

Community Outreach

Community outreach continues to remain an integral and interactive part of the project. DTSC actively engages with stakeholders to obtain input and share information with tribes, communities, individuals and groups. In December 2011, DTSC convened a meeting to provide a project update for the Golden Shores Community and listen to community concerns. DTSC also continues to provide periodic updates and convene meetings with stakeholders including agencies, tribal leadership and representatives. As part of our outreach, we are working on updates to our community outreach strategy to be outlined in a Community Outreach Plan.

This Community Outreach Plan will be a revision of the June 9, 1998 Public Participation Plan, which was updated in February 2007 and appended in July 2009. The current plan can be found on the project website at www.dtsc-topock.com or at any of the information repositories listed on page 5 of this fact sheet. This plan uses a variety of communication tools to share information and to gain input from the community including surveys, fact sheets, meetings, written and electronic documents. We anticipate completing the Community Outreach Plan by September 2012.

The purpose of the Community Outreach Plan is to keep the community informed in a timely fashion, to formally document community perspectives regarding the environmental investigation and remediation at the Station, and to identify specific community outreach activities to be conducted to ensure community involvement in the agency decision-making process.

Part of the Community Outreach process is conducting a community survey, which is included with this fact sheet. There are two options for completing the survey: you can log on to www.dtsc-topock.com/survey to complete the survey online or you can fill out and return the enclosed hard copy by mail.

By completing this survey, you will share with us your knowledge of the investigation and remediation activities at the Station, your perspectives, your level of participation, and how best to keep you updated about Site activities. Your response within 30 days will help us to improve our process and interactions with you and the community. If you have any questions regarding the completion of this survey please contact Mona Bontty. Please see the “DTSC Welcomes Your Feedback” section of this fact sheet on page 5.

Karen Baker, Chief of DTSC’s Office of Geology, presents a project update at the Golden Shores Community Meeting held December 12, 2011.

Glossary of Terms

Department of the Interior (DOI): The principal conservation agency of the United States, responsible for stewardship of land, water, recreation, Native American lands and needs, and energy needs. The department is composed of member bureaus such as the Bureaus of Indian Affairs, Land Management, and Reclamation, among others.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency in charge of the regulation of hazardous waste from generation to final disposal, DTSC oversees the investigation and cleanup of hazardous waste sites.

Environmental Impact Report (EIR): A detailed review of a proposed project, its potential adverse impacts on the environment, measures that may avoid or reduce those impacts, and alternatives to the proposed project.

Final Design: The final design for the groundwater remedy.

Groundwater: Water beneath the Earth's surface that flows through soil and rock openings (aquifers).

Groundwater Conceptual Model: A description of how groundwater flows throughout the site and surrounding areas that has been developed using a combination of regional and site-specific data, as well as expert judgment based on site conditions.

Groundwater Monitoring Program: A network of groundwater wells installed to periodically test for different chemicals to assess the long-term site conditions.

Hexavalent Chromium: A form of chromium. Chromium is a metal naturally found in rocks, soil and the tissue of plants and animals. Hexavalent chromium is used in industrial products and processes and is a known carcinogen when inhaled (i.e., through breathing).

In-situ Treatment: Treatment of the contaminated groundwater in place (below the ground surface).

Molybdenum: A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

Nitrate: Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds.

Plume: A body of contaminated groundwater. The movement of a groundwater plume can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

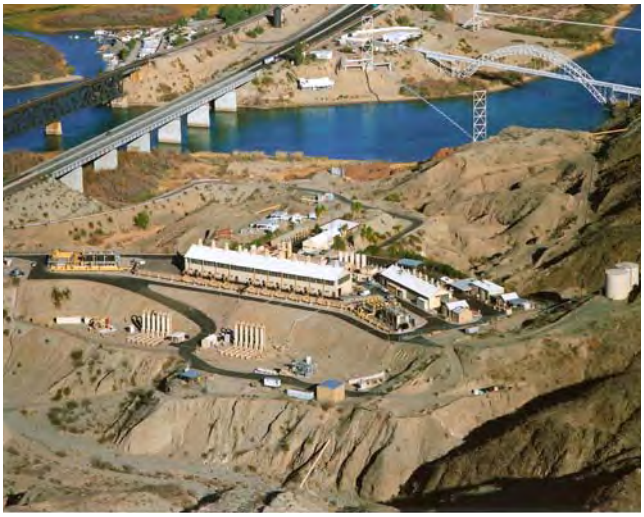
Remediation: Actions taken to remove or contain a toxic spill or a release of hazardous substances at a site.

Selenium: A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

Total Chromium: The additive of concentrations from all forms of chromium, mainly comprising hexavalent and trivalent forms. The California drinking water standard for total chromium is 50 micrograms per liter (or parts per billion), while the Federal standard is 100 micrograms per liter.

Trivalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Trivalent chromium is considered an essential nutrient and is relatively harmless. It does not dissolve in groundwater and tends to bind to soil; thus it does not travel readily in the environment.

Work Plan: A document that presents key elements of the approach for a proposed action. These may include health and safety, waste management, data collection, construction activities and methods, the schedule, approvals, a reporting plan and reporting schedule.



Topock Compressor Station and Surrounding Area

Where to find Project Information

Project reports, fact sheets, and other project documents can be found at the Information Repositories listed below:

On the Internet
www.dtsc-topock.com
www.dtsc.ca.gov

Needles Branch Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton, 760.326.9255
11am – 7pm, Monday through Wednesday
10am – 6pm, Thursday
Closed, Friday
9am – 5pm, Saturday

Golden Shores/Topock Station Library
13136 Golden Shores Parkway
Topock, AZ 86436
Contact: Kim Stoddard, 928.768.2235
9am – 1pm, Tuesday, Thursday, Saturday
2pm – 5pm, Wednesday

Chemehuevi Indian Reservation Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Tom Pradetto, 760.858.1140
8am – 4pm, Monday – Friday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Cindy Amador, 928.453.0718
9am – 6pm, Monday and Wednesday
9am – 8pm, Tuesday and Thursday
9am – 5pm, Friday and Saturday

Colorado River Indian Tribes Library
2nd Avenue and Mohave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate, 928.669.1332
8am – noon, 1pm – 5pm, Monday – Friday

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith, 928.669.2622
9am – 7pm, Monday – Thursday

California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson, 714.484.5337
9 am–noon, 1 pm–4 pm, Monday–Friday
Please call for an appointment.

Alternate Format: *All documents made available to the public by DTSC can be made available in an alternative format (Braille, large format print, etc.) or in another language as appropriate, in accordance with state and federal law. Please contact Mona Bontty for assistance.*

DTSC Welcomes Your Feedback

If you have questions, comments, or would like to be added to the mailing list for the Topock Site, please contact the DTSC representatives listed below.

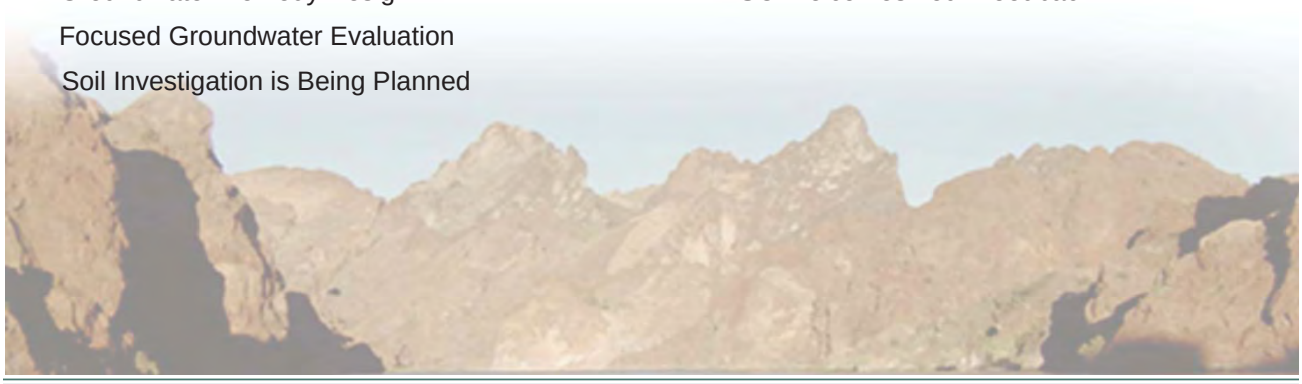
Aaron Yue
DTSC Project Manager
5796 Corporate Avenue
Cypress, CA 90630
714.484.5439
AYue@dtsc.ca.gov

Mona Bontty
DTSC Community Outreach Supervisor
5796 Corporate Avenue
Cypress, CA 90630
714.816.1978 or Toll Free: 866.495.5651 (press 5 and 1)
MBontty@dtsc.ca.gov

For Media Inquiries Contact
Jeanne Garcia, DTSC Public Information Officer
9211 Oakdale Avenue
Chatsworth, CA 91311
818.717.6573
JGarcia1@dtsc.ca.gov

Notice to Hearing-Impaired Individuals
You can obtain additional information about the Topock Compressor Station Site by using the California State Relay Service at 888.877.5378 (TDD). Ask them to contact Mona Bontty at 714.816.1978.

In This Fact Sheet



Mona Bontty
DTSC Community Outreach Supervisor
5796 Corporate Avenue,
Cypress, CA 90630-4732

Department of Toxic Substances Control

The Mission of the Department of Toxic Substances Control is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

State of California

California Environmental Protection Agency

FACT SHEET – June 2010

PG&E Topock Project Update

Public Comments Requested on Proposed Remedy and Draft Environmental Impact Report Now Available for Public Review

The State of **California Department of Toxic Substances Control (DTSC)** is the lead state agency that is overseeing the investigation and cleanup (also known as **remediation**) of the contaminated **groundwater** at and in the vicinity of the Pacific Gas & Electric (PG&E) Topock Compressor Station in San Bernardino County, California. The groundwater was contaminated by historical releases of chemicals, including total chromium, **hexavalent chromium**, **molybdenum**, **selenium**, and **nitrates**. DTSC reviewed nine clean-up options considered in the Final Groundwater **Corrective Measures Study/Feasibility Study (CMS/FS)** Report prepared by PG&E. DTSC is proposing In Situ Treatment with Freshwater Flushing as the cleanup action that best balances the ability to achieve cleanup goals consistent with the remedy selection criteria, while minimizing the potential impacts to the environment during implementation.

Topock Compressor Station

The **Statement of Basis** is a document that describes the rationale for the preferred groundwater remedy and is prepared by DTSC in accordance with the administrative process of the **Resource Conservation and Recovery Act**. The proposed **final remedy** and alternatives are evaluated in the draft **Environmental Impact Report (EIR)** prepared by DTSC under the requirements of the **California Environmental Quality Act (CEQA).** The draft EIR analyzes the expected environmental impacts of the proposed final remedy. The EIR also identifies actions (called mitigation measures) which may be taken to avoid or reduce environmental impacts. Simultaneously, the U.S. **Department of the Interior (DOI)** is also releasing a **Proposed Plan** identifying In Situ Treatment with Freshwater Flushing as DOI's preferred cleanup action among the nine options considered in accordance with the requirements of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** process. These documents, along with related project materials and references, are available for public review and comment from June 4 to July 19, 2010.

Project Background

The Compressor Station is located 12 miles southeast of Needles, California and 1,500 feet west of the Colorado River. In 1951, the Compressor Station began compressing natural gas for transportation through pipelines to PG&E's service territory in Central and Northern California. From 1951

PUBLIC COMMENT PERIOD

June 4, 2010 - July 19, 2010

Comments may be submitted to DTSC and/or DOI during the public comment period in writing, by mail, email, fax, or in person at the public hearings. Written comments must be postmarked, emailed, or faxed no later than July 19, 2010.

Aaron Yue
Project Manager, DTSC

5796 Corporate Avenue
Cypress, CA 90630

Fax: (714) 484.5411
Email: ayue@dtsc.ca.gov

Pamela S. Innis
Remedial Project Manager, DOI

Denver Federal Center, Bldg 67
P.O. Box 25007, MS D108
Denver, CO 80225-0007

Fax: (303) 445-6320
Email: Pamela_Innis@ios.doi.gov

Words in **bold** appear in the Glossary of Terms on page 3

to 1985, PG&E added chromium to the water used in the cooling towers and other equipment to control corrosion of the cooling tower equipment.

