5.0 Status of SWMUs, AOCs, and Other Undesignated Areas within the Site Investigation and Closure Process

As outlined in Section 4.0, a total of 14 SWMUs, 20 AOCs, and two other undesignated areas have been identified at the Topock Compressor Station. The SWMUs, AOCs, and other undesignated areas have been identified at different times during the history of RCRA corrective action process, and therefore, the status of the various sites differs significantly. The status of sites ranges from those where no investigation has yet been performed to sites where remediation and closure have already been completed.

Table 5-1 summarizes the status of SWMUs, AOCs, and other undesignated areas at the Topock Compressor Station. For the purpose of developing appropriate conclusions and recommendations, the sites have been divided into three groups according to their status within the site investigation, remediation, and closure process:

- SWMUs and AOCs for which the Site Investigation and Closure Process is Complete.
- Previously Closed SWMUs and AOCs for which Further Investigation has been Requested.
- SWMUs, AOCs, and Other Undesignated Areas to be Carried Forward in the RFI/RI.

5.1 SWMUs and AOCs for Which Site Investigation and Closure Process is Complete

The RCRA corrective action and CERCLA closure process is considered to be complete at the SWMUs and AOCs in this group. SWMUs and AOCs in this group are: SWMU 2 (soil only), SWMU 3, SWMU 4, SWMU 7, SWMU 10, Unit 4.6, AOC 2 and AOC 3. A summary of each of these SWMUs and AOCs is below. Details were provided in Section 4.0.

5.1.1 SWMU 2

SWMU 2 is the injection well, PGE-08. The well was used for injection of treated wastewater. There is no evidence that any wastes would have been disposed around the well, and it is not expected that there is any soil contamination at SWMU 2. Therefore, the unit is closed for soil and no future soil evaluation is necessary. Groundwater will be evaluated as part of RFI Volume 2 (Groundwater).

5.1.2 SWMU 3, SWMU 4, and AOC 3

SWMU 3 is Well PGE-06 and SWMU 4 is Well PGE-07. AOC 3 consists of the area around PGE-06 and PGE-07. Wells PGE-06 and PGE-07 were drilled and completed to provide a backup source of industrial water supply for the compressor station. Both wells have been

on standby status since installation and have never been used to supply water to the facility. There is no evidence to indicate that any wastes were disposed of in or around the wells. Detected concentrations of Cr(T) and Cr(VI) in the groundwater within the wells are related to discharges of wastewater to Bat Cave Wash and do not reflect the disposal of wastes into the wells.

Wells PGE-06 and PGE-07 will continue to be sampled as part of ongoing groundwater investigation activities. DTSC's review of the historic information associated with SWMU 3, SWMU 4, and AOC 3 has concluded that no further investigation is required (DTSC 2006a). SWMU 3, SWMU 4, and AOC 3 are therefore considered closed, and will not be addressed further in RCRA corrective action or CERCLA site investigation and closure activities at the Topock Compressor Station.

5.1.3 SWMU 7 – Precipitation Tank

PG&E completed the clean closure of six units comprising former hazardous waste management facilities and associated pipelines at Topock. SWMU 7 (Precipitation Tank) was one of the sites identified in the RCRA Part A Permit application (PG&E 1980b) filed with USEPA on November 17, 1980, and closed prior to the execution of the CACA (DTSC 1996). On June 26, 1995, a closure certification acceptance letter was issued by DTSC for the six units (DTSC 1995).

Complete details on the closure of SWMU 7 is presented in *Phases 1 and 2 Closure Certification Report, Hazardous Waste Management Facilities* (Mittelhauser 1990a). This report addressed the five units comprising the onsite hazardous waste treatment system (SWMUs 5, 6, 7, 8, and 9), and provides a complete description of closure activities and contains data from disposal characterization sampling, disposal manifesting information, and ultimate disposal locations. A closure certification acceptance letter that included SWMU 7 was issued by DTSC on June 26, 1995 (DTSC 1995). A summary of the closure activities for SWMU 7 is provided below. This section presents data for the final Confirmation samples (representative of final site conditions).

The precipitation tank was located on the southern portion of the upper yard (Figure 5-1) and constituted Step 2 of the two-step chromium treatment system installed at the compressor station in 1969. Sodium hydroxide was added to chromium-bearing wastewater within this tank to induce precipitation of chromium out of the wastewater. The precipitation tank was removed from service, along with the remainder of the two-step treatment system, in October 1985.

5.1.3.1 Closure Activities

Closure of the precipitation tank was accomplished during Phase 1 closure activities performed from December 1988 through February 1989. The steps taken during closure of the precipitation tank included:

- Hydroblasting of the steel tank; the hydroblast water was containerized and disposed of as hazardous waste.
- Removal of sludge from the base of the tank and disposal of the sludge as hazardous waste (reported to be five drums).

- Removal of the precipitation tank from its foundation; the tank was cut up and transported to American Metal Recycling, Inc. for recycling.
- Removal of the concrete foundation of the tank and a small concrete pad (4 feet by 6 feet) where a small sodium hydroxide tank was stored; this concrete was combined with the concrete from the Process Pump Tank (for a total of about 30 cubic yards) and it was disposed of offsite as a Class III waste.
- Removal of soil after the initial confirmation samples indicated contamination (the volume of soil removed is estimated to be about 0.25 cubic yard).
- Collection of final confirmation samples.
- Backfilling of the area with local material and final grading.

5.1.3.2 Confirmation Samples

Following removal of the tank, concrete foundation and subsoils, and approximately 1 foot of contaminated soils, a sample trench was excavated, and confirmation samples were collected from two locations in the wall of the trench. At location PT-3, samples were collected at approximately 4 and 6 feet bgs. At location PT-4, samples were collected at 3.5 feet bgs. The locations of these samples are presented in Figure 5-2. These samples were analyzed for Title 22 metals, Cr(VI), fluoride, and pH.

Results of the final samples collected from the sample trench are presented in Table 5-2. The results of the final confirmation samples (PT-3_2, PT-3_4, and PT-4_1.5) indicate that all COPCs were at levels below cleanup objectives (i.e., established background concentrations).

5.1.3.3 Status and Summary

Based on confirmation results, this SWMU was considered clean-closed (Mittelhauser, 1990a). A closure certification acceptance letter that included this SWMU was issued by DTSC on June 26, 1995 (DTSC 1995), and DTSC has required no further investigation of SWMU 7 (DTSC 2006a). SWMU 7 is therefore considered closed, and will not be addressed further in RCRA corrective action or CERCLA site investigation and closure activities at the Topock Compressor Station.

5.1.4 SWMU 10 – Old Evaporation Ponds

PG&E completed the clean closure of the Old Evaporation Ponds (SWMU 10) during Phase 3 of the hazardous waste treatment system closure at Topock. Complete details regarding the closure of SWMU 10 are documented in *Closure Certification Report for the Wastewater Evaporation Ponds* (Trident 1993), and *Closure Certification Report Addendum for the Wastewater Evaporation Ponds* (Trident 1995b). These reports include a complete description of all closure activities and contain all data from disposal characterization sampling, disposal manifesting information, and ultimate disposal locations. The closure certification acceptance letter was issued by DTSC on June 26, 1995 (DTSC 1995). The Water Board also issued a closure acceptance letter for the Old Evaporation Ponds (SWMU 10) on May 11, 1995 (Water Board 1995). A summary of the closure activities for SWMU 10 is provided

below. This section presents data for the final confirmation samples (representative of final site conditions).

The Old Evaporation Ponds were located approximately 1,000 feet west-southwest of the compressor station on property owned by the HNWR (Figure 5-3). This unit comprised four ponds—designated as Pond Nos. 1, 2, 3, and 4—with Pond No. 1 being the northernmost pond and Pond No. 4 the southernmost pond. Pond No. 1 was completed in 1971, while Pond Nos. 2 through 4 were completed in 1974.

The ponds occupied a total surface area of about 181,000 square feet (4.15 acres). Each pond was lined with a 20-millimeter PVC synthetic liner. The liners were underlain by a layer of sand at least 4 inches thick and overlain by a 1-foot-thick layer of sand (PG&E 1993). The inside sloping surface of the berms surrounding each pond were spray-coated with asphalt to prevent erosion. Each pond had depth of about 6 feet. Wastewater was transferred from the facility to the ponds by pipeline.

The four ponds remained in use until they were replaced with four new Class II (i.e., double-lined) ponds, located approximately 1.2 miles to the northwest, in October 1989.