During parts of those years, cooling tower wastewater containing hexavalent chromium was discharged directly to the ground surface. Over time, the hexavalent chromium seeped into the groundwater and created a **plume**, which is a body of contaminated groundwater that extends from below the Compressor Station to beneath the Colorado River.

In 1985, PG&E discontinued the use of hexavalent chromium. In 1996, PG&E signed an agreement with DTSC to conduct environmental investigations to identify and cleanup past contamination to the environment. In 2004, PG&E signed a similar agreement with DOI.

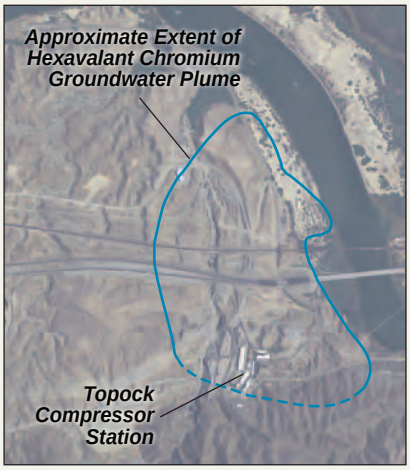
Overview of Proposed Final Remedy

The objective of the proposed final remedy is to cleanup groundwater and ensure protection of the Colorado River. The proposed final remedy involves flushing the plume below ground with clean water through a treatment area made up of a series of **injection** and **extraction wells**, known as an **in-situ reactive zone** or treatment zone. The treatment zone would be made by adding nutrients, known as reductants, to stimulate the growth of harmless, but helpful, naturally occurring bacteria. The growth cycle of these helpful bacteria then creates chemical conditions that convert hexavalent chromium to the less harmful and less **soluble** trivalent chromium, thereby removing hexavalent chromium from groundwater. The plume would be pushed through the treatment zone by injecting clean freshwater at the western (or back end) of the plume, while the groundwater would also be pulled through the treatment zone using extraction wells located near the Colorado River. After treatment is complete, bacteria levels would return to normal (pretreatment) conditions.

The extraction wells installed near the Colorado River would prevent the plume from reaching the river. Additionally, extraction wells would be installed in the southeast edge of the plume to extract contaminated water that is not able to flow through the treatment zone. The contaminated water extracted from this area would be transported by pipelines and recirculated through the treatment zone, or injected along the western edge of the plume along with nutrient amended water to treat the contamination.

The proposed remedy would include the following:

- Use of roads, pipelines, and utility connections to power the remediation system and provide access to the wells and related remediation facilities.
- Use of water for freshwater injection from one of three sources: freshwater wells in California, freshwater wells in Arizona, or directly from the Colorado River.
- Four phases: construction of new facilities (estimated 3 years), operation and maintenance of the remediation system (estimated 29 years, but up to 110 years), long-term monitoring (estimated 10 years), and decommissioning of facilities following successful remediation (estimated 2 years).
- **Monitored natural attenuation** as a potential long-term component to address any remaining contamination that may be present in portions of the groundwater after treatment.
- The **Interim Measures** currently operating would be decommissioned once the final remedy is functioning adequately.



The proposed project consists of five main elements:

1. A treatment zone consisting of a series of wells along a portion of National Trails Highway where nutrients would be added to stimulate the growth of helpful bacteria.
2. Extraction wells near the Colorado River that would provide a barrier to protect the river. The extracted groundwater would be pumped to the western end of the plume where additional nutrients would be added.
3. Injection of clean freshwater west of the plume to accelerate groundwater flow towards the treatment zone.
4. Restrictions on groundwater use (known as **institutional controls**) to protect human health and the environment.
5. Continued monitoring of the plume.

Glossary of Terms

***California Environmental Quality Act (CEQA)*:** Enacted in 1970 to provide long-term environmental protection, this law requires that governmental decision makers and public agencies study the environmental effects of proposed activities and that significant adverse effects be avoided or reduced where feasible.

***Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*:** A federal law, commonly known as "Superfund", enacted in 1980 by Congress to provide broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

***Corrective Measure Study/Feasibility Study (CMS/FS)*:** A study conducted by the facility owner/operator, in this case PG&E, to identify and evaluate alternative cleanup options to address contamination at a project site.

***Cumulative Impact*:** The total effect on a natural resource, ecosystem, or human community due to past, present, and future activities or actions of federal, non-federal, public, and private entities. Cumulative impacts may also include the effects of natural processes and events. Accordingly, there may be different cumulative impacts on different environmental resources.

***Department of the Interior (DOI)*:** The principal conservation agency of the United States, responsible for stewardship of land, water, recreation, Native American lands and needs, and energy needs. The department is composed of member bureaus such as the Fish and Wildlife Service, Bureau of Land Management, and Bureau Reclamation, among others.

***Department of Toxic Substances Control (DTSC)*:** A department within the California Environmental Protection Agency in charge of regulating hazardous waste from generation to final disposal and overseeing the investigation and cleanup of hazardous waste sites.

***Environmental Impact Report (EIR)*:** A detailed review of a proposed project, in this case the proposed remedy, its potential adverse impacts on the environment, measures that may avoid or reduce those impacts, and alternatives to the proposed project.

***Extraction Wells*:** Wells that are used primarily to remove contaminated groundwater. Water level measurements and water samples can also be collected from extraction wells.

***Final Remedy*:** The final cleanup action proposed for managing contaminants at a project site.

***Groundwater*:** Water beneath the Earth's surface that flows through soil and rock openings (aquifers).

***Growth Inducement*:** The effects a proposed project could have on economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

***Hexavalent Chromium*:** Known as Cr(VI), a form of chromium, which is a metal naturally found in rocks, soil, and the tissue of plants and animals. Hexavalent chromium is also used in industrial products and processes and is a known carcinogen when inhaled (i.e., through breathing).

***Injection wells*:** Wells used to introduce a substance to groundwater or to return water to the aquifer.

***In-situ Reactive Zone* :** A series of injection and extraction wells that create a treatment zone for the contaminated groundwater.

***Institutional Controls*:** Non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

***Interim Measures*:** Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

***Molybdenum*:** A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

***Monitored Natural Attenuation*:** Monitoring of the naturally occurring degradation and dilution properties of the groundwater system.

***Nitrates*:** Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds. Once taken into the body, nitrates are converted into nitrites.

***Plume*:** A body of contaminated groundwater. The movement of a plume in groundwater can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

***Proposed Plan*:** A CERCLA document, made available for public comment, which proposes a preferred alternative for a site cleanup.

***Remediation*:** Actions taken to remove or contain a toxic spill or a release of hazardous substances at a site.

***Resource Conservation and Recovery Act*:** A federal law that establishes a regulatory system to track and provide safe procedures for management of hazardous wastes from the time of generation to final disposal.

***Selenium*:** A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

***Soluble*:** Capable of being dissolved in some solvent (usually water).

***Statement of Basis*:** A document that describes the basis for the proposed remedy and cleanup standards.

Where to Find the Draft EIR and other Project Information

Project Reports, fact sheets, and other project documents can be found in the Information Repositories listed below:

On the Internet:
www.dtsc-topock.com
www.dtsc.ca.gov

Needles Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton, 760.326.9255
10 a.m.–6 p.m., Monday and Tuesday
10 a.m.–4 p.m., Wednesday
10 a.m.–5 p.m., Thursday through Saturday

Chemehuevi Indian Reservation Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Gilbert Parra, 760.858.1140
8:00 a.m.–4 p.m., Monday–Friday

Golden Shores/Topock Station Library
13136 S. Golden Shores Parkway
Topock, AZ 86436
Contact: Kim Stoddard, 928.768.2235
8 a.m.–2 p.m., Tuesday and Thursday
3 p.m.–6 p.m., Wednesday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Audrey LaCommare, 928.453.0718
9 a.m.–6 p.m., Monday and Wednesday
9 a.m.–8 p.m., Tuesday and Thursday
9 a.m.–5 p.m., Friday and Saturday

Colorado River Indian Tribes Library
Second Avenue and Mohave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate 928.669.1285
8 a.m.–noon, 1 p.m.–5 p.m., Monday–Friday

Parker Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith, 928.669.2622
9 a.m.–7 p.m., Monday–Friday
9 a.m.–2 p.m., Saturday

California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson, 714.484.5337
9 a.m.–noon, 1 p.m.–4 p.m., Monday–Thursday
Please call for an appointment.

DTSC Welcomes Your Feedback

For more information about the draft Statement of Basis or draft EIR and other project documents, or to be added to the mailing list please contact the following DTSC representatives:

Aaron Yue
DTSC Project Manager
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5439
Fax (714) 484-5411
ayue@dtsc.ca.gov

Christina Fu
DTSC Outreach Specialist
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5488
(866) 495-5651 (press 4 twice)
TTY/TDD/STS users dial 711
(for the California Relay Service)
cfu@dtsc.ca.gov

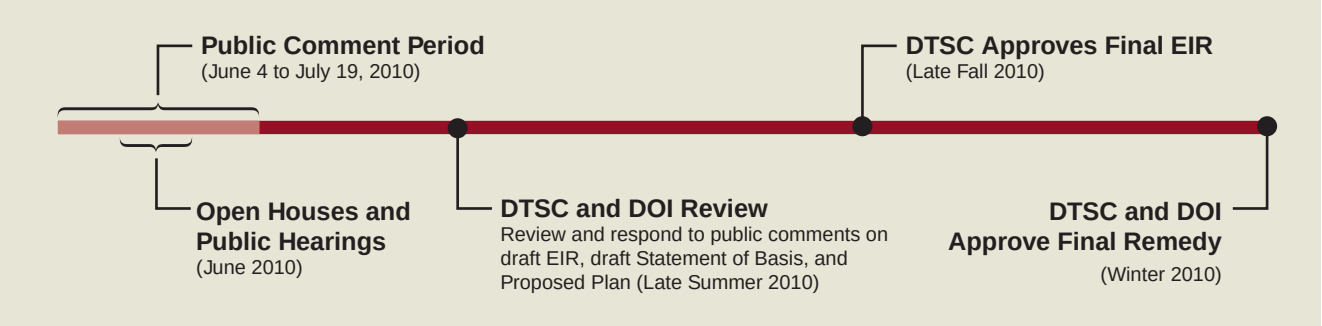
For media inquiries, please call:

Jeanne Garcia
DTSC Public Information Officer
9211 Oakdale Avenue
Chatsworth, CA 91311
(818) 717-6573
jgarcia1@dtsc.ca.gov

For more information about the Proposed Plan, please contact DOI:

Pamela S. Innis
U.S. Department of the Interior
Denver Federal Center, Bldg 67
P.O. Box 25007, MS D108
Denver, CO 80225-0007
(303) 445-2502
Fax (303) 445-6320
Pamela_Innis@ios.doi.gov

Public Review and Approval Process



Contents of the Draft Environmental Impact Report

In accordance with CEQA, a draft EIR has been prepared to evaluate the potential environmental impacts of the proposed final remedy and alternatives. The draft EIR is organized to include a summary, introduction, project description, and an analysis of environmental resource areas that could be affected by project phases, as follows:

- aesthetics, or visual quality
- air quality
- biological resources
- cultural resources
- geology & soils
- hazardous materials
- hydrology & water quality
- land use & planning
- noise
- transportation
- utilities & service systems
- water supply

The draft EIR also addresses other topics that are required by CEQA such as **growth inducement**, **cumulative impacts**, and alternatives to the proposed project.

Public Comment Opportunities

Members of the public and interested parties are encouraged to submit comments on the draft Statement of Basis, draft EIR, and Proposed Plan during the 45-day public comment period from June 4, 2010 to July 19, 2010. DTSC and DOI will host four public meetings in different locations during the public comment period. These meetings will consist of an open house followed by a public hearing. During the open house, information about the draft Statement of Basis, draft EIR, and Proposed Plan will be provided and the project documents will be available for viewing.

During the public hearing, members of the public will have the opportunity to provide verbal or written comments. All individuals and groups who are interested in this project are encouraged to attend. If you are unable to attend, written comments can be submitted using the comment card provided during the public comment period. However, the use of the comment card is not required and all forms of written comments will be accepted.

Next Steps

Following the close of the public comment period on July 19, 2010, DTSC and DOI will review all comments received and prepare a response to comments document and final EIR. However, only DTSC will be responding to comments on the draft EIR. The final remedy decision and the response to comments document will be made available as part of the remedy selection process. The proposed remedy may be modified as applicable based on comments received. If the proposed remedy is approved, DTSC and DOI will jointly oversee the implementation of the final remedy.

Public Open Houses and Hearings on Proposed Remedy

DTSC & DOI invites you to attend one of the four open house and public hearing sessions to be held on the following dates and locations during the 45-day public comment period. Oral and written comments will be accepted at the hearing immediately following the open house.

Tuesday, June 22, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Parker Community/Senior Center
1115 12th Street
Parker, Arizona 85344

Wednesday, June 23, 2010
Open House: 5:30–7:00 p.m.
Public Hearing: 7:00–8:30 p.m.

Lake Havasu City Aquatic Center, Relics and Rods Hall
100 Park Avenue
Lake Havasu City, AZ 86403

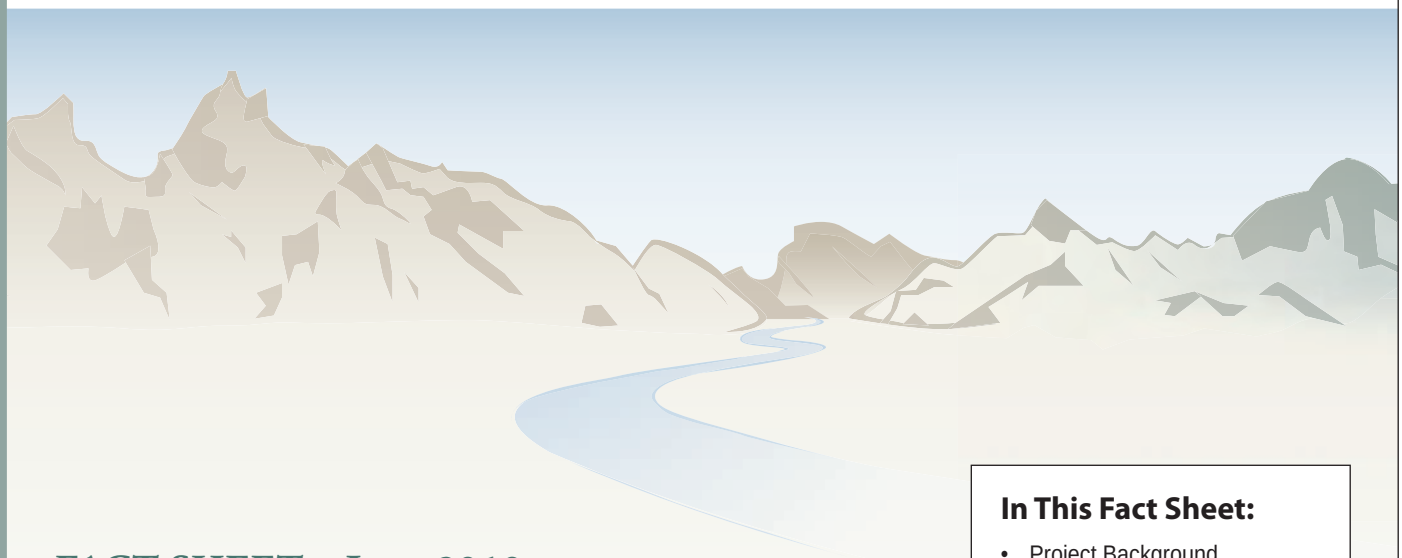
Tuesday, June 29, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Needles High School, Auditorium
1600 Washington Street
Needles, CA 92363

Wednesday, June 30, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Topock Elementary School, Auditorium
5083 East Tule Drive
Topock, AZ 86436

If you require an accommodation due to a disability or need a translator/interpreter for this event please call Christina Fu at (714) 484-5488 or toll free (866) 495-5651 no later than 10 business days before the scheduled event. In addition, you may contact Ms. Fu to receive this or related publications in an alternate format or language. TTY/TDD Speech to Speech users may dial 711.



FACT SHEET – June 2010

PG&E Topock Project Update

Public Comments Requested on Proposed Remedy and Draft Environmental Impact Report Now Available for Public Review

MARK YOUR CALENDAR for Upcoming Open Houses and Public Hearings

VIEW DRAFT DOCUMENTS at www.dtsc-topock.com

In This Fact Sheet:

Topock Remediation Review

Groundwater **Update**

Intermediate Groundwater Design Under Review

The California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior (DOI), in coordination with tribal governments, Metropolitan Water District of Southern California, Colorado River Board and Pacific Gas and Electric Company (PG&E), are working to resolve more than 800 comments received on the Topock groundwater remedy Basis of Design Report/Intermediate (60%) Design, which was submitted by PG&E on April 5, 2013. The 60% Design document builds upon the Preliminary (30%) Design and has a greater level of detail about key design elements.

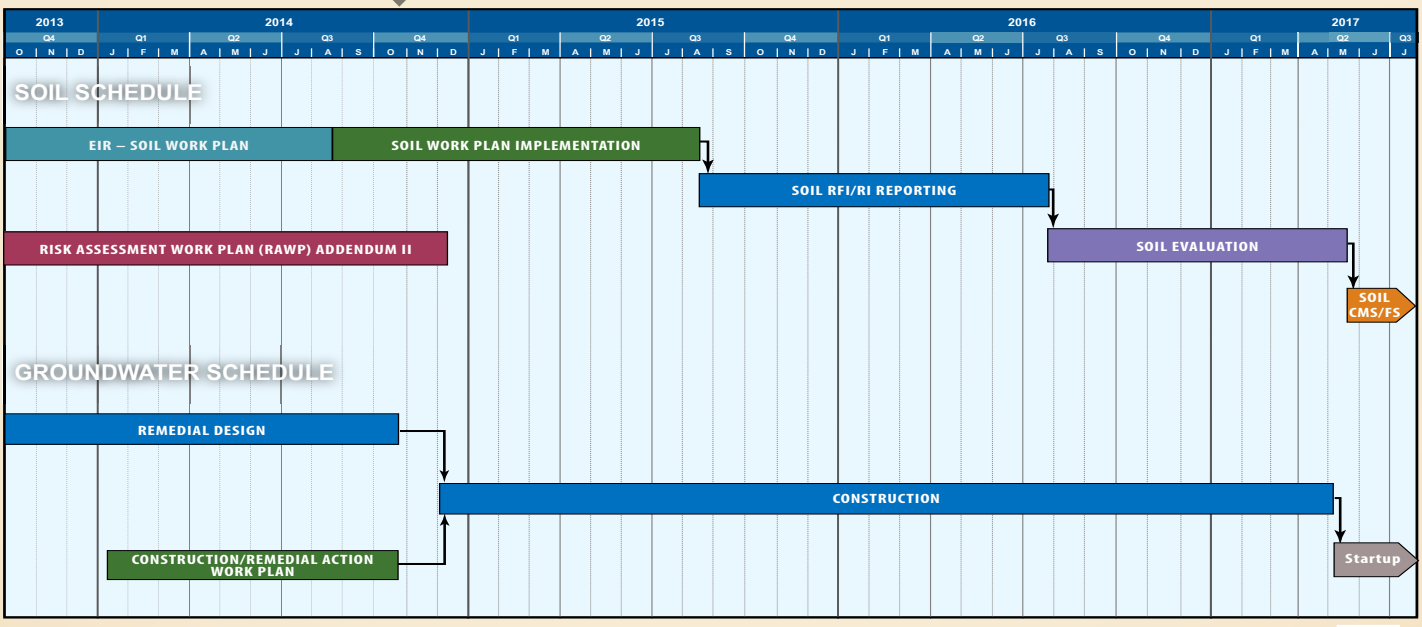
The comments are being resolved through a series of face-to-face and web-based meetings among Agencies, Tribes and stakeholders. After these collaborative meetings, DTSC and DOI will provide direction to PG&E for completion of the Pre-Final (90%) Design, currently targeted for June 2014.

Freshwater Source Evaluation Underway

The source of freshwater supply for the remedy is one of the key 90% Design elements. DTSC and DOI approved PG&E's approach for the evaluation of alternative freshwater sources on September 4, 2013. Field work is underway and is scheduled for completion in early 2014. In addition, on November 20, 2013, the California State Water Resources Control Board concluded that, subject to limitations, groundwater from an Arizona well, despite temporarily exceeding the water quality objective for arsenic, may be injected at the Topock Site to ensure timely and effective implementation of the remedy.

During a November 4, 2013 teleconference, the Agencies, Tribes, PG&E and stakeholders discussed preliminary data from the field work and next steps. Another web-based meeting is planned for January 29, 2014 to discuss well testing data for future freshwater supply well location in the 90% Design.

Soil/Groundwater **Schedule**



Technical Review Committee **Spotlight**

The Technical Review Committee (TRC) was established to convene and retain a multidisciplinary panel of independent scientific and engineering experts. The TRC is made up of multidisciplinary experts who will review project-related documents, participate in project-related meetings and advise interested tribal members on technical matters relating to the final design and remedy. Dr. Robert Prucha is featured in the fourth of this spotlight series.

Dr. Robert Prucha, P.E.

Dr. Robert Prucha, P.E., has over 25 years of experience as a Hydrogeologist and Water Resources Engineer. His work focuses on the characterization and numerical analysis of fluid flow and heat/contaminant transport within groundwater and other natural systems. As a professional civil engineer, Dr. Prucha works on a wide range of water resources and environmental projects throughout the U.S. and internationally, collaborating with teams of consultants, regulators, concerned citizens, attorneys and others.

His expertise is in developing and applying large, complex numerical flow and transport models for mining sites, oil refining/distribution facilities, municipal landfills, and nuclear, chemical and manufacturing plants. Dr. Prucha has also contributed to the remedial investigation/feasibility study (RI/FS) process on several U.S. EPA Superfund sites in California and elsewhere. He is also proficient in the use of ArcGIS, CAD and several other advanced geologic modeling/graphical/animation tools.

Soils Investigation **Update**

PG&E submitted the Soils RCRA Facility Investigation/Remedial Investigation (RFI/RI) Work Plan in January 2013. The purpose of the work plan is to define potential contaminants in soils at the site. In compliance with the California Environmental Quality Act (CEQA), DTSC is evaluating potential environmental impacts associated with the proposed soil sampling activities and will prepare an Environmental Impact Report (EIR) for the proposed activities. DTSC has met with representatives of interested Tribes for input to the visual evaluation and mitigation measures for the EIR. After the completion and certification of the EIR, with approval from agencies, PG&E will implement the investigation work within approximately one year (see the latest soil/groundwater activities schedule on page 1).

Project **Recap**

- **Following the finalization of the Cultural and Historic Properties Management Plan (CHPMP) by the Bureau of Land Management (BLM) in the first quarter of 2012, the Agencies, Tribes and stakeholders continue to meet every other month to discuss implementation of the plan.**
- **On November 20 and 21, 2013, DTSC performed the 2013 annual visit to all project information repositories to ensure all repositories are up to date and to identify any missing information. A report detailing updates made to the repositories during the visit (called the 2013 Annual Information Repository Visit Report) is expected to be completed in early 2014.**
- **Several of the mitigation measures specified by the Final Environmental Impact Report (FEIR) for Groundwater are in progress:**
  - The Third Quarter 2013 EIR Mitigation Measures Compliance Report was completed on October 31, 2013. The Fourth Quarter 2013 EIR Mitigation Measures Compliance Report will be completed on January 31, 2014.
  - PG&E and the Tribes continue to meet regarding Topock project activities (CUL-1a-8a). The purpose of the meetings is to collaborate on mitigation measures and planned and ongoing studies, measures that are being taken to mitigate project impacts and/or other project-related activities of interest.
  - The Cultural Impact Mitigation Program (CIMP) (CUL-1a-8) is under preparation. The CIMP will be submitted with the groundwater pre-final 90% design. PG&E is working with the Tribes on the CIMP via the following activities:
    - » *Meetings to discuss the content of various mitigation measures and the CIMP.*
    - » *The draft CIMP was provided to interested Tribes by PG&E for review on July 5, 2013, prior to submittal to DTSC. Tribal comments on the draft CIMP were received in October 2013.*
    - » *The draft plan for the decommissioning, removal and restoration of the IM-3 Facility was provided to the Tribes by PG&E on July 26, 2013 for review (and was included as Appendix B to the CIMP).*
- **Field surveys and site walks:**
  - Plant survey (for lycium and arrowweed) conducted December 16 – 17, 2013 in response to a comment from DOI on the 60% design.
  - Biological monitoring for the freshwater supply work occurred November 11 – 20, November 25 – 27 and December 2 – 12, 2013.
  - Annual monitoring for archaeological and historical sites occurred December 3 – 11, 2013.
  - Annual archaeological monitoring of the remaining identified sites within the groundwater remedy project area was conducted December 2 – 11, 2013.
  - Archaeological monitoring for the freshwater supply work occurred November 11 – 20 and November 25 – 27, 2013.
  - Biological survey to evaluate surface soil classification occurred November 4 – 5, 2013.
  - Archaeological monitoring of sites within the soils investigation area was conducted April 29 – May 13 and September 30 – October 3, 2013.
  - Biological pre-construction reconnaissance for the freshwater supply work occurred October 2, 2013.
- **Other field work:**
  - Continued groundwater and surface water monitoring.
  - Soil sampling and geophysical survey in Bat Cave Wash was conducted in April 2013, focused on an abandoned well named TCS Well No. 4.