5.1.4.1 Closure Activities

Closure of the old evaporation ponds was accomplished during Phase 3 closure activities performed from September through November 1993 (Trident 1993). The steps taken during closure of the old evaporation ponds included:

- Removal of a portion of pipeline section G1; the remaining portion was encased in concrete. The removed portion was disposed of as hazardous waste. One confirmation sample (PG-2) was collected from beneath pipeline section G1 following its removal (the results for this sample are presented below in Section 5.2.6).
- Pressure testing of pipeline G2/G3 that ran from the lower yard of the compressor station to the evaporation ponds (about 1,500 feet); the pipeline was tested at 38 psi for 16 hours and was reportedly leak free (therefore, no samples were collected from beneath these sections).
- Removal of about 200 feet of aboveground piping and offsite disposal of the pipe at the Laidlaw Lake Havasu Class III facility; the remaining pipe was capped and left in place.
- Salt crust that had formed on the surfaces of Pond Nos. 2 through 4 was broken up to enhance the evaporation of water remaining in these three ponds; Pond No. 1 did not contain any standing water.
- Removal of residual solids and 3 inches of liner cover sand from Pond No. 1, and the removal of residual solids, liner cover sand, and about 1 to 3 inches of sand underlying the liner from Pond Nos. 2 through 4; this material totaled about 5,500 cubic yards and was transported offsite and disposed of at the USPCI Class I facility in Beatty, Nevada.
- Removal of the remaining liner cover sand from Pond 1 and some sand from the side slopes of Pond No. 2 through 4; this material totaled about 3,000 cubic yards and was transported offsite for disposal at the Laidlaw Lake Havasu Class III facility.

- Inspection of the 20-millimeter PVC pond liners; the liners were reported to be in excellent condition, and no punctures, rips, or environmental stress cracks were found.
- Removal of the pond liners; the liner from Pond No. 1 was disposed offsite at the at the Laidlaw Lake Havasu Class III facility, while the liners from Pond Nos. 2 through 4 were disposed of at the USPCI Class I facility in Beatty, Nevada.
- Drilling of soil borings and collection of confirmation soil samples from beneath each pond.
- Monitoring of groundwater adjacent to the ponds.
- Filling and regrading of the area (clean berm soil was used to fill in the pond areas).
- Revegetation of the area with native plants according to specifications provided by the USFWS.

5.1.4.2 Confirmation Samples

After removal of the ponds, a subsurface sampling program was conducted to collect samples of the soil beneath the former ponds. These samples were collected from seven locations in former Pond No. 1 (P1-1 through P1-7), seven locations in former Pond No. 2 (P2-1 through P2-7), six locations in former Pond No. 3 (P3-1 through P3-6), and seven locations in former Pond No. 4 (P4-1 through P4-7). Locations for the confirmation samples were selected based upon the *Closure Plan for the Hazardous Waste Management Facilities at the Topock Compressor Station* (Mittelhauser, 1986) that was reviewed and approved by DTSC. Samples were initially collected on a grid. Additional confirmation samples were selected to demonstrate the removal was complete. The locations of these samples are presented on Figure 5-3.

At each of these locations, samples were collected at depths up to 25 feet. The samples were analyzed for Title 22 metals, Cr(VI), fluoride, pH, and specific conductance.

Results of the soil samples collected from the subsurface sampling program are presented in Table 5-3. The cleanup objectives as specified in the Closure Plan were based on background concentrations of COPCs (Mittelhauser 1986, 1990a). Results of the subsurface sampling program indicated that metals concentrations were below or near cleanup objectives. Although some parameter concentrations exceeded the background standards, concentrations were at low levels and appeared to be within the naturally-occurring soil concentration ranges for these metals.

To assess whether the former ponds had leaked and possibly affected groundwater, PG&E performed an extensive study of groundwater quality in the vicinity of the ponds. This study is documented in the reported entitled *Water Quality Analysis Report Old Evaporation Ponds* (PG&E 1993). The conclusion of the study was that operation of the ponds had not resulted in any impact to groundwater. Groundwater data evaluated as part of this study are summarized in Table 5-4.

5.1.4.3 Status and Summary

Based on the closure data, the closure certification acceptance letter that included the old evaporation ponds was issued by DTSC on June 26, 1995 (DTSC 1995), and DTSC has

required no further investigation of SWMU 10 (DTSC 2006a). The Water Board also issued a closure acceptance letter for the old evaporation ponds on May 11, 1995 (Water Board 1995). SWMU 10 is therefore considered closed, and will not be addressed further in RCRA corrective action or CERCLA site investigation and closure activities at the Topock Compressor Station.

5.1.5 Unit 4.6 – Waste Oil Storage Tank

Unit 4.6 consists of the waste oil storage tank that is located within the oil and fuel storage area on the eastern side of the facility. The tank is still in active service. The tank is an AST that is routinely visually inspected. In addition, the tank is situated on top of a concrete pad that is bermed on all sides to form secondary containment for the area. The tank and secondary containment were installed in 1951, and no known releases have occurred from this tank.

The waste oil storage tank was modified in 1995 to reduce its capacity from 7,500 gallons to 5,000 gallons. Because the capacity has been reduced to 5,000 gallons, this tank is no longer classified as a RCRA storage facility.

There have been no known releases associated with this tank, and the tank is no longer classified as a RCRA storage facility. DTSC's review of the historic information associated with Unit 4.6 has concluded that no further investigation is required (DTSC 2006a). Unit 4.6 is therefore considered closed, and will not be addressed further in RCRA corrective action or CERCLA site investigation and closure activities at the Topock Compressor Station.

5.1.6 AOC2 – Area Around Inactive Injection Well (PGE-08)

AOC 2 consists of the surficial soil around Well PGE-08 as well as the pipeline to the injection well which transmitted treated facility wastewater to the injection well. Injection well PGE-08 was used from May 1970 through December 1973 for subsurface injection of treated wastewater from facility operations. There is no evidence of any releases to the area surrounding the former injection well; therefore, further assessment and delineation of this area is not warranted. Two shallow soil samples have been collected near the injection wellhead and along the wastewater transference pipeline. Cr(T) was detected in both samples but results were within the currently estimated background range. Any incidental releases from the pipeline to the well will be identified through the pipeline evaluation for AOC 18. Per DTSC (2006), AOC 2 requires no further investigation, and will not be addressed further in the RCRA corrective action or CERCLA site investigation and closure activities at the Topock Compressor Station.

5.2 Previously Closed SWMUs and AOCs for Which Further Investigation Has Been Requested

In a letter dated July 13, 2006 DTSC requested further investigation for eight units that have previously been closed (DTSC 2006a). These eight units consist of 5 units associated with the former hazardous waste management system (SWMUs 5, 6, 8, and 9, and AOC 18), and three units associated with the former oily water treatment system (Units 4.3, 4.4, and 4.5).

As discussed above, PG&E completed the clean closure of the six units comprising former hazardous waste management facilities and associated pipelines at Topock. The six units consisted of the Sludge Drying Beds (SWMU 5), Chromate Reduction Tank (SWMU 6), Precipitation Tank (SWMU 7), Process Pump Tank (SWMU 8), Transfer Sump (SWMU 9), and the Old Evaporation Ponds (SWMU 10). These sites were identified in the RCRA Part A Permit application (PG&E 1980b) filed with USEPA on November 17, 1980. These sites were closed prior to the execution of the CACA (DTSC 1996). On June 26, 1995, a closure certification acceptance letter was issued by DTSC for the six units (DTSC 1995); the piping was not identified as a separate unit, but was considered closed as part of the entire system. Closure of the former hazardous waste management facilities at the compressor station was performed in three phases (Phases 1 through 3) from November 1988 through November 1993 in general accordance with the *Closure Plan for the Hazardous Waste Management Facilities at the Topock Compressor Station* (Mittelhauser 1986), which was reviewed and approved by DTSC (Mittelhauser 1990a; Trident 1993).

Complete details regarding the closure of these facilities are described in *Phases 1 and 2 Closure Certification Report, Hazardous Waste Management Facilities* (Mittelhauser 1990a). A summary of the closure activities for these facilities is provided below. Material that was determined to be hazardous waste was transported offsite for disposal at the Chemical Waste Management, Inc. Class I Landfill in Kettleman, California. Material that was determined to be non-hazardous was either disposed of offsite at a San Bernardino County Class III Landfill (near Barstow), or was used at the facility as fill material. DTSC has requested additional investigation at four of the closed units (SWMUs 5, 6, 8, and 9), and for the associated piping (AOC 18) (DTSC 2006a).