UPCOMING TOPOCK **REPORTS**

January 15, 2014

- **Compliance Monitoring Program, Semiannual Groundwater Monitoring Report, Second Half 2013**
- **Fourth Quarter 2013 Monitoring Report, Interim Measure No. 3 Groundwater Treatment System**

January 31, 2014

- **Fourth Quarter 2013 EIR Mitigation Measures Compliance Report for the Final Groundwater Remedy**

March 15, 2014

- **Fourth Quarter 2013 and Annual Interim Measures Performance and Site-Wide Groundwater and Surface Water Monitoring Report**

April 15, 2014

- **First Quarter 2014 Monitoring Report, Interim Measure No. 3 Groundwater Treatment System**

April 30, 2014

- **First Quarter 2014 Interim Measures Performance and Site-Wide Groundwater and Surface Water Monitoring Report**
- **April 2014 (Target) Draft Soil Sampling EIR for Public Review**
- **2013 Annual Information Repository Visit Report**

June 2014 (Target)

- **Basis of Design Report/Pre-Final (90%) Design for the Final Groundwater Remedy**

TOPOCK
Remediation Review

The Topock Remediation Review is a quarterly technical update on the Topock Compressor Station cleanup project. It is published by the Topock Clearinghouse Task Force, a group of stakeholders comprised of state, regional and federal agencies; Native American Tribes; and PG&E representatives.

The Topock Remediation Review is dedicated to enhancing stakeholder understanding of technical and regulatory information, encouraging participation in decision making forums and fostering timely and effective project management and decisions for the Topock Compressor Station project final remedy. You may view past issues of the newsletter in the Document Library on the project's website (www.dtsc-topock.com). Navigate to the "Public Outreach" page and its "Other Outreach Documents" category.

FIRST QUARTER 2014 REGULARLY SCHEDULED MEETINGS

DATE	EVENT	LOCATION
January 14, 2014	CHPMP Meeting	BLM Lake Havasu Field Office, Lake Havasu City, AZ
January 23, 2014	Technical Work Group Meeting	Web conference
	Mitigation Measures Meeting	Bullhead Area Chamber of Commerce, Bullhead City, AZ
January 29, 2014	Technical Work Group Meeting	Web conference
February 11, 2014	Technical Work Group Meeting	Laughlin, NV
February 12, 2014	Consultative Work Group Meeting	Laughlin, NV
February 13, 2014	Clearinghouse Task Force Meeting	Laughlin, NV
March 5, 2014	CHPMP Meeting	BLM Lake Havasu Field Office, Lake Havasu City, AZ
March 18, 2014	Clearinghouse Task Force Meeting	CH2M HILL Office, Henderson, NV
March 19, 2014	Technical Work Group Meeting	Hilton Garden Inn, Henderson, NV

Contact **Information**

Visit DTSC's Topock Project Website: www.dtsc-topock.com. Questions regarding this newsletter or the Topock Project should be directed to:

Aaron Yue
DTSC Project Manager
Phone: (714) 484-5439
E-mail: aaron.yue@dtsc.ca.gov

Pamela Innis
DOI Remedial Project Manager
Phone: (303) 445-2502
E-mail: pamela_innis@ios.doi.gov

TOPOCK REMEDIATION REVIEW

First Quarter 2013 Newsletter

Update on Groundwater Remedy Design

On April 5, 2013, Pacific Gas and Electric Company (PG&E) submitted the Intermediate (60%) Design for the Topock groundwater remedy, including the Draft Operations and Maintenance Manual, for agency review and comment. In compliance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) and as discussed at the January 16, 2013, Consultative Working Group (CWG) and the January 17, 2013 Technical Working Group (TWG) meetings, PG&E is including the conceptual design of a pre-treatment system to remove naturally-occurring levels of arsenic and fluoride from the Arizona groundwater prior to injection for the purpose of the remedy.

It is proposed that the primary source of the freshwater for injection will be water from the Havasu National Wildlife Refuge well (HNWR-1), and the secondary source will be water from PG&E Topock Compressor Station (TCS) source wells (Topock-2 and -3), both located in Arizona. The source discussion will be revisited after completion of the alternative freshwater source evaluation. The work plan for this evaluation was submitted to DTSC and the United States Department of the Interior on January 28, 2013, and is under review.

Concurrently, with the Regional Water Quality Control Board's (RWQCB's)consent, PG&E has continued discussions regarding the need for arsenic treatment with the State Water Resources Control Board (State Board). A decision from the State Board is pending.

Technical discussions with the TWG have been held in advance of the April submittal to facilitate stakeholders' review of key 60% design topics. At the February 20 TWG meeting, PG&E presented the draft Sampling and Monitoring Program and the updated modeling results since 30% design. At the March 20 TWG meeting, PG&E presented the draft Soil Management Plan and the Baseline Soil Sampling Plan, as well as the above ground versus underground piping topic. A site visit to review piping alignment and above ground structures/facilities proposed in the 60% design is planned for April 18, 2013. Stakeholder review and tribal consultation will occur concurrently with these activities and is anticipated to be complete in early June 2013. It is anticipated that the agencies will provide comments to PG&E in late June 2013 and comment resolution will occur through early October 2013.

Mark Your Calendar

Groundwater Design Schedule	
Intermediate (60%) Design	**Submit for Review/Comment** – April 5, 2013 **Comments Due** – June 6, 2013 **Response to Comments / Comments Resolution** Mid June to early October 2013
CEQA Evaluation for Freshwater Source	Anticipated Spring 2013
Intermediate (60%) Design Addendum	**Schedule will be determined after receipt of approval to implement the Alternative Freshwater Source Evaluation Work Plan**
Pre-Final (90%) Design	**Submit for Review/Comment** – April 2014 **Comments Due** – June 2014 **Response to Comments / Comments Resolution** July 2014 to August 2014
Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan	
Submitted for Agency Approval	January 16, 2013
Soil CEQA Review	November 2012 to Late 2013
Anticipated Agency Approval	Winter, 2013, concurrent with certification of the EIR
Recent Regularly Scheduled Meetings	
January 9, 2013	**Cultural and Historic Properties Management Plan (CHPMP)** Meeting, Lake Havasu, NV
January 15, 2013	**Clearinghouse Task Force (CTF),** Henderson, NV **Tribal Monthly Update (TMU),** Henderson, NV
January 16, 2013	**Consultative Work Group (CWG) Meeting, Hampton Inn,** Henderson, NV
January 17, 2013	**Technical Work Group (TWG) Meeting, Hampton Inn,** Henderson, NV
Feb 14-15, 2013	**Well Head Site Survey**
February 19, 2013	**CTF Meeting,** Henderson, NV **TMU Meeting,** Henderson, NV
February 20, 2013	**TWG Meeting,** Hilton Garden Inn, Henderson, NV
March 13, 2013	**CHPMP Meeting, BLM Lake Havasu Field Office,** Lake Havasu City, AZ
March 19, 2013	**CTF Meeting,** Henderson, NV **TMU Meeting,** Henderson, NV
March 20, 2013	**TWG Meeting,** Hilton Garden Inn, Henderson, NV
Additional Meetings and Events	
March 12, 2013	**Special Hualapai Council Meeting,** Hualapai Tribal Council Chambers
March 13, 2013	**Freshwater Implementation Plan meeting, DOI/DTSC/Tribes**
March 14, 2013	**Topock Site Walk – DOI/DTSC/Tribes/PG&E**
April 1, 2013	**MW-38 Repair/Old Well Survey Kickoff Meeting**
April 2, 2013	**Archeological Site Survey Maze B&C Areas**

Note: Dates subject to change

Topock 2013 Community Outreach Plan

Hardcopy and electronic version of the updated 2013 Community Outreach Plan (COP) were distributed to the community in January 2013. The electronic version of the COP is available on the Topock website (*www.dtsc-topock.com*) in the Document Library under Community Outreach |Community Outreach Plans.

The COP presents the general strategy and specific outreach activities that DTSC will conduct to facilitate community and stakeholder involvement regarding the environmental cleanup of the PG&E Topock Compressor Station. The COP also summarizes results from DTSC's 2012 Community Survey and stakeholder interviews which provided feedback to DTSC on stakeholder awareness of, and involvement in the environmental investigation and cleanup of the PG&E's Topock Compressor Station as well as suggested improvements.

Synopsis of Technical Updates from the TWG Meetings

Below is a brief summary of three technical updates that were discussed during a recent meeting of the Topock Technical Work Group (TWG).

Summary of Sampling and Monitoring Plan (part of the 60% Design)
The TWG discussed three key components of the monitoring program (Compliance Monitoring, In-situ Process Monitoring, and Monitoring of Chemicals of Potential Concern [Selenium, Molybdenum, and Nitrate]); the data quality objectives of each component; and the monitoring plan to achieve those objectives. Additionally discussed were rules proposed for making operational decisions during remedy operation (e.g., under which conditions should operation or remedy components be modified?).

Updated Modeling Results (part of the 60% Design)
The TWG discussed key updates to the model since 30% Design. This includes model structure, plume boundary, well locations, various updates to the geochemical model and sensitivity analysis.

Refresher on Plan for MW-38 Repair and Old Well/Pipe Reconnaissance (not part of 60% design)
The TWG discussed the scope and schedule for the repair and reconnaissance. The initial steps for MW-38 well repair are to expose the well casing and evaluate blockage. The initial step for the old well/pipe reconnaissance is to conduct surface geophysics to locate the pipe.

Hualapai Council Meeting

On March 12, 2013, the Hualapai Tribal Council convened a Special meeting to provide input and listen to an overview and update on the Topock Remediation project. This came on the heels of DTSC announcing the scoping of an Environmental Impact Report for the Soil Investigation Work Plan, and welcomed input from tribes, communities and other stakeholders, both in writing and at the scoping meetings. Shortly thereafter, the Hualapai Tribe granted DTSC an audience, including participation of federal agencies and PG&E.

Leading the collaboration was Hualapai Chairwoman Sherry J. Counts, Director Loretta Jackson-Kelly and Program Manager Dawn Hubbs of the Hualapai Department of Cultural Resources. The multifaceted presentation included agencies such as Bureau of Land Management on its projects; and DTSC, PG&E and the tribal Technical Review Committee (TRC) on the Topock project. Using the newly draft digital model and narration from Dr. Margaret Eggers of the TRC, the Hualapai Council had a better forum for viewing virtual sitewide conditions and issues. The Council engaged the group in meaningful discussion and thanked the participants, encouraging continued engagement with the Hualapai and specifically its liaisons Ms. Jackson-Kelly and Ms. Hubbs.

This endeavor was heralded by all participants as an interactive and positive measure in reaching out to key leadership; providing succinct information and foundation for the project; and will serve as a template in the interactive and collaborative outreach to leaders in future presentations. The Clearinghouse Task Force plans to take this experience and apply it to enhance understanding of the project and aid in providing meaningful input to leadership and agencies in making decisions on the Topock project direction.

Spotlight: Technical Review Committee

The Technical Review Committee (TRC) was established to convene and retain a multidisciplinary panel of independent scientific and engineering experts. The TRC is made up of multidisciplinary experts who will review project-related documents, participate in project-related meetings, and advise interested tribal members on technical matters relating to the final design and remedy.

Dr. Charlie Schlinger

Dr. Charlie Schlinger, co-founder of EN3 Professionals, LLC, is a member of the Topock Technical Review Committee. He has an active practice in water resources and energy-related civil & environmental engineering, and has practiced professionally in Northern Arizona and the Southwest for nearly 16 years, providing engineering and geosciences services to tribal, municipal, county, school district, industry and private-sector clients. Most recently, his practice has been focused on site engineering for 100-500kW solar energy developments, groundwater remediation and soil investigations at the Topock Compressor Station, and water supply / systems. Not long ago, Charlie did a stint at Far Eastern Federal University in the Russian Far East (Vladivostok), where he co-taught a course in coastal engineering. He maintains multi-state registrations in civil engineering, geology & geophysics.

Dr. Schlinger earned his B.S. degree at the University of Michigan at Flint and his Master's Degree in Civil and Environmental Engineering from Utah State University. He received his Ph.D. from The Johns Hopkins University, with a concentration in geophysics and geology. Additionally, Charlie is an Associate Professor in the College of Engineering, Forestry and Natural Sciences at Northern Arizona University (NAU). At NAU he covers: water systems / resources, geotechnical engineering, and geomatics / surveying. He co-founded the Watershed Research & Education Program at NAU and is a past Director.

Topock Project Activity Recap

- Following the finalization of the Cultural and Historic Properties Management Plan (CHPMP) by the Bureau of Land Management (BLM), which occurred in the first quarter of 2012, agencies, Tribes, and stakeholders continue to meet every other month to discuss the plan. The next CHPMP meeting is scheduled for May 8, 2013, at the BLM Lake Havasu Field Office.
- Several of the mitigation measures specified by the FEIR for Groundwater are in progress:
  - The Fourth Quarter 2012 EIR Mitigation Measures Compliance Report was completed on January 31, 2013.
  - PG&E has been conducting and will continue to conduct outreach with Tribes regarding Topock project activities (CUL-1a-8a). Monthly Tribal/PG&E in-person meetings are typically scheduled for the afternoon following the CTF meetings, replacing the monthly phone calls. The purpose of the meetings is to provide collaboration on mitigation measures, provide Tribes up-to-date information on planned and ongoing studies, field activities and measures that are being taken to mitigate project impacts, and/or other project-related activities of interest.
  - The Cultural Impact Mitigation Program (CIMP) (CUL-1a-8) is under preparation. The CIMP will be submitted with the 90% Design. PG&E is conducting outreach with Tribes on the CIMP:
    - Brainstorming on content of various mitigation measures and the CIMP outline.
    - A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.
    - The draft final protocol for the management of displaced materials was included in the Revised Soil Work Plan, published on January 11, 2013, and will also be included in the CIMP (CUL-1a-8g).
    - The plan for the decommissioning, removal, and restoration of the IM-3 Facility will be provided to the tribes for review and included as an appendix to the CIMP.
  - Field surveys:
    - Conducted additional vegetation and wetland survey to support fresh water source evaluation in October through November 2012.
    - Conducted additional archaeological/historic site field survey to support fresh water source evaluation in October through November 2012.
    - Botanical surveys were conducted in the project area during the period of March 12-14 to capture the spring blooming period. Additionally, desert tortoise surveys are planned for late spring.

TOPOCK REMEDIATION REVIEW

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

The **Topock Remediation Review** is a quarterly technical update on the Topock Compressor Station cleanup project. It is published by the Topock Clearinghouse Task Force, a group of stakeholders comprised of state, regional, and federal agencies; Native American Tribes; and PG&E representatives.

The **Topock Remediation Review** is dedicated to enhancing stakeholder understanding of technical and regulatory information, encouraging participation in decision making forums, and fostering timely and effective project management and decisions for the Topock Compressor Station project final remedy. *You may view past issues of the newsletter in the Document Library on the project's website (www.dtsc-topock.com). Navigate to the "Public Outreach" page and its "Other Outreach Documents" category.*

For More Information

Visit DTSC's Topock Project Website: *www.dtsc-topock.com*
Questions regarding this newsletter or the Topock Project should be directed to:

Aaron Yue
DTSC Project Manager
Phone: (714) 484-5439
E-mail: ayue@dtsc.ca.gov

Pamela Innis
DOI Topock Remedial Project Manager
Phone: (303) 445-2502
E-mail: pamela_innis@ios.doi.gov

Upcoming Regularly Scheduled Meetings

April 18, 2013	**TWG Meeting,** Topock Compressor Station, Needles, CA
May 8, 2013	**CHPMP Meeting,** BLM Lake Havasu Field Office, Lake Havasu City, AZ
May 21, 2013	**CTF Meeting,** Henderson, NV **TMU Meeting,** Henderson, NV
May 22, 2013	**TWG Meeting,** Henderson, NV, Location TBD

Note: Dates subject to change

TOPOCK REMEDIATION REVIEW

Fourth Quarter 2012 Newsletter

Update on Groundwater Remedy Design

Pacific Gas and Electric Company (PG&E) continues to develop the Intermediate (60%) Design for the Topock groundwater remedy. In the Preliminary (30%) Design, PG&E presented a plan to obtain freshwater from a well on the Havasu National Wildlife Refuge (HNWR)—well HNWR-1. The California Regional Water Quality Control Board, Colorado River Basin Region (RWQCB) has indicated that the HNWR-1 water would need to be treated to remove naturally occurring arsenic prior to injection.

With the RWQCB's consent, PG&E has opened discussions regarding the need for arsenic treatment with the State Water Resources Control Board (State Board). As the State Board has not yet made a decision, PG&E continues to evaluate other options for freshwater supply in an effort to find location(s) for new well(s) that could supply an adequate quantity of water and not require treatment prior to use for remedy operation.

On November 20, 2012, PG&E submitted the Implementation Plan (Plan) for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area to the agencies for review; it is anticipated that the review and approval will be completed by mid-January 2013. The Plan proposes testing of potential new water supply wells.

On November 30, 2012, PG&E submitted a second request for an extension of the Intermediate Design to evaluate options for alternative freshwater supply and to incorporate the results from the evaluation into the design. On December 31, 2012, DTSC responded by directing PG&E to separate the submission of the freshwater source details from the rest of the 60% Design. Additionally, DTSC directed PG&E to eliminate consideration of the freshwater source in California, and focus on the potential sources in Arizona. The new submission deadline for 60% Design is April 5, 2013.

Mark Your Calendar

Groundwater Design Schedule	
Intermediate (60%) Design	**Submit for Review / Comment** April 2013 **Comments Due** June 2013 **Response to Comments / Comments Resolution** Late June to Early October 2013
EIR Addendum	**Ongoing by DTSC**
Intermediate (60%) Design Addendum	**Within 45 days of completion of the Plan**
Pre-Final (90%) Design	**Submit for Review/Comment** November 2013 **Comments Due** Mid February 2014 **Response to Comments / Comments Resolution** Mid February 2014 to mid March 2014
Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan	
Submitted for Agency Approval	September 17, 2012
Soil CEQA Review	Ongoing by DTSC
Anticipated Agency Approval	August 18, 2013 concurrent with certification of the EIR
Recent Meetings and Events	
October 16, 2012	**Clearinghouse Task Force (CTF) Meeting,** Hilton Garden Inn, Yuma, AZ
October 17, 2012	**Consultative Work Group (CWG) Meeting,** Hilton Garden Inn, Yuma, AZ
October 18, 2012	**Technical Work Group (TWG) Meeting,** Hilton Garden Inn, Yuma, AZ
October 24, 2012	**Tribal/PG&E Topock Project Monthly Update,** conference call
November 13-14, 2012	**Inter-tribal Event,** Lake Havasu City, AZ
November 14, 2012	**Cultural and Historic Properties Management Plan (CHPMP) Meeting,** Lake Havasu, NV
December 4, 2012	**CTF Meeting,** Henderson, NV **Tribal/PG&E Topock Project Monthly Update,** Henderson, NV
December 11-13, 2012	**Soil EIR Public Meetings,** Golden Shores, AZ; Needles, CA; Yuma, AZ
December 19, 2012	**Tribal/PG&E Topock Project Monthly Update,** conference call
January 9, 2013	**CHPMP Meeting,** Lake Havasu, AZ
January 15, 2013	**CTF Meeting,** Henderson, NV **Tribal Monthly Update (TMU),** Henderson, NV
January 16, 2013	**CWG Meeting,** Henderson, NV
January 17, 2013	**TWG Meeting,** Henderson, NV

Note: Dates subject to change

Start of Environmental Review of Soil RFI/RI Work Plan

The Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan was submitted to the agencies for approval on September 17, 2012. The agencies are reviewing the document and DTSC is beginning the process of preparing a focused Environmental Impact Report (EIR) on the Revised Soil RFI/RI Work Plan.

On November 28, 2012, DTSC submitted a Notice of Preparation (NOP) of its intent to prepare an EIR for the soil investigation project. The purpose of the NOP is to solicit input from the public and the agencies on the scope and content of the environmental information to be included in the EIR. DTSC conducted three public Scoping Meetings in mid-December (Needles, CA; Golden Shores, AZ; and, Yuma, AZ) to provide the opportunity for the public to learn about the project and share any comments. Additional scoping meetings were also held by request for tribal governments.

The 45-day public comment period ends on January 14, 2013. Agency approvals are anticipated on August 18, 2013, concurrent with certification of the EIR. After the agencies have approved the Revised Soil RFI/RI Work Plan, the field implementation will commence.

East Ravine/Compressor Station Groundwater Investigation Activities

The East Ravine/Topock Compressor Station (ER-TCS) Groundwater Investigation activities are now complete. Field work for the ER-TCS Groundwater Investigation began in March 2011 and ended in July 2012. Results from the investigation are being incorporated into the Intermediate Design of the groundwater remedy. The wells have been incorporated into the site-wide monitoring program.

Green Highlight - Topock Truck

Recently, a new and innovative vehicle was added to the Topock onsite fleet: The Topock Truck. The Topock Truck was designed from scratch by the IM3 field team to perfectly fit their needs and to reduce waste in performing the IM3 and groundwater monitoring activities. The Topock Truck was built by a local welder and metal fabricator as a way to minimize greenhouse gas emission by eliminating up to 1,000 miles a week of mobilization driving by southern California offsite sub-contractors.

The Topock Truck isn't just a truck – it was designed to adapt to the needs of the Topock project. It has a custom made flatbed with a separate skid (pallet) designed for conducting sampling work. The benefit of the flatbed and skid approach is that one onsite truck can serve multiple purposes. The Topock Truck is modular and can be altered for multiple uses in the future. For example, a skid can be built to perform well rehabilitation or pipeline repair in the future. The modular system easily adapts to the specific requirements of Topock project.

Topock Truck

Spotlight: Technical Review Committee

The Technical Review Committee (TRC) was established to convene and retain a multidisciplinary panel of independent scientific and engineering experts. The TRC is made up of multidisciplinary experts who will review project-related documents, participate in project-related meetings, and advise interested tribal members on technical matters relating to the final design and remedy.

Eric Rosenblum, Ph.D. DABT
Environmental Toxicologist /
Risk Assessor

Eric S. Rosenblum , PhD, DABT joined the TRC at its formation in October 2011. His work focuses on the understanding how site remediation and Topock specific risk assessments can follow regulatory guidance while at the same time appropriately incorporating respect for the sacredness and spiritual history of land.

Throughout his career Dr. Rosenblum has focused his environmental practice on environmental toxicology and human and ecological risk assessments and has extensive experience in the evaluation and remediation of impacted groundwater, soil, and surface water issues associated with the mining, and oil and gas industries. Most recently Dr. Rosenblum has written an ecological risk assessment which evaluated the wildlife impacts associated with the global distribution of polyflourinated compounds (PFCs), and has worked on an assessment evaluating the potential impacts associated with the Snake River sockeye hatchery program. Eric's work has also includes evaluating the toxicity associated with chemicals in consumer products and is the lead toxicologist for Clean Production Actions. In this work Eric applies knowledge of toxicology to help manufactures develop products that are less harmful to humans and the environment.

Eric graduated with a PhD from University of California Davis in 2005 and now lives in the Indian Peaks mountain range in Colorado.