PG&E also completed closure of the former oily water treatment system that consisted of the oil/water holding tank (Unit 4.3), the OWS (Unit 4.4), the portable waste oil storage tank (Unit 4.5), and the interconnecting piping. Closure of these facilities was performed between November 1989 and March 1990, in general accordance with the *Work Plan for Removal of the Oil Water Separator System* (Mittelhauser 1989). Complete details regarding the closure of this system are provided in the *Closure Activity Report, Oil Water Separator System, Topock Compressor Station* (Mittelhauser 1990b). Material that was determined to be hazardous waste was transported offsite for disposal at the Chemical Waste Management, Inc. Class I Landfill in Kettleman, California. Material that was determined to be non-hazardous was either disposed of offsite at a San Bernardino County Class III Landfill (near Barstow), or was used at the facility as fill material. DTSC has requested additional investigation of Units 4.3, 4.4, and 4.5 (DTSC 2006a).

PG&E also completed closure of the Former 300B Pipeline Liquids Tank. Closure activities were performed between July and September 1996 in accordance with the *Former Pipeline Liquid Closure Plan* (Trident 1996c). Complete details regarding the closure of the Former 300B Pipeline Liquids Tank are provided in the *Former Pipeline Liquid Oil Tank Closure Certification Report* (Trident 1996d). Closure activities consisted of soil excavation and confirmation sampling. Four rounds of excavation were performed to a total depth of 5.5 feet bgs. San Bernardino County issued a letter on June 9, 1997 confirming the completion of the site investigation and remedial action for the contaminated soil at this site. DTSC has requested additional investigation of the Former 300B Pipeline Liquids Tank (DTSC 2007e).

A summary of the closure activities for SWMUs 5, 6, 8, and 9, AOC 18, Units 4.3- 4.5, and the Former 300B Pipeline Liquids Tank is provided below. This section presents data for the final confirmation samples (representative of final site conditions).

5.2.1 SWMU 5 – Sludge Drying Beds

The two sludge drying beds were formerly located directly adjacent to one another in the southern part of the lower yard (Figure 5-1). At the time of removal, each bed was approximately 20 feet wide by 50 feet long, and the walls and floors of both beds were constructed of 8-inch-thick concrete.

The drying beds were used from 1951 until April 1962 to dehydrate lime sludge generated by the water conditioning process used at the facility (Kearny 1987; PG&E 1968a). From 1964 to 1969, a single-step wastewater treatment pond was constructed in one of the beds. From 1969 through October 1985, the drying beds were used to dehydrate chromic hydroxide sludge generated by the chromium reduction process used to treat cooling water blowdown (performed in SWMU 6 through SWMU 9). Use of the beds ceased in October 1985.

5.2.1.1 Closure Activities

Closure of the sludge drying beds was accomplished during Phase 1 closure activities performed from December 1988 through February 1989. The steps taken during closure of the sludge drying beds included:

- Removal of a thin layer (0 to 5 millimeters) of dry solids consisting of sand and some clay and removal of a small volume of stormwater using a sorbent material; the dry solids and sorbent were placed in a roll-off bin and transported offsite for disposal as hazardous waste.
- Hydroblasting of the concrete walls and floors to remove green deposits observed on the concrete; the hydroblast water was containerized, characterized, and properly disposed of as hazardous waste.
- Demolition, removal, and disposal of an estimated 95 cubic yards of concrete from the walls and floors of the beds; the concrete was broken up, characterized, and disposed of offsite as a Class III waste. Rebar from the concrete was transported offsite for recycling.
- Removal of the concrete footings; after determining that this concrete was not hazardous, the concrete was used as fill material onsite.
- Collection of confirmation samples.
- Final filling and grading of the area.

5.2.1.2 Confirmation Samples

Following removal of the sludge drying beds, confirmation soil samples were collected. Four confirmation samples are representative of existing site conditions (WDB-4, WDB-5, EDB-4, and EDB-5). The locations of these samples are presented in Figure 5-2. These samples were analyzed for Title 22 metals, Cr(VI), fluoride, and pH.

Results of the confirmation soil sampling are presented in Table 5-5. With two exceptions, concentrations of all parameters in the soil sample were less than the cleanup objectives established in the closure plan (Mittelhauser 1986). The cleanup objectives as specified in the Closure Plan were based on background concentrations of COPCs (Mittelhauser 1986, 1990a). The lead concentration in sample EDB-4 was 17 mg/kg and the Cr(T) concentration in EDB-5D (a field duplicate) was 47 mg/kg; both results were considered only a *de minimis* amount greater than the cleanup objectives (16 mg/kg for lead and 43 mg/kg for Cr[T]).

5.2.1.3 Status and Summary

Based on these results, SWMU 5 was considered clean closed (Mittelhauser 1990a). A closure certification acceptance letter that included this SWMU was issued by DTSC on June 26, 1995 (DTSC 1995). DTSC, however, has requested that additional analysis be conducted for VOCs, TPH, and SVOCs in soil at SWMU 5 (DTSC 2006a).

5.2.2 SWMU 6 – Chromate Reduction Tank

The chromate reduction tank was formerly located in the southern end of the lower yard (Figure 5-1) and constituted the first step of the two-step wastewater treatment system installed at the compressor station in 1969. Sulfur dioxide was added to Cr(VI)-bearing cooling water blowdown within this tank to reduce Cr(VI) to Cr(III). The chromate reduction tank was removed from service as part of the treatment system in October 1985. However, beginning in November 1985, the tank was reportedly used as a holding tank for an unspecified period of time (Kearny 1987). As a holding tank, it received treated water from the OWS (Unit 4.4) prior to discharge of the water to the former evaporation ponds.

The chromate reduction tank was partially set below grade within a pit that measured 10 feet wide by 10 feet long by 6 feet deep. The pit was supported on all four sides with wooden retaining walls; however, the bottom of the pit was not lined or paved.

5.2.2.1 Closure Activities

Closure of the chromate reduction tank was accomplished during Phase 2 closure activities performed from November 1989 through March 1990. The steps taken during closure of the chromate reduction tank included:

- Removal of sludge and water in the tank for characterization and disposal of the materials as hazardous waste.
- Hydroblasting of the steel tank; the hydroblast water was containerized and properly disposed of as hazardous waste.
- Removal of the tank from the pit; inspection revealed that all the green sludge adhering to the tank could not be removed. The tank was disposed of as hazardous waste.
- Removal of the concrete footings; after determining that this concrete was non-hazardous, the concrete was used as fill material onsite.
- Removal of approximately 1 foot of soil over the entire floor and disposal of the soil as hazardous waste.
- Collection of confirmation samples.

- Removal of the wooden shoring from the excavation, backfilling with local fill material, and final grading.

5.2.2.2 Confirmation Samples

After removal of the approximately 1 foot of soil from the entire floor of the tank pit area, a sample trench was excavated and samples were collected from the wall of the trench at one location at depths of 0.5, 1, and 1.5 feet.[18] The location of these co-located samples (CRT-4) is presented in Figure 5-2. These samples were analyzed for Title 22 metals, Cr(VI), fluoride, and soil pH.

Results of the samples collected from the sample trench are presented in Table 5-6. With one exception, concentrations of all parameters in the soil sample were less than the cleanup objectives. The Cr(T) concentration in the original sample from 0.5 foot bgs was 120 mg/kg, which was above the cleanup objective of 43 mg/kg. However, concentrations of all other COPCs were below cleanup objectives (i.e., established background concentrations).

5.2.2.3 Status and Summary

Based on these results, this SWMU was considered clean closed (Mittelhauser 1990a). A closure certification acceptance letter that included this SWMU was issued by DTSC on June 26, 1995 (DTSC 1995). DTSC, however, has requested that additional analysis be conducted for VOCs, TPH, and SVOCs in soil at SWMU 6 (DTSC 2006a).

5.2.3 SWMU 8 – Process Pump Tank

The process pump tank was located on the southern side of the facility (Figure 5-1) and was used as a temporary holding tank for treated wastewater discharged from the precipitation tank (SWMU 7; Unit 4.9). The process pump tank was removed from service, along with the remainder of the two-step treatment system, in October 1985.

5.2.3.1 Closure Activities

Closure of the process pump tank was accomplished during Phase 1 closure activities performed from December 1988 through February 1989. The steps taken during closure of the process pump tank included:

- Hydroblasting of the steel tank; the hydroblast water was containerized and disposed of as hazardous waste.
- Removal of sludge from the tank and disposal of the sludge as hazardous waste.
- Removal of the tank from its foundation; the tank was cut up and recycled.
- Removal of the concrete foundation; this concrete was combined with the concrete from the Precipitation Tank (for a total of about 30 cubic yard) and it was disposed of as Class III waste.
- Collection of an initial round of confirmation samples.