Topock Project Activity Recap

- On October 11, 2012, the Topock Orientation Pilot Program took place at the Compressor Station. More than 30 individuals were in attendance, including TRC members, project consultants, Tribal representatives, regulatory officials and PG&E representatives. Survey forms collected from the participants showed the experience was positive for most participants, and provided important feedback for tailoring future Orientation sessions. The Orientation Program has been a long-term objective of the CTF: providing a method for educating newcomers about the project. The Pilot Program was planned and organized through the efforts of the CTF Orientation Sub-Committee with significant input and direction from the CTF. The Orientation Program will serve as a fundamental aspect of Topock project and will continue to be updated periodically and serve newcomers as directed by the CTF.
- Responses to the community survey mailed to local residents and stakeholders in January 2012 are being reviewed and will be included in DTSC's forthcoming update of the Community Outreach Plan.
- Following the finalization of the Cultural and Historic Properties Management Plan (CHPMP) by the Bureau of Land Management (BLM), which occurred in the first quarter of 2012, agencies, Tribes, and stakeholders continue to meet every other month to discuss the plan. CHPMP meetings recently held or upcoming are: Jan. 9th and April 10th at the BLM Lake Havasu Field Office. For further information, contact Pam Innis, DOI.
- Several of the mitigation measures stemming from the FEIR for Groundwater are in progress:
  - The Third Quarter 2012 EIR Mitigation Measures Compliance Report was completed at the end of October 2012 and is available on the DTSC Topock project website.
  - PG&E has been conducting and will continue to conduct outreach with Tribes regarding Topock project activities based on the project EIR, section (CUL-1a-8a). Monthly Tribal/PG&E conference calls are often scheduled for the same day as the CTF meetings. The purpose of the monthly calls is to provide up-to-date information on planned and ongoing studies, field activities, measures that are being taken to mitigate project impacts in accordance with the project EIR, and/or other project-related activities of interest to Tribes.
  - The Cultural Impact Minimization Plan (CIMP) (CUL-1a-8) is under preparation. The CIMP will be submitted with the final design. PG&E is conducting outreach with Tribes on several parts of the CIMP, including, but not limited to the following:
    - The CIMP outline was discussed with interested Tribes on February 23, 2012, and March 22, 2012. PG&E is continuing the discussion with interested Tribes on various mitigation measures under the CIMP. A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval.
    - Draft protocols for review of cultural resource documents were included in the Corrective Measures Implementation (CMI) Work Plan (Section 4.8), and will also be included in the CIMP.
    - The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP.
    - Locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction will be included in the CIMP.
- Field surveys:
  - Biological and Cultural Resources surveys at potential exploratory boring sites began on October 2, 2012.
  - Opportunistic Soil Sampling Related to Topock Compressor Station Scrubber Removal occurred on October 4 and 5, 2012.
  - Salinity profiling of Key Wells and CMP Wells occurred from October 15 to 18, 2012.

TOPOCK REMEDIATION REVIEW

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

The **Topock Remediation Review** is a quarterly technical update on the Topock Compressor Station cleanup project. It is published by the Topock Clearinghouse Task Force, a group of stakeholders comprised of state, regional, and federal agencies; tribal governments; and PG&E representatives. The **Topock Remediation Review** is dedicated to enhancing stakeholder understanding of technical and regulatory information, encouraging participation in decision making forums, and fostering timely and effective project management and decisions for the Topock Compressor Station project final remedy.

You may view past issues of the newsletter in the Document Library on the project's website (www.dtsc-topock.com). Once there navigate to the "Public Outreach" page and its "Other Outreach Documents" category.

For More Information

Visit DTSC's Topock Project Website: www.dtsc-topock.com
Questions regarding this newsletter or the Topock Project should be directed to:

Aaron Yue
DTSC Project Manager
Phone: (714) 484-5439
E-mail: ayue@dtsc.ca.gov

Pamela Innis
DOI Topock Remedial Project Manager
Phone: (303) 445-2502
E-mail: pamela_innis@ios.doi.gov

Upcoming Meetings

February 19, 2013	**CTF Meeting,** location TBD **TMU,** location TBD
February 20, 2013	**TWG Meeting,** location TBD **CHPMP Meeting,** location TBD
March 13, 2013	**CHPMP Meeting,** location TBD
March 19, 2013	**CTF Meeting,** location TBD **TMU,** location TBD
March 20, 2013	**TWG Meeting,** location TBD **CHPMP Meeting,** location TBD

Note: Dates subject to change

TOPOCK REMEDIATION REVIEW

Third Quarter 2012 Newsletter

Update on the Groundwater Design

Pacific Gas and Electric Company (PG&E) is in the process of developing the Intermediate (60%) Design for the Topock groundwater remedy, and has been given a three-month extension (Sept. 2012 to Jan. 2013) for submittal of the document. The new schedule calls for the 60% Design to be submitted in January 2013. The reason for the schedule change is related to the selection of a freshwater source for the remedy, which is an important component of the 60% Design.

The final remedy will require a supply of freshwater, which PG&E originally proposed to obtain from a well on Havasu National Wildlife Refuge property (HNWR-1). There is a possibility that the HNWR-1 water would have to be treated to remove naturally occurring arsenic prior to injection. PG&E continues to evaluate options for water supply and is currently searching for a new well location that could supply an adequate quantity of water and not require treatment prior to injection. Three potential locations have been identified – one in California and two in Arizona. Access to these locations has been secured and cultural and biological surveys were conducted in early October. PG&E has been working with the agencies and tribal representatives to evaluate these sources; field work is anticipated to begin on October 23, 2012.

Mark Your Calendar

Groundwater Design Schedule	
Intermediate (60%) Design	**Submit for Review/Comment** Early January 2013 **Comments Due** End of May 2013 **Response to Comments/Comments Resolution** May to end of June 2013
Pre-Final (90%) Design	**Submit for Review/Comment** September 2013 **Comments Due** November 2013 **Response to Comments/Comments Resolution** Mid November to mid December 2013
Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan	
Submitted for Agency Approval	September 17, 2012
Soil CEQA Review	Ongoing by DTSC
Recent Meetings and Events	
July 11	**Cultural and Historic Properties Management Plan (CHPMP) Meeting,** BLM Lake Havasu Field Office
July 17	**Clearinghouse Task Force (CTF) Meeting,** Henderson, NV
July 26	**Tribal/PG&E Topock Project Monthly Update,** conference call
August 21	**CTF Meeting, MWD,** La Verne, CA
August 22	**Tribal/PG&E Topock Project Monthly Update,** La Verne, CA
September 12	**CHPMP Meeting,** BLM Lake Havasu Field Office
September 18	**CTF Meeting,** Henderson, NV
September 27	**Tribal/PG&E Topock Project Monthly Update,** conference call
October 16	**CTF Meeting,** Hilton Garden Inn, Yuma, AZ
October 17	**Consultative Work Group (CWG) Meeting,** Hilton Garden Inn, Yuma, AZ

Note: Dates subject to change

A view from the Colorado River

RFI/RI Work Plan Submitted for Agency Approval, Environmental Review

On September 17, 2012, PG&E submitted the Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan to the agencies for approval and environmental review. The purpose of this work plan is to summarize available soil data for the areas inside and outside the Topock Compressor Station fenceline, and to propose potential sample locations for collection of additional data to support the decision-making.

The soil investigation program addresses 15 Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), and other Undesignated Areas outside the Topock Compressor Station fenceline. This work plan recommends additional sampling in 10 of the 15 areas, and only unintrusive investigation in one of the 10 areas. The soil investigation program also addresses 27 SMWUs and AOCs within the Topock Compressor Station fenceline. This work plan recommends additional sampling in 25 of the 27 areas. In addition, this work plan addresses two additional areas: 1) the perimeter area (the area extending from the Topock Compressor Station fence line to the toe of the slope, outside the fence line), and, 2) the Topock Compressor Station storm drains.

Completion of the proposed soil investigation, as described in the work plan, is required to proceed with the risk assessment and Corrective Measures Study/Feasibility Study (CMS/FS) for soil inside and outside the Topock Compressor Station fence line. The risk assessment and CMS/FS are required to determine the appropriate remedy.

Blooming Cactus

Pursuant to CEQA, DTSC has also begun an environmental review of the revised work plan. This review is required prior to the State's approval of the proposed work. DTSC and its CEQA contractor will provide a timeline for CEQA review, at which time the schedule for agencies' approval will be revised accordingly.

Supplemental Soil Investigation Work Plan Timeline

Revised Work Plan
Submitted September 17, 2012

Agencies Review/Approve
Estimated Fall 2012

Field Implementation
Estimated Start Winter 2013

Spotlight: Technical Review Committee

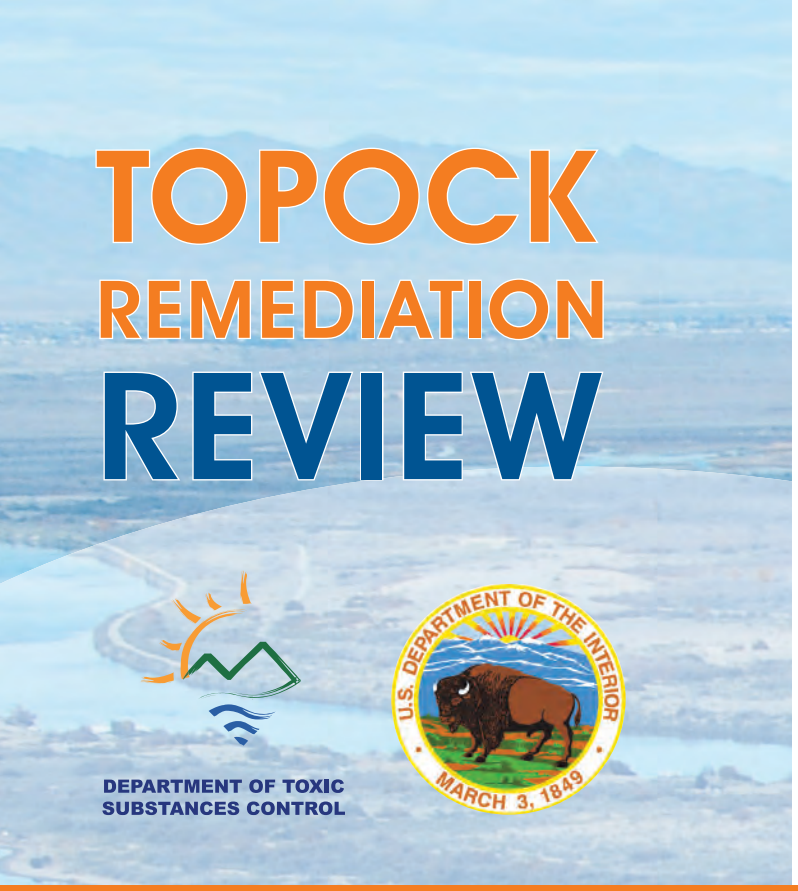
Margaret R. Eggers, PhD, PG, CHG

Margaret R. Eggers, PhD, PG, CHG joined the Topock Technical Review Committee (TRC) at its formation in October 2011, and serves as a member and Administrative Chair. Her work focuses on the development of the remedial design, and implementation of project wells and significant infrastructure on a property that has very deep spiritual meaning and sacred history for the Tribes. Dr. Eggers' work as an environmental consultant began in 1987 in St. Louis, Missouri, later moving to Southern California where her work focused on complex, large-scale, environmental clean-up efforts primarily for industrial sites. In 2003, Dr. Eggers started her own independent consulting firm, Eggers Environmental, Inc. to provide expert services for litigation consulting and mediation, and 3rd party review in soil and groundwater contamination, geology and hydrogeology. Throughout her professional career, Dr. Eggers has focused her environmental practice on complex clean-up projects, involving multiple agencies and diverse groups and stakeholders. In all of her endeavors, Dr. Eggers works collaboratively with agencies and stakeholders, striving to find a balance between environmental solutions, grounded in science, while also reaching consensus among parties on any given project.

In addition to her consulting practice, Dr. Eggers serves as Chair of the Board of Trustees for the Geological Society of America Foundation, and has served on the Editorial Board of the Environmental Forensics Journal since 2005. She is an editor/author of the field guide, "Mining History and Geology of Joshua Tree National Park" and is also a lecturer and workshop instructor for the Joshua Tree National Park Association's Desert Institute. Within the academic world, she teaches Geology and Oceanography part-time at Mira Costa College, and is an Adjunct to San Diego State University Department of Geological Sciences.

Topock Project Activity Recap

- Responses to the community survey mailed to local residents and stakeholders in January 2012 with the DTSC Topock Environmental Investigation Update Fact Sheet are now being analyzed and will be included in DTSC's updated Community Outreach Plan, expected to be completed in December 2012.
- Following the finalization of the Cultural and Historic Properties Management Plan (CHPMP) by the Bureau of Land Management (BLM), that occurred in the first quarter of 2012, agencies, Tribes, and stakeholders continue to meet every other month to continue the discussion of the CHPMP. The next CHPMP meeting is November 14, 2012, in Lake Havasu City (exact location to be determined).
- Several of the mitigation measures determined by, called for, and required by the EIR are in progress:
  - The Second Quarter 2012 EIR Mitigation Measures Compliance Report was completed at the end of July 2012 and is available on the DTSC Topock project website.
  - PG&E has been conducting and will continue to conduct outreach with Tribes regarding Topock project activities (CUL-1a-8a). Tribal/PG&E conference calls are scheduled monthly. The purpose of the monthly calls is to provide up-to-date information on planned and ongoing studies, field activities, measures that are being taken to mitigate project impacts in accordance with the project EIR, and/or other project-related activities of interest to Tribes.
  - Mitigation Monitoring and Response Program protocols are currently being revised with tribal participation. PG&E is conducting outreach with Tribes on several parts of the Cultural Impact Mitigation Program (CIMP). The plan for the decommissioning and removal of the IM-3 Facility and Site Restoration will be included as an appendix to the CIMP. A draft CIMP will be provided to interested Tribes for review prior to submittal to DTSC for review and approval. The CIMP will be submitted with the final design as directed.
  - Field surveys:
    - Avian surveys for Southwest Willow Flycatcher were performed in July, 2012. The field surveys are part of EIR mitigation measure BIO-2a.



The **Topock Remediation Review** is a quarterly technical update on the Topock Compressor Station cleanup project. It is published by the Topock Clearinghouse Task Force, a group of stakeholders comprised of state, regional, and federal agencies; tribal governments; and PG&E representatives. The **Topock Remediation Review** is dedicated to enhancing stakeholder understanding of technical and regulatory information, encouraging participation in decision making forums, and fostering timely and effective project management and decisions for the Topock Compressor Station project final remedy.

You may view past issues of the newsletter in the Document Library on the project's website (www.dtsc-topock.com). Once there navigate to the "Public Outreach" page and its "Other Outreach Documents" category.

For More Information

Visit DTSC's Topock Project Website:
www.dtsc-topock.com

Questions regarding this newsletter or the Topock Project should be directed to:

Aaron Yue
DTSC Project Manager
Phone: (714) 484-5439
E-mail: ayue@dtsc.ca.gov

Pamela Innis
DOI Topock Remedial Project Manager
Phone: (303) 445-2502
E-mail: pamela_innis@ios.doi.gov

Upcoming Meetings

October 25	**Tribal/PG&E Topock Project Monthly Update,** conference call
November 14	**CHPMP Meeting,** Lake Havasu City (exact location to be determined)
December 4	**CTF phone call,** Webex update
January 15, 2013	**CTF Meeting,** location to be determined
January 16, 2013	**CWG Meeting,** location to be determined
January 17, 2013	**TWG Meeting,** location to be determined

Note: Dates subject to change

TOPOCK REMEDIATION REVIEW

Second Quarter 2012 Newsletter

PG&E Preparing Intermediate Groundwater Remedy Design

Pacific Gas and Electric Company (PG&E) has begun work on the next phase of the design process for the Topock Compressor Station groundwater remedy, known as the Intermediate (60%) Design. PG&E recently completed the Response to Comments on the Preliminary (30%) Design. The purpose of the Response to Comments is to ensure that feedback from agencies, stakeholders and tribal governments regarding the 30% Design is documented and addressed as the design process moves forward.

In addition, on April 27, PG&E submitted the Freshwater Tech Memo describing the potential sources of fresh water to be used as part of the groundwater remedy; this memo and the comments received on it will be part of the 60% Design. Both the Response to Comments document and the Freshwater Tech Memo were discussed during Technical Work Group (TWG) meetings with agencies, tribal government representatives, and stakeholders, held in April and May. The current schedule calls for PG&E to submit the 60% Design documents for review and comment in August 2012.

PG&E crews install a pump near the Topock Compressor Station

Mark Your Calendar

Groundwater Design Schedule	
Intermediate (60%) Design	**Submit for Review/Comment** August 2012 **Comments Due** November 2012 **Response to Comments** November to February, 2013
Pre-Final (90%) Design	**Submit for Review/Comment** April 2013 **Comments Due** June to July, 2013 **Response to Comments** July to August, 2013
Revised Soil Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI)	
Work Plan	**Target Fall 2012**
Recent Meetings and Events	
May 9	**Cultural and Historic Properties Management Plan (CHPMP) Meeting,** BLM Lake Havasu Field Office
May 15	**CTF Meeting,** Henderson, NV
May 16	**TWG Meeting: To Discuss Remaining Response to Comments,** conference call
June 15	**TWG Meeting: Soil RFI Work Plan Response to Comments**, conference call
June 15	**Displaced Soil Subgroup Meeting,** conference call
June 19	**CTF Meeting,** Henderson, NV
June 28	**Tribal/PG&E Topock Project Monthly Updates,** conference call
July 11	**CCHPMP Meeting,** BLM Lake Havasu Field Office
July 26	**Tribal/PG&E Topock Project Monthly Updates,** conference call

Note: Dates subject to change

East Ravine/Compressor Station Groundwater Investigation Activities

PG&E is conducting an ongoing investigation of the East Ravine and Compressor Station, which will help to characterize conditions of this portion of the site and guide the remedy design. On May 6, 2012, PG&E met with the agencies, tribal governments, and stakeholders to discuss field data and the path forward. DOI and DTSC directed PG&E to install a deeper well at Site K (MW-72) to better characterize the vertical extent of contamination and to assess the need to modify the remedy design. The drilling and installation occurred between June 20 and 28. Additional wells may be installed for the groundwater monitoring program. The design of the monitoring program will be based on data collected from existing wells and the final remedial design. The monitoring program will be further defined in the 60% and the 90% Remedial Design documents.

To date, 16 monitoring locations have been established as part of Phase 2 of the East Ravine/Compressor Station Groundwater Investigation. The boreholes at these locations are included in the total Environmental Impact Report (EIR) count. A fieldwork summary report will be included as an appendix to the draft 60% Design submittal.

Planning for Supplemental Soil Investigation

PG&E is in the process of planning a supplemental soil investigation to define the nature and extent of contaminants within the compressor station property, and to guide potential remedy decisions in the future. On June 15, a TWG meeting with agencies, tribal government representatives, and stakeholders was held to discuss and respond to comments on the Draft Soil Work Plan. PG&E is in the process of incorporating the comments and revising the Draft Soil Work Plan. The timeline for the Soil RFI/RI is shown below. *Note schedules are subject to change.*

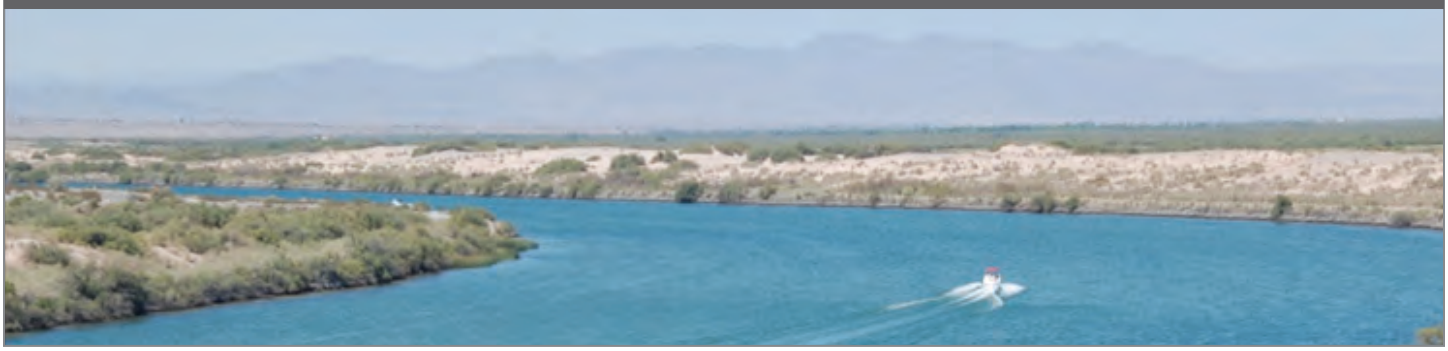
SUPPLEMENTAL SOIL INVESTIGATION WORK PLAN TIMELINE

Revised Work Plan
Early September 2012

Agencies Review/Approve
Late September 2012

Field Implementation
Fall 2012/Winter 2013

A view from the Colorado River, looking north



Topock Project Activity Recap

- Because it is not always possible for the Department of the Interior/ Bureau of Land Management (DOI/BLM) to determine all of the effects of various activities that may occur over the course of the Topock Remediation Project, the Programmatic Agreement (PA) provides for a Cultural and Historic Properties Management Plan (CHPMP). The CHPMP is a living document that specifies how cultural and historic properties within the Area of Potential Effects (APE) are to be treated during implementation of the remedy. Through an approved CHPMP (Treatment Plan), DOI/BLM can require consideration and appropriate management of effects on cultural and historic properties throughout the project. In so doing, DOI/BLM meets the requirements of Section 106 of the National Historic Preservation Act for its Undertaking within the Topock area. Last quarter, BLM issued the Cultural and Historic Properties Management Plan (CHPMP) Topock Remediation Project. Agencies, Tribes, and stakeholders continue to meet every other month to continue the discussion of the CHPMP. The third quarter 2012 CHPMP meeting takes place on September 12, 2012, at the BLM Lake Havasu Field Offices.
- DTSC is in the process of updating the Community Outreach Plan for the Topock project. As part of the update process, DTSC circulated a community survey in January 2012 to solicit feedback about the project and DTSC's outreach efforts. In addition, DTSC completed 50 interviews (both in-person and over the phone) with community members, tribal governments, elected officials and key stakeholders to gather additional feedback. The information compiled from the surveys and interviews will help guide future outreach activities for the project. The updated Community Outreach Plan is expected to be completed in November 2012.
- Several of the mitigation measures required by the EIR are in progress:
  - The First Quarter 2012 EIR Mitigation Measures Compliance Report was completed in April 2012 and is available on the DTSC Topock project website.
  - PG&E has been conducting and will continue to conduct outreach with Tribes regarding Topock project activities (CUL-1a-8a). Monthly Tribal/ PG&E conference calls are scheduled for the fourth Thursday of each month from 10:00 AM to 12:00 PM (Pacific Standard Time). The purpose of the monthly calls is to provide up-to-date information on planned and ongoing studies, field activities, measures that are being taken to mitigate project impacts in accordance with the project EIR, and/or other project-related activities of interest to Tribes.
  - Field surveys:
    - Avian surveys for Yuma clapper rail and California black rail were performed one day per week in April and May, 2012. Avian surveys for Southwest Willow Flycatcher were performed in May and June, 2012. The field surveys are part of EIR mitigation measure BIO-2a.
    - A geoarchaeological field survey was performed June 5 - 7, 2012, to determine if a potential exists for buried historical and archaeological resources. The field survey is part of EIR mitigation measure CUL-1b/c-2.
- The CWG Displaced Soil Subgroup members held a conference call on June 15, 2012. The purpose of the meeting was to discuss stakeholder and tribal comments and resolution of the comments on the Management Protocol for Handling and Disposition of Displaced Site Material. PG&E is preparing a revised Protocol and a Response to Comments table for subsequent discussion with agencies, stakeholder and tribal government review.

TOPOCK REMEDIATION REVIEW

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

The **Topock Remediation Review** is a quarterly technical update on the Topock Compressor Station cleanup project. It is published by the Topock Clearinghouse Task Force, a group of stakeholders comprised of state, regional, and federal agencies; tribal governments; and PG&E representatives. The **Topock Remediation Review** is dedicated to enhancing stakeholder understanding of technical and regulatory information, encouraging participation in decision making forums, and fostering timely and effective project management and decisions for the Topock Compressor Station project final remedy.