[18] Because the tank pit was originally 6 feet deep and another 1 foot of soil was removed, actual sample depths were 7.5, 8, and 8.5 feet bgs.

- Soil removal after the initial confirmation samples indicated residual contamination (the volume of soil removed is estimated to be about 0.25 cubic yards).
- Collection of final confirmation samples.
- Backfilling of the area with local material and final grading.

5.2.3.2 Confirmation Samples

Following removal of the tank, concrete foundation and subsoils, and approximately 1.5 feet of contaminated soil, a sample trench was excavated and samples were collected from one location on the wall of the trench at approximately 4 and 5 feet bgs. The location of this sampling point (PPT-4) is shown in Figure 5-2. Locations for the confirmation samples were selected based upon the *Closure Plan for the Hazardous Waste Management Facilities at the Topock Compressor Station* (Mittelhauser 1986) that was reviewed and approved by DTSC. Samples were initially collected on a grid and additional confirmation samples were collected as indicated. These samples were analyzed for Title 22 metals, Cr(VI), fluoride, and soil pH.

Results of the samples collected from the sample trench are presented in Table 5-7. The results of the final confirmation samples (PPT-4_2, and PPT-4_3) indicate that the COPCs were at levels below cleanup objectives (i.e., established background concentrations).

5.2.3.3 Status and Summary

Based on these results, this SWMU was considered clean closed (Mittelhauser 1990a). A closure certification acceptance letter that included this SWMU was issued by DTSC on June 26, 1995 (DTSC 1995). DTSC, however, has requested that additional analysis be conducted for VOCs, TPH, and SVOCs in soil at SWMU 8 (DTSC 2006a).

5.2.4 SWMU 9 – Transfer Sump

The transfer sump was located in the southern end of the lower yard (Figure 5-1). From 1969 to October 1985, effluent containing chromium from the chromate reduction tank (SWMU 6; Unit 4.7) was routed through the transfer sump to the precipitation tank (SWMU 7; Unit 4.9). In approximately 1974, the transfer sump also started to receive wastewater from an OWS (either directly or through the chromate reduction tank) (Kearny 1987). The transfer sump was removed from service in October 1989.

The concrete sump measured about 3 feet in diameter and 20 feet deep, of which 18.5 feet was set below grade. The sump was fitted with a concrete cover.

5.2.4.1 Closure Activities

Closure of the transfer sump was accomplished during Phase 2 closure activities performed from November 1989 through March 1990. The steps taken during closure of the transfer sump included:

- Removal of the surface soil around the manhole of the sump that was visibly stained with oil; approximately 2 cubic feet of stained soil was removed and disposed of as hazardous waste.

- Removal of sludge and water in the sump followed by hydroblasting of the concrete sump; the sludge and hydroblast water was containerized and disposed of as a hazardous waste.
- Demolition of the sump in place; the concrete rubble was found to be non-hazardous and was used as fill onsite.
- Collection of confirmation samples.
- Backfilling of the pit with local material and final grading.

5.2.4.2 Confirmation Samples

Following removal of the sump, a sample was collected from the base of the excavation. This sample (Sump TS-3) was collected using a trowel at a shallow depth of less than 0.5 foot.[19] The location of this sample is shown in Figure 5-2. This sample was analyzed for Title 22 metals, Cr(VI), fluoride, and soil pH.

Results of the sample collected from the base of the excavation are presented in Table 5-8. Concentrations of all parameters in the soil sample were less than cleanup objectives (i.e., established background concentrations).

5.2.4.3 Status and Summary

Based on these results, this SWMU was considered clean closed (Mittelhauser 1990a). A closure certification acceptance letter that included this SWMU was issued by DTSC on June 26, 1995 (DTSC 1995). DTSC, however, has requested that additional analysis be conducted for VOCs, TPH, and SVOCs in soil at SWMU 9 (DTSC 2006a).

5.2.5 Units 4.3, 4.4 and 4.5 – Former Oily Water Treatment System

The former oily water treatment system consisted of the oil/water holding tank (Unit 4.3), the OWS (Unit 4.4), the portable waste oil storage tank (Unit 4.5), and the interconnecting piping. Closure of these facilities was performed between November 1989 through March 1990 in general accordance with the *Work Plan for Removal of the Oil Water Separator System, Topock Compressor Station* (Mittelhauser 1989). These three units were identified in the USEPA RFA but were not designated as SWMUs or AOCs by DTSC in the CACA (DTSC 1996).

Complete details regarding the closure of this system are presented in the *Closure Activity Report, Oil Water Separator System, Topock Compressor Station* (Mittelhauser 1990b). This report includes a description of the closure activities and contains the data from disposal characterization sampling, disposal manifesting information, and ultimate disposal locations. A summary of the closure activities for this system is provided below.

5.2.5.1 Unit 4.3 – Oil/Water Holding Tank

The oil/water holding tank consisted of a 3,000-gallon cylindrical steel tank mounted horizontally on two concrete supports; the area beneath the tank was unpaved.

[19] The bottom of the excavation was at 18.5 feet bgs, so this sample was collected from 18.5 to 19 feet bgs.

Closure Activities. The oil/water holding tank was closed and removed between November 1989 and March 1990. The steps taken during closure of the oil/water holding tank included:

- Hydroblasting of the steel tank; the hydroblast water was containerized and disposed of as hazardous waste.
- Removal of the tank from its foundation.
- The tank was cut up; due to the presence of oily sludge deposits in the tank that could not be removed, the tank was disposed of as hazardous waste.
- Removal of the concrete foundation; the tank foundation was not visibly contaminated and was therefore used as fill at the station.
- Soil beneath the tank and concrete foundation were inspected and found not to be visibly contaminated; therefore, no confirmation samples were collected from this area.

Status and Summary. Mittelhauser concluded that all contaminated soil had been removed. The soil cleanup standard was 10,000 ppm, per LUFT manual guidance (Mittelhauser 1990b). DTSC has requested that additional analysis be conducted for metals, Cr(VI), pH, VOCs, TPH, and SVOCs in soil at Unit 4.3 (DTSC 2006a).

5.2.5.2 Unit 4.4 – Oil/Water Separator

The OWS was approximately 4.5 feet deep, 15 feet long, and 6 feet wide, and it was constructed of 6-inch-thick concrete. The unit was set below grade (i.e., the top of the unit was at grade).

Closure Activities. The steps taken during closure of the OWS included:

- Hydroblasting of the concrete OWS; the hydroblast water was containerized and disposed of as hazardous waste.
- The concrete OWS was broken up; due to oily sludge that could not be adequately removed, a majority of the concrete was disposed of as hazardous waste.
- Approximately 14 cubic yards of visibly-stained soil were excavated and removed from the area around the former OWS; the soil was disposed of as hazardous waste.
- Collection of three initial confirmation samples.
- Removal of another 5 cubic yards of soil; the soil was disposed of as a hazardous waste.
- Collection of another confirmation sample.
- Backfilling of the pit with local material and final grading.

Confirmation Samples. After removal of the OWS and visibly-stained soil, three soil samples were collected from the excavation (1042-55-10, 1042-55-11, and 1042-55-12) and analyzed for TPH using USEPA Method 8015. Based on the work plan (Mittelhauser 1989), the cleanup criterion for soil was established at 10,000 mg/kg TPH. Sample 1042-55-12 contained TPH at a concentration exceeding the cleanup criterion, so an additional 5 cubic

yards of soil were excavated from that area. A fourth confirmation sample (1042-55-32) was then collected. The locations of the samples are depicted in Figure 5-2.

The results of the confirmation samples are summarized in Table 5-9. Concentrations of TPH in the three final confirmation samples (1042-55-10, 1042-55-11, and 1042-55-32) are all well below the cleanup criterion of 10,000 mg/kg TPH.

Based on the nature of the wastewater handled by the oily water treatment system, COPCs identified for the OWS consist of Cr(T), Cr(VI), copper, lead, nickel, zinc, TPH, and PAHs (Section 4.0). The confirmation samples were only analyzed for TPH; therefore, no metals data are available. However, because metals PAHs, and TPH were mixed within the wastewater, leakage of wastewater to surrounding soil should have resulted in collocated metals and TPH impacts. Because elevated TPH impacts have been physically removed, the existing confirmation data suggest that associated potential metals and PAH impacts should also have been removed.

Status and Summary. Soil samples collected in this area indicate that residual TPH-diesel concentrations range from ND to 18 mg/kg. The samples were not analyzed for constituents heavier than diesel. Mittelhauser concluded that all contaminated soil had been removed (Mittelhauser 1990b). DTSC has requested that additional analysis be conducted for VOCs and TPH, and SVOCs in soil at Unit 4.4 (DTSC 2006a).

5.2.5.3 Unit 4.5 – Portable Waste Oil Holding Tank

The potable waste oil storage tank consisted of an enclosed steel tank approximately 6 feet long and 2 feet in diameter mounted horizontally on a trailer. The tank was used to temporarily hold waste oil skimmed from the OWS. The portable tank was positioned on a bermed concrete pad adjacent to the OWS.

Closure Activities. The steps taken during closure of the portable waste oil storage tank included:

- Waste oil in the tank was transferred to the waste oil storage tank (Unit 4.6) and was ultimately transported offsite for recycling.
- The empty tank was then transported offsite to Chemical Transportation for disposal or recycling.
- The concrete pad was broken up and disposed of along with the concrete from the OWS.

Because the portable tank and pad were directly adjacent to the OWS, confirmation samples collected for the OWS also represent this unit. The constituents of concern are the same as for the OWS.

Status and Summary. Mittelhauser concluded that all contaminated soil had been removed. The cleanup standard was 10,000 pm TPH, per LUFT manual guidance (Mittelhauser 1990b). The highest residual concentration is in this area; a sample contained 4,300 mg/kg. TPH quantified as heavier than diesel. DTSC has requested that additional analysis be conducted for VOCs and TPH in soil at Unit 4.5 (DTSC 2006a).

5.2.6 AOC 18 – Former Two-step Wastewater Treatment System Piping

The hazardous waste treatment system closure plan (Mittelhauser 1986) designated by letter each of the pipelines that conveyed wastewater to the former two-step wastewater treatment system, through the system, and from the system to the old evaporation ponds. The layout of the former two-step wastewater treatment system piping is presented in Figure 5-4. Table 5-10 defines the piping segments associated with the former two-step wastewater treatment system by letter and number. The letter/number designation is used in the following discussion of the piping sections.

5.2.6.1 Closure Activities

Closure of the former two-step wastewater treatment system piping was accomplished during Phase 1 and Phase 2 closure activities performed from November 1988 through March 1990 (Mittelhauser 1990a). The steps taken during closure of the former treatment system piping included:

- With the exception of Sections A-3, E, and H, all pipeline segments were pressure tested to assess potential leakage. Section A-3 was not tested because it is still in use as part of the current wastewater treatment system. Section E was a short section (15 feet) of exposed piping that could be visually inspected, and Section H could not be pressure tested because a portion of it consisted of clay pipe.
- Much of the wastewater treatment system piping was removed during the closure activities. Pipeline sections that were removed included A-1, A-2, B-1, C-1, D-1, D-2, portion of D-3, E-1, F-1, F-2, F-3, portion of F-5, portion of G-1, H-1, H-2 H-3, H-4, and J-2. The interiors of much of the removed piping had a visible green sludge coating; this piping was disposed of as hazardous waste.
- The remaining portions of sections D-3 and F-5 were capped in place and the remaining section of G-1 was encased in concrete.
- Sections G-2 and G-3 were closed in place without removal; these sections consisted of two long sections (approximately 1,500 feet) of 3-inch PVC and polyethylene piping that served to connect the former evaporation ponds with the compressor station. The piping passed the pressure test, and a portion crosses Bat Cave Wash, on a high pipeline bridge, making access a challenge.
- Removal and proper disposal of visibly-stained soils and soil beneath pipe joints and valves that leaked during pressure testing.
- Collection of confirmation samples.
- Backfilling excavated areas.

5.2.6.2 Confirmation Samples

After removal of visibly-stained soils and soils beneath pipe joints and valves that leaked during pressure testing, confirmation samples were collected. Samples were collected from 18 locations along the former pipelines; the locations targeted points along the pipelines with the highest likelihood of a release based on results of pressure testing, locations of valves and joints, and visual evidence of leaking. The samples consisted of PA-3, PC-1, PF-6,

PF-8, PG-2, and PH-1 through PH-13. The locations of these samples are presented on Figure 5-4. The samples were collected from various depths between 1 and 6 feet. Each of these samples was analyzed for Title 22 metals, Cr(VI), fluoride, soil pH, and specific conductance.

Results of the sampling conducted along the former pipelines are presented in Table 5-11. Concentrations of all parameters in the soil sample were less than cleanup objectives.

5.2.6.3 Status and Summary

Based on these results, the former treatment system piping was considered clean closed (Mittelhauser 1990a). A closure certification acceptance letter dated June 26, 1995, was issued and included this portion of the former hazardous waste management facility (DTSC 1995). DTSC, however, has requested that additional analysis be conducted for VOCs, TPH, and SVOCs in soil at AOC 18 (DTSC 2006a).

5.2.7 Former 300B Pipeline Liquids Tank

The Former 300B Pipeline Liquids Tank was a 900-gallon aboveground tank used to collect pipeline liquids from the 300B natural gas pipeline.

5.2.7.1 Closure Activities

Closure activities at the Former 300B Pipeline Liquids Tank were performed between 1995 and 1996. The steps taken during closure of the Former 300B Pipeline Liquids tank included:

- Removal of the tank (removing residual liquids from the tanks; removing and disposing of the tank at an approved facility; and emptying, disconnecting, and capping the abandoned pipe ends).
- Excavation of soil to a total depth of 5.5 feet bgs.
- Collection of confirmation samples.

5.2.7.2 Confirmation Samples

Four rounds of excavation were performed to 5.5 feet bgs, and confirmation samples were collected after each round of excavation. Samples collected during the last two sampling events indicated that the soil remaining in place below and adjacent to the excavation contained TRPH at concentrations ranging from less than analytical detection limits to 150 mg/kg, below the TRPH target cleanup of 1,000 mg/kg. Results of the confirmation samples are presented in Table 5-12.

5.2.7.3 Status and Summary

Based on the closure data, San Bernardino County, County Fire Department, Hazardous Materials Division issued a letter on June 9, 1997 confirming the completion of the site investigation and remedial action for the contaminated soil at this site. DTSC, however, has requested that additional analysis be conducted at this site for TPH, metals, SVOCs, VOCs, PAHs, and PCBs (DTSC 2007e).

5.3 SWMUs, AOCs, and Other Undesignated Areas to be Carried Forward in RFI/RI

The SWMUs, AOCs, and other undesignated areas in this group will be carried forward in the RCRA Corrective Action and CERCLA site investigative programs. For most of the SWMUs, AOCs, and other undesignated areas in this group, data have been collected during site investigative activities dating to the start of the RFI in 1996. SWMUs, AOCs, and other undesignated areas in this group are as follows:

- SWMU 1 – Former Percolation Bed
- SWMU 2 – Inactive Injection Well (PGE-08) for groundwater only
- AOC 1 – Area around Former Percolation Bed
- AOC 4 – Debris Ravine
- AOC 5 – Cooling Tower A
- AOC 6 – Cooling Tower B
- AOC 7 – Hazardous Materials Storage Area
- AOC 8 – Paint Lockers
- AOC 9 – Southeast Fence Line (Outside Visitor Parking Area)
- AOC 10 – East Ravine
- AOC 11 – Topographic Low Area
- AOC 12 – Fill Area
- AOC 13 – Unpaved Areas within the Compressor Station
- AOC 14 – Railroad Debris Site
- AOC 15 – Auxiliary Jacket Water Cooling Pumps
- AOC 16 – Sandblast Shelter
- AOC 17 – Onsite Septic System
- AOC 19 – Former Cooling Liquid Mixing Area
- AOC 20 – Industrial Floor Drains
- Potential Pipe Disposal Area

Previous sampling has not been conducted at AOCs 7, 8, 11, 12, 16, and the Potential Pipe Disposal Area. Through review of information associated with historic compressor station operations, these areas have been identified as potentially impacted, although no site investigation sampling has been performed in these areas to date. The remaining SWMUs, AOCs and other undesignated areas in this group have been evaluated during the numerous phases of investigation conducted at the Topock site since RFI activities began in 1996.

Based upon information pertaining to past disposal practices, each of the 20 SWMUs, AOCs, and other undesignated areas in this group will either be addressed in Volume 2 (Groundwater) of the RFI/RI, and/or in Volume 3 (Soil) of the RFI/RI. Results of investigations, both past and present, will be incorporated into Volumes 2 and 3 of the RFI/RI to complete the site investigative requirements of the RCRA Corrective Action and CERCLA processes at these 20 SWMUs, AOCs, and other undesignated areas.