You may view past issues of the newsletter in the Document Library on the project's website (www.dtsc-topock.com). Once there navigate to the "Public Outreach" page and its "Other Outreach Documents" category.

For More Information

Visit DTSC's Topock Project Website:
www.dtsc-topock.com

Questions regarding this newsletter or the Topock Project should be directed to:

Aaron Yue
DTSC Project Manager
Phone: (714) 484-5439
E-mail: ayue@dtsc.ca.gov

Pamela Innis
DOI Topock Remedial Project Manager
Phone: (303) 445-2502
E-mail: pamela_innis@ios.doi.gov

Upcoming Meetings

August 21	**CTF Meeting,** La Verne, CA
August 23	**Tribal/PG&E Topock Project Monthly Updates,** conference call
September 12	**CHPMP Meeting,** BLM Lake Havasu Field Office
September 18	**CTF Meeting,** La Verne, CA
September 27	**Tribal/PG&E Topock Project Monthly Updates,** conference call
October 16	**CTF Meeting,** Yuma, AZ
October 17	**CWG,** Yuma, AZ
October 18	**TWG,** Yuma, AZ
October 25	**Tribal/PG&E Topock Project Monthly Updates,** conference call

Note: Dates subject to change

Acronyms

Acronyms and Abbreviations

µg/l	micrograms per liter
µm	micrometers
ACEC	area of critical environmental concern
afa	acre-feet annually
AOC 1	Area of Concern 1
AOCs	areas of concern
APE	area of potential effects
ARARs	applicable or relevant and appropriate requirements
BLM	U.S. Bureau of Land Management
BMPs	best management practices
BNSF	Burlington Northern and Santa Fe Railway railroad line
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHPMP	Cultural and Historic Properties Management Plan
CIMP	Cultural Impact Mitigation Program
CMI Workplan	Corrective Measures Implementation Workplan
CNEL	community noise equivalent level
CO2	carbon dioxide
COPC	chemicals of potential concern
Cr(III)	trivalent chromium
Cr(VI)	hexavalent chromium
Cr(T)	total chromium
CRHR	California Register of Historical Resources
CRIT	Colorado River Indian Tribes
CRMP	cultural resources management plan
CSLC	California State Lands Commission
CVWD	Coachella Valley Water District
CWG	Consultative Working Group
dBA	A-weighted decibels
DEIR	draft environmental impact report
DFG	California Department of Fish and Game
DOI	U.S. Department of Interior
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	Environmental Protection Agency
EPNG	El Paso Natural Gas

ERGI/TCS	East Ravine Groundwater Investigation, Topock Compressor Station
FEIR	final environmental impact report
Final CMS/FS	Final Corrective Measures Study/Feasibility Study
FMIT	Fort Mojave Indian Tribe
fps	feet per second
GHG	greenhouse gas
gpm	gallons per minute
GPS	Global Positioning System
GWRA	groundwater risk assessment
HERD	Human Ecological Risk Division
HMBP	hazardous materials business plan
HNWR	Havasu National Wildlife Refuge
IID	Imperial Irrigation District
IM-3	Interim Measure 3
IM-3 Facility	IM-3 Groundwater Extraction and Treatment Facility
IRZ	in situ reactive zone
LCWSP	Lower Colorado Water Supply Project
LUP	linear underground/overhead project
MCL	maximum contaminant level
MDAQMD	Mojave Desert Air Quality Management District
mg/l	milligrams per liter
MLD	most likely descendent
MMRP	mitigation monitoring and reporting program
MNA	Monitored Natural Attenuation
MOU	memorandum of understanding
MWD	Metropolitan Water District
NACP	Native American Communication Plan
NALs	numeric action levels
NELs	numeric effluent levels
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	notice of availability
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OPS	operating properly and successfully
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PAHs	polycyclic aromatic hydrocarbons
PBA	Programmatic Biological Agreement
PCBs	polychlorinated biphenyls

PG&E	Pacific Gas and Electric Company
ppm	parts per million
PRC	Public Resources Code
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RFI/RI	RCRA facility investigation/remedial investigation
RFQ	request for qualifications
ROD	record of decision
SHPO	State Historic Preservation Office
SMARTS	Storm Water Multi-Application Reporting and Tracking System
SOP	standard operating procedure
SOPs	standard operating procedures
STC	Sound Transmission Class
SWMU 1	Solid Waste Management Unit 1
SWMUs	solid waste management units
SWPPP	storm water pollution prevention plan
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TRC	Technical Review Committee
TWG	Technical Working Group
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management

Glossary of Terms

Glossary of Terms

Action Memorandum: A decision document that describes and authorizes the chosen removal action alternative under CERCLA and the NCP.

Administrative Consent Agreement: A voluntary agreement under which a private party agrees to perform CERCLA response actions on land under the jurisdiction, custody, or control of DOI and pursuant to DOI oversight.

Administrative Record: The complete body of documents that contains all information considered or relied upon by the lead agency to make its decision on the selection of a response action (i.e., cleanup) under CERCLA and the NCP.

Area of Potential Effect (APE): A term used in Section 106 to describe the area in which historic resources may be affected by a federal undertaking.

Aquifer: An underground geological formation, or group of formations, containing groundwater that can supply wells and springs. Geologists on this project performed well pumping tests to assess the physical characteristics of the aquifer and movement of groundwater near the Topock Compressor Station.

California Environmental Quality Act (CEQA): A law mandating environmental impact review of governmental action. It requires that public agencies study the significant environmental effects of proposed activities and that the public be informed and allowed to comment on project decisions.

Cleanup: Actions undertaken during a removal or remedial response to physically remove or treat a hazardous substance that poses a threat or potential threat to human health and welfare and the environment and/or real and personal property.

Community Outreach Plan: A plan that documents community concerns about a site and identifies specific actions to respond to them. The Plan outlines the preferred ways to involve the community in the DTSC decision-making process.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law, commonly known as “Superfund”, which was enacted in 1980 and amended in 1986. The law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment; provides for

liability of persons responsible for such releases; and establishes a framework for evaluating and cleaning up releases and threatened releases of hazardous substances.

Corrective Action Consent Agreement: A voluntary agreement between a lead agency and responsible party in which the company commits to investigate the nature and extent of contamination at and surrounding a site governed by RCRA, and to take corrective action.

Corrective Action Process: A process designed to evaluate the nature and extent of releases of a hazardous substance and implement appropriate measures to protect public health and the environment.

Corrective Measures Study (CMS): A study conducted by the facility owner/operator to identify and evaluate alternative remedies (i.e., cleanup options) to address contaminant releases at a site.

Chromium: A naturally occurring metal found in rocks, soil, and the tissue of plants and animals. It is present in the environment most commonly in two different forms: hexavalent chromium (Cr[VI] or Cr6) and trivalent chromium (Cr[III] or Cr3). Hexavalent chromium is considered a human carcinogen when inhaled at high concentrations.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency (Cal/EPA) that oversees the investigation and remediation of hazardous waste sites.

Feasibility Study (FS): The FS includes development, screening and analysis of CERCLA remedial alternatives so that relevant information concerning the remedial action options can be evaluated and an appropriate remedy selected.

Final Remedy: The final cleanup action proposed for dealing with contaminants at a site.

Fresh Water Flushing: In-situ treatment method performed by injecting fresh water into a groundwater aquifer to migrate contaminated groundwater towards and/or through an in-situ groundwater remediation system for treatment.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings.

Hazardous substances: A hazardous substance is any substance that when released to the environment in an uncontrolled or unpermitted fashion becomes subject to the reporting and possibly response provisions of the Clean Water Act, Clean Air Act, Solid Waste Disposal Act, Toxic Substances Control Act, and CERCLA.

Hexavalent Chromium, Chromium VI, Cr (VI): A heavy metal that is commonly found at low levels in drinking water. It can occur naturally but can also enter drinking water sources by

historic leaks from industrial plants' hazardous waste sites. Chromium 6 is the more-toxic form of chromium.

Hydraulic Control: The control of the movement of groundwater.

Information Repository: Designated locations that provide public access to site-related documents as required by the DTSC.

In-Situ Treatment: Destruction, alteration, immobilization, or separation of contaminants via treatment methods that do not require excavation or removal of the contaminated media (e.g. soil or groundwater).

Interim Measures: Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Lead agency: A public agency which has the principal responsibility for ordering and overseeing site investigation and cleanup.

Mohave: Used when describing the Arizona desert or agencies.

Mojave: Used when describing the Tribe or California desert.

Natural attenuation: Any combination of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.

National Historic Preservation Act (NHPA): The National Historic Preservation Act (NHPA), signed into law on October 15, 1966, is legislation intended to preserve historical and archaeological sites in the United States. The act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation Offices. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

Notice of Exemption: The environmental document that is prepared for projects or actions that meet specific criteria for exemption from the requirements of the CEQA. Examples of actions meeting such criteria include those taken to restore property damaged in a disaster area and specific actions designed to prevent an emergency.

pH: A measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. The pH scale commonly in use ranges from 0 to 14.

Percolation Beds: A widely-spread near surface or subsurface zone of highly permeable material such as crushed rock that improves the absorption of water into the soil and facilitates groundwater recharge.

Plume: A body of contaminated groundwater flowing from a specific source.

Programmatic Agreement (PA): A document in the NHPA Section 106 process that records the terms and conditions agreed upon by state and federal agencies. A PA establishes a process for consultation, review, and compliance with one or more federal laws, most often with those federal laws concerning historic preservation.

Proposed Plan: A document for public review that describes the preferred cleanup strategy, the rationale for the preference, reviews the alternatives presented in the detailed analysis of the remedial investigation/feasibility study.

Public Comment Period: A period during which the public can formally review and comment on various documents and proposed DOI actions.

RCRA Facility Investigation (RFI): An investigation in which the site owner of a site (PG&E, in this case), under the direction of DTSC, investigates the nature and extent of potential contamination and prepares an RFI Report to summarize results. DTSC oversees fieldwork, reviews and approves the RFI report, and involves the public through fact sheets and public meetings.

Record of Decision (ROD): A decision document that describes the chosen remedial action alternative. The ROD is based on information and technical analysis generated during the RI/FS and consideration of public comments and community concerns.

Resource Conservation and Recovery Act (RCRA): A federal statute for safely managing and disposing of waste generated nationwide.

Remedial Action: A term generally used to refer to longer-term cleanup actions to address the release or threatened release of hazardous substances under CERCLA as specified in a ROD.

Remedial Design (RD): The technical analysis and procedures which follow the selection of remedy for a site and result in a detailed set of plans and specifications for implementation of the remedial action.

Remedial Design/Remedial Action Consent Decree: A judicial decree expressing a voluntary agreement between PG&E and the United States, on behalf of the DOI, BLM, FWS, and BOR, resolving certain specified claims of the Federal agencies under CERCLA and requiring PG&E to pay all Federal response costs incurred in overseeing remedy implementation. The consent decree describes actions that PG&E is required to perform.

Remedial Design Work Plan: Document that presents the framework and schedule for implementation of the selected remedy. This document is prepared following completion of the ROD.

Remediation: Cleanup, which may include control, containment, treatment, excavation, and/or disposal.

Responsible party: An individual or corporate entity considered legally liable for contamination found at a property and, therefore, responsible for cleanup of the site.

Site: The land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity (from 40 CFR 265.1081).

Statement of Basis: A milestone document in the RCRA process that describes the basis for a lead agency's proposed remedy and cleanup standards. The Statement of Basis is issued by the agency once the alternative remedies have been evaluated and the Corrective Measures Study is complete.

Time-Critical Removal Action: A type of removal action responding to releases or the threatened release of one or more hazardous substances where less than a six-month period for planning the cleanup activities after the lead agency determines that a removal action is appropriate.

Traditional Cultural Property (TCP): Property associated with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

Tribes: Nine Tribes are involved with the Topock project, including the Chemehuevi Indian Tribe, Cocopah Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Fort Yuma Quechan Tribe, Hualapai Tribe, Havasupai Tribe, Twenty-Nine Palms Band of Mission Indians, and the Yavapai-Prescott Indian Tribes.

Topock Environmental Investigation and Cleanup
Project Orientation


TOPOCK
Project Orientation