The SWMUs and AOCs to be addressed in Volume 2 (Groundwater) of the RFI/RI are:

- SWMU 1 – Former Percolation Bed
- SWMU 2 – Inactive Injection Well (PGE-08)
- AOC 1 – Area Around Former Percolation Bed

The SWMUs, AOCs and other undesignated areas to be addressed in Volume 3 (Soil) of the RFI/RI are:

- SWMU 1 – Former Percolation Bed
- AOC 1 – Area Around Former Percolation Bed
- AOC 4 – Debris Ravine
- AOC 5 – Cooling Tower A
- AOC 6 – Cooling Tower B
- AOC 7 – Hazardous Materials Storage Area
- AOC 8 – Paint Lockers
- AOC 9 – Southeast Fence Line (Outside Visitor Parking Area)
- AOC 10 – East Ravine
- AOC 11 - Topographic Low Area
- AOC 12 – Fill Area
- AOC 13 – Unpaved Areas within the Compressor Station
- AOC 14 – Railroad Debris Site
- AOC 15 – Auxiliary Jacket Water Cooling Pumps
- AOC 16 – Sandblast Shelter
- AOC 17 – Onsite Septic System
- AOC 19 – Former Cooling Liquid Mixing Area
- AOC 20 – Industrial Floor Drains
- Potential Pipe Disposal Area

TABLE 5-1
Status of SWMUs, AOCs, and Other Undesignated Areas Within the Site Investigation and Closure Process
RCRA Facility Investigation/Remedial Investigation (Volume 1), PG&E Topock Compressor Station, Needles, California

Status	Sites
SWMUs and AOCs for which Site Investigation and Closure Process is Complete	SWMU 2 – Inactive Injection Well PGE-8 (soil only)
	SWMU 3 – PG&E Abandoned Well #6
	SWMU 4 – PG&E Abandoned Well #7
	SWMU 7 – Precipitation Tank
	SWMU 10 – Old Evaporation Ponds
	AOC-2 – Area Around Inactive Injection Well PGE-8
	AOC 3 – Area Around PG&E Inactive Wells #6 & #7 (PGE-06 and PGE-07)
	Unit 4.6 – Waste Oil Storage Tank
Previously Closed SWMUs and AOCs for Which Additional Investigation Has Been Requested	SWMU 5 – Sludge Drying Beds
	SWMU 6 – Chromate Reduction Tank
	SWMU 8 – Process Pump Tank
	SWMU 9 – Transfer Sump
	Unit 4.3 – Oil/Water Holding Tank
	Unit 4.4 – Oil/Water Separator
	Unit 4.5 – Portable Waste Oil Storage Tank
	AOC 18 – Former Two-step Wastewater Treatment System Piping
	Former 300B Pipeline Liquids Tank
SWMUs, AOCs, and Other Undesignated Areas	SWMU 1 – Former Percolation Bed
To Be Carried Forward in RFI/RI	SWMU 2 – Inactive Injection Well PGE-8 (for groundwater only)
	AOC 1 – Area Around Former Percolation Bed
	AOC 4 – Debris Ravine
	AOC 5 – Cooling Tower A
	AOC 6 – Cooling Tower B
	AOC 7 – Hazardous Materials Storage Area
	AOC 8 – Paint Locker
	AOC 9 – Southeast Fence Line (Outside Visitor Parking Area)
	AOC 10 – East Ravine
	AOC 11 – Topographic Low Areas
	AOC 12 – Fill Area
	AOC 13 – Unpaved Areas Within the Compressor Station
	AOC 14 – Railroad Debris Site
	AOC 15 – Auxiliary Jacket Water Cooling Pumps
	AOC 16 – Sandblast Shelter
	AOC 17 – Onsite Septic System
	AOC 19 – Former Cooling Chemical Mixing Shed
	AOC 20 – Industrial Floor Drains
	Potential Pipe Disposal Area

TABLE 5-2

Soil Sample Results

SWMU 7 (Unit 4.9) - Precipitation Tank

RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted	
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19		43	20	16	0.123	1.7	53	1	0.5	5	50	135	914	
Sample ID	**Location**	**Depth* ft**	**Sample Type**	**Sample Date**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Hexavalent Chromium**	**Total Chromium**	**Copper**	**Lead**	**Mercury**	**Molybdenum**	**Nickel**	**Silver**	**Selenium**	**Thallium**	**Vanadium**	**Zinc**	**Fluoride**	**pH in pH units**
PT-3_2	PT-3	2	N	2/8/1989	0.3 U	**2.4**	**110**	1 U	**0.9**	**8**	1 U	**38**	**16**	**10**	**0.015**	1 U	**19**	1 U	0.5 U	5 U	**28**	**45**	**424**	11.93
PT-3_4	PT-3	4	N	2/8/1989	0.3 U	**1.5**	**100**	1 U	0.5 U	**9**	1 U	**26**	**15**	**6**	0.002 U	1 U	**24**	1 U	0.5 U	5 U	**30**	**34**	**421**	11.37
PT-4_1.5	PT-4	1.5	N	12/9/1988	0.3 U	**1.78**	**180**	1 U	**0.6**	**8.6**	1 U	**22**	**8**	**2.7**	**0.007**	1 U	**22**	1 U	0.5 U	5 U	**29**	**64**	**804**	10.23

Notes:

N	primary sample
FD	field duplicate
mg/kg	milligrams per kilograms
---	not analyzed
U	not detected at the reporting limit listed
J	estimated value
	Detected results are shown in bold

*Depths shown are the depth below the bottom of the excavation which was approximately 2 feet deep. The excavation was backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-3
Soil Sample Results
SWMU 10 (Unit 4.11) - Old Evaporation Ponds
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	18	5.6	449	0.6	1.5	8	0.5	25	27	15	0.6	6	14	3	1.5	15	42	54			
Sample ID	Location	Depth, ft bgs	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in umhos/cm
P1-1_0.5	P1-1	0.5	N	10/14/1993	5 U	1.4	220	0.1	1 U	6	0.1 U	15	5 U	12	0.1 U	5 U	11	1	2.2	0.5 U	35	33	2.4	8.9	1,040
P1-1_2.5	P1-1	2.5	N	10/14/1993	5 U	1.1	82	0.3	1 U	5 U	0.1 U	9	5 U	8	0.1 U	5 U	8	1 U	1.7	0.5 U	22	20	4.5	9	1,050
P1-1_4.5	P1-1	4.5	N	10/14/1993	5 U	3	76	0.5	1 U	5 U	0.1 U	13	5 U	14	0.1 U	5 U	9	1	2.3	0.5 U	20	29	4.3	8.5	1,810
P1-2_0.5	P1-2	0.5	N	10/14/1993	5 U	2.7	240	0.1	1 U	6	0.1 U	16	5 U	8	0.1 U	5 U	11	1	1.7	0.5 U	28	27	3.1	8.6	4,170
P1-2_2.5	P1-2	2.5	N	10/14/1993	5 U	4.8	100	0.1 U	1 U	5 U	0.1 U	36	5 U	5	0.1 U	5 U	13	1 U	2.1	0.5 U	25	33	1.7	9.3	1,660
P1-2_4.5	P1-2	4.5	N	10/14/1993	5 U	3.1	200	0.1 U	1 U	5 U	0.1 U	1 U	5 U	5 U	0.1 U	5 U	5 U	1 U	2	0.5 U	9	9	1.3	9.7	455
P1-3_0.5	P1-3	0.5	N	10/15/1993	5 U	3.1	270	0.1	1 U	5 U	0.2	8	5 U	8	0.1 U	5 U	6	1 U	2.3	0.5 U	13	19	8.3	9.1	479
P1-3_2.5	P1-3	2.5	N	10/15/1993	5 U	4.6	320	0.1	1 U	5 U	0.2	13	5 U	10	0.1 U	5 U	7	1	1.9	0.5 U	12	19	14.2	9.4	855
P1-3_4.5	P1-3	4.5	N	10/15/1993	5 U	2.3	150	0.1	1 U	5 U	0.1 U	5	5 U	13	0.1 U	5 U	5 U	1 U	1.7	0.5 U	8	17	1.6	9	2,140
P1-4_0.5	P1-4	0.5	N	10/15/1993	5 U	4.7	270	0.1 U	1 U	9	0.1 U	7	5 U	9	0.1 U	5 U	7	1 U	1.3	0.5 U	15	21	1.6	8.5	1,650
P1-4_2.5	P1-4	2.5	N	10/15/1993	5 U	3	43	0.2	1 U	6	0.1 U	8	5 U	10	0.1 U	5 U	8	1 U	1.9	0.5 U	17	23	2.7	9	1,950
P1-4_4.5	P1-4	4.5	N	10/15/1993	5 U	3	67	0.3	1 U	5 U	0.1 U	7	5 U	14	0.1 U	5 U	8	1 U	1	0.5 U	19	26	4.8	9.1	2,100
P1-5_0.5	P1-5	0.5	N	10/15/1993	5 U	2	10	0.2	1 U	5 U	0.1	17	5 U	11	0.1 U	5 U	11	1 U	0.7	0.5 U	23	31	6.8	9	293
P1-5_2.5	P1-5	2.5	N	10/15/1993	5 U	2.4	88	0.1	1 U	5 U	0.1 U	29	5 U	7	0.1 U	5 U	7	1 U	0.3 U	0.5 U	15	21	4.3	9	237
P1-5_4.5	P1-5	4.5	N	10/15/1993	5 U	2.9	90	0.1 U	1 U	5 U	0.1 U	10	5 U	5	0.1 U	5 U	13	1 U	2	0.5 U	19	28	3.7	9.3	246
P1-6_0.5	P1-6	0.5	N	10/15/1993	5 U	2.9	74	0.1 U	1 U	7	0.1 U	9	5 U	5 U	0.1 U	5 U	6	1 U	3.1	0.5 U	14	20	2.1	8.9	1,210
P1-6_2.5	P1-6	2.5	N	10/15/1993	5 U	3.4	51	0.1 U	1 U	8	0.1 U	7	5 U	5 U	0.1 U	5 U	6	1 U	2	0.5 U	13	13	1.4	9.7	671
P1-6_4.5	P1-6	4.5	N	10/15/1993	5 U	3.3	80	0.1	1 U	5 U	0.1 U	11	5 U	5	0.1 U	5 U	9	1 U	0.5	0.5 U	19	23	3.4	9.7	670
P1-7_0.5	P1-7	0.5	N	10/15/1993	5 U	3.3	220	0.1	1 U	5 U	0.1 U	10	5 U	7	0.1 U	5 U	7	1 U	0.3	0.5 U	14	21	1.7	8.6	1,720
P1-7_2.5	P1-7	2.5	N	10/15/1993	5 U	1.8	61	0.1	1 U	5 U	0.1 U	9	5 U	5 U	0.1 U	5 U	7	1 U	0.3 U	0.5 U	18	25	3.6	8.9	1,230
P1-7_4.5	P1-7	4.5	N	10/15/1993	5 U	0.2 U	250	0.4	1 U	5 U	0.1 U	8	5	14	0.1 U	5 U	12	1 U	0.3 U	0.5 U	17	27	5.8	8.3	1,650
P2-1_0.5	P2-1	0.5	N	10/12/1993	5 U	3.5	140	0.1 U	1 U	5	0.1 U	13	5 U	9	0.1 U	5 U	6	1 U	4.7	0.5 U	24	27	1.8	8.6	22,200
P2-1_2.5	P2-1	2.5	N	10/12/1993	5 U	2.4	91	0.1 U	1 U	6	0.1 U	4	5 U	6	0.1 U	5 U	5 U	1 U	3.8	0.5 U	10	7	0.6	8.4	3,349
P2-1_4.5	P2-1	4.5	N	10/12/1993	5 U	4.1	68	0.1 U	1 U	5 U	0.1 U	3	5 U	6	0.1 U	5 U	5 U	1 U	2	0.5 U	10	10	0.7	8.6	3,840
P2-1_6.5	P2-1	6.5	N	10/12/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1,690
P2-2_0.5	P2-2	0.5	N	10/12/1993	5 U	3.6	220	0.1	1 U	5 U	0.1 U	17	5 U	10	0.1 U	5 U	10	1 U	4.2	0.5 U	18	33	2.2	8.4	3,800
P2-2_2.5	P2-2	2.5	N	10/12/1993	5 U	3.5	110	0.1	1 U	7	0.1 U	17	5 U	9	0.1 U	5 U	11	1 U	4.1	0.5 U	31	31	1.5	9.1	270
P2-2_4.5	P2-2	4.5	N	10/12/1993	5 U	4	50	0.1	1 U	5 U	0.1 U	5	5 U	7	0.1 U	5 U	6	1 U	0.3 U	0.5 U	8	13	2.6	9.3	340

TABLE 5-3
Soil Sample Results
SWMU 10 (Unit 4.11) - Old Evaporation Ponds
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	18	5.6	449	0.6	1.5	8	0.5	25	27	15	0.6	6	14	3	1.5	15	42	54			
Sample ID	Location	Depth, ft bgs	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in umhos/cm
P2-3_0.5	P2-3	0.5	N	10/12/1993	5 U	4.6	290	0.1	1 U	6	0.1 U	15	5 U	10	0.1 U	5 U	9	1 U	1.3	0.5 U	18	28	2.4	8.5	9,170
P2-3_2.5	P2-3	2.5	N	10/12/1993	5 U	3.4	280	0.1 U	1 U	6	0.1 U	16	5 U	9	0.1 U	5 U	11	1 U	1.5	0.5 U	31	30	2.4	8.9	2,360
P2-3_4.5	P2-3	4.5	N	10/12/1993	5 U	3.4	140	0.1	1 U	9	0.1 U	25	5 U	9	0.1 U	5 U	29	1 U	1.1	0.5 U	38	38	2.7	9.3	2,570
P2-4_0.5	P2-4	0.5	N	10/12/1993	5 U	3.7	220	0.1	1 U	5	0.1 U	16	5 U	9	0.1 U	5 U	10	1 U	1.3	0.5 U	24	28	0.7	9	3,100
P2-4_2.5	P2-4	2.5	N	10/12/1993	5 U	5	290	0.1	1 U	7	0.1 U	12	5 U	10	0.1 U	5 U	12	1 U	1.4	0.5 U	33	33	1	9	2,920
P2-4_4.5	P2-4	4.5	N	10/12/1993	5 U	4.5	210	0.1	1 U	6	0.1 U	23	5 U	10	0.1 U	5 U	14	1 U	1.4	0.5 U	36	39	2	9.1	3,590
P2-4_6.5	P2-4	6.5	N	10/12/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,920
P2-4_9.5	P2-4	9.5	N	10/12/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,130
P2-5_0.5	P2-5	0.5	N	10/13/1993	5 U	3.6	370	0.1	1 U	5 U	0.1 U	10	5 U	6	0.1 U	5 U	7	1 U	1.2	0.5 U	16	23	6.2	8.9	14,400
P2-5_2.5	P2-5	2.5	N	10/13/1993	5 U	4.8	84	0.1 U	1 U	5 U	0.1 U	11	5 U	8	0.1 U	5 U	6	1 U	1.3	0.5 U	15	22	4.4	8.8	9,210
P2-5_4.5	P2-5	4.5	N	10/13/1993	5 U	2.9	66	0.1 U	1 U	5 U	0.1 U	7	8	5 U	0.1 U	5 U	5 U	1 U	2.8	0.5 U	10	16	3.2	8.9	6,790
P2-5_6.5	P2-5	6.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5,540
P2-5_9.5	P2-5	9.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8,000
P2-5_14.5	P2-5	14.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1,420
P2-6_0.5	P2-6	0.5	N	10/13/1993	5 U	3.2	230	0.1	1 U	5	0.1 U	9	5 U	7	0.1 U	5 U	6	1 U	4.2	0.5 U	16	24	1.5	8.8	5,290
P2-6_2.5	P2-6	2.5	N	10/13/1993	5 U	3.3	130	0.1 U	1 U	6	0.1 U	22	5 U	5	0.1 U	5 U	10	1 U	0.4	0.5 U	22	35	1.4	8.9	2,640
P2-6_4.5	P2-6	4.5	N	10/13/1993	5 U	0.2	72	0.1 U	1 U	5 U	0.1 U	46	5 U	5 U	0.1 U	5 U	7	1 U	2.3	0.5 U	13	19	1	8.6	3,940
P2-6_6.5	P2-6	6.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3,020
P2-6_9.5	P2-6	9.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,230
P2-7_0.5	P2-7	0.5	N	10/13/1993	5 U	5.1	250	0.1	1 U	5 U	0.1 U	11	5 U	7	0.1 U	5 U	10	1 U	1.8	0.5 U	18	29	2.3	8.6	10,100
P2-7_2.5	P2-7	2.5	N	10/13/1993	5 U	3.3	120	0.1 U	1 U	5 U	0.1 U	11	5 U	5 U	0.1 U	5 U	9	1 U	1.7	0.5 U	19	24	1.2	9.1	3,420
P2-7_4.5	P2-7	4.5	N	10/13/1993	5 U	3.3	28	0.1 U	1 U	5 U	0.1 U	4	5 U	5 U	0.1 U	5 U	5 U	1 U	1.8	0.5 U	9	12	1	8.7	5,080
P2-7_6.5	P2-7	6.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5,180
P2-7_9.5	P2-7	9.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5,520
P2-7_14.5	P2-7	14.5	N	10/13/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1,300
P3-1_0.5	P3-1	0.5	N	10/18/1993	5 U	2.9	92	0.1 U	1 U	5 U	0.1 U	11	6	9	0.1 U	5 U	6	1 U	1.3	0.5 U	19	19	1.4	8.9	5,830
P3-1_2.5	P3-1	2.5	N	10/18/1993	5 U	1.9	73	0.1 U	1 U	7	0.1 U	17	6	8	0.1 U	5 U	9	1 U	0.4	0.5 U	24	31	1.4	9.1	3,640
P3-1_4.5	P3-1	4.5	N	10/18/1993	5 U	1.9	140	0.1 U	1 U	6	0.1 U	19	5	8	0.1 U	5 U	10	1 U	0.6	0.5 U	25	37	1.4	9	2,430

TABLE 5-3
Soil Sample Results
SWMU 10 (Unit 4.11) - Old Evaporation Ponds
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	18	5.6	449	0.6	1.5	8	0.5	25	27	15	0.6	6	14	3	1.5	15	42	54			
Sample ID	Location	Depth, ft bgs	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in umhos/cm
P3-2_0.5	P3-2	0.5	N	10/18/1993	5 U	3.1	180	0.1 U	1 U	5	0.1 U	22	9	10	0.1 U	5 U	9	1 U	2.1	0.5 U	34	35	0.9	9.1	1,130
P3-2_2.5	P3-2	2.5	N	10/18/1993	5 U	1.9	93	0.1 U	1 U	7	0.1 U	25	10	9	0.1 U	5 U	10	1 U	0.5	0.5 U	34	39	1.6	9.1	1,600
P3-2_4.5	P3-2	4.5	N	10/18/1993	5 U	5	40	0.4	1 U	5 U	0.1 U	14	8	20	0.1 U	5 U	9	1 U	0.3 U	0.5 U	29	45	2.1	8.5	3,420
P3-2_6.5	P3-2	6.5	N	10/18/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,490
P3-3_0.5	P3-3	0.5	N	10/18/1993	5 U	2.9	170	0.1 U	1 U	5 U	0.1 U	15	8	9	0.1 U	5 U	7	1 U	0.5	0.5 U	23	26	0.8	8.7	14,700
P3-3_2.5	P3-3	2.5	N	10/18/1993	5 U	1.8	110	0.1 U	1 U	6	0.1 U	17	9	10	0.1 U	5 U	7	1 U	0.7	0.5 U	27	41	1.1	8.8	1,620
P3-3_4.5	P3-3	4.5	N	10/18/1993	5 U	2.7	110	0.1 U	1 U	7	0.1 U	24	11	11	0.1 U	5 U	9	1 U	0.6	0.5 U	38	36	1.2	8.8	1,930
P3-4_0.5	P3-4	0.5	N	10/19/1993	5 U	3.8	300	0.1 U	1 U	6	0.1 U	23	7	11	0.1 U	5 U	10	2	1.7	0.5 U	28	30	1.2	8.5	1,120
P3-4_2.5	P3-4	2.5	N	10/19/1993	5 U	1.6	120	0.1 U	1 U	5 U	0.1 U	14	5 U	7	0.1 U	5 U	5 U	1 U	0.4	0.5 U	17	22	0.8	9.2	661
P3-4_4.5	P3-4	4.5	N	10/19/1993	5 U	1.7	64	0.1 U	1 U	5 U	0.1 U	11	6	5	0.1 U	5 U	7	1 U	0.6	0.5 U	19	20	2.4	9.6	1,180
P3-5_0.5	P3-5	0.5	N	10/19/1993	5 U	3.1	290	0.1 U	1 U	5	0.1 U	13	7	12	0.1 U	5 U	7	1 U	0.8	0.5 U	25	22	0.9	8.4	5,520
P3-5_2.5	P3-5	2.5	N	10/19/1993	5 U	1.9	93	0.1 U	1 U	5	0.1 U	16	7	7	0.1 U	5 U	7	1 U	0.7	0.5 U	25	25	0.7	8.7	1,750
P3-5_4.5	P3-5	4.5	N	10/19/1993	5 U	1.8	78	0.1 U	1 U	7	0.1 U	21	9	8	0.1 U	5 U	11	1 U	0.8	0.5 U	30	33	0.7	8.5	1,750
P3-6_0.5	P3-6	0.5	N	10/19/1993	5 U	5.2	430	0.1 U	1 U	5 U	0.1 U	13	9	15	0.1 U	5 U	6	1	3.1	0.5 U	21	24	4.9	8.7	7,320
P3-6_2.5	P3-6	2.5	N	10/19/1993	5 U	4.6	220	0.1 U	1 U	5 U	0.1 U	13	5 U	13	0.1 U	5 U	7	1	0.8	0.5 U	22	20	2.6	8.4	12,200
P3-6_4.5	P3-6	4.5	N	10/19/1993	5 U	4.9	120	0.3	1 U	8	0.1 U	26	10	8	0.1 U	5 U	12	1 U	0.3	0.5 U	26	33	1.6	8.8	4,090
P3-6_6.5	P3-6	6.5	N	10/20/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,340
P4-1_0.5	P4-1	0.5	N	10/20/1993	5 U	1.3	82	0.1	1 U	7	0.1 U	20	28	6	0.1 U	5 U	10	1 U	3.8	0.5 U	41	42	1	9.1	7,810
P4-1_2.5	P4-1	2.5	N	10/20/1993	5 U	1.9	73	0.1 U	1 U	5	0.1 U	12	40	8	0.1 U	5 U	9	1 U	0.7	0.5 U	30	50	1.1	8.5	5,660
P4-1_4.5	P4-1	4.5	N	10/20/1993	5 U	3.4	220	0.8	1 U	6	0.1 U	20	31	21	0.1 U	5 U	16	1	0.3 U	0.5 U	35	57	2	8.1	4,360
P4-1_6.5	P4-1	6.5	N	10/20/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4,570
P4-1_9.5	P4-1	9.5	N	10/20/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	750
P4-2_0.5	P4-2	0.5	N	10/20/1993	5 U	1.4	120	0.1 U	1 U	6	0.1 U	10	29	5	0.1 U	5 U	6	1 U	0.9	0.5 U	28	39	0.7	9.2	739
P4-2_2.5	P4-2	2.5	N	10/20/1993	5 U	1.4	100	0.1	1 U	6	0.1 U	16	53	8	0.1 U	5 U	11	1	2.9	0.5 U	30	50	1.1	8.9	1,440
P4-2_4.5	P4-2	4.5	N	10/20/1993	5 U	2.4	150	0.1	1 U	5 U	0.1 U	4	16	7	0.1 U	5 U	5 U	1 U	0.6	0.5 U	10	18	0.9	9	703
P4-3_0.5	P4-3	0.5	N	10/20/1993	5 U	1.8	92	0.1 U	1 U	6	0.1 U	12	30	7	0.1 U	5 U	7	1 U	0.9	0.5 U	28	55	0.9	9.2	9,310
P4-3_2.5	P4-3	2.5	N	10/20/1993	5 U	1.5	84	0.1	1 U	6	0.1 U	15	34	9	0.1 U	5 U	9	1 U	1	0.5 U	33	44	1.2	9.2	13,200
P4-3_4.5	P4-3	4.5	N	10/20/1993	5 U	1.8	130	0.1	1 U	8	0.1 U	20	25	9	0.1 U	5 U	13	1 U	4.1	0.5 U	38	45	1.1	8.9	971

TABLE 5-3
Soil Sample Results
SWMU 10 (Unit 4.11) - Old Evaporation Ponds
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	18	5.6	449	0.6	1.5	8	0.5	25	27	15	0.6	6	14	3	1.5	15	42	54			
Sample ID	Location	Depth, ft bgs	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in umhos/cm
P4-4_0.5	P4-4	0.5	N	10/20/1993	5 U	2.9	250	0.1 U	1 U	15	0.1 U	19	75	7	0.1 U	5 U	24	1	1.7	0.5 U	53	49	0.7	8.4	1,370
P4-4_2.5	P4-4	2.5	N	10/20/1993	5 U	1.8	300	0.1	1	11	0.1 U	21	31	7	0.1 U	5 U	16	1 U	1.7	0.5 U	26	44	0.7	8.9	889
P4-4_4.5	P4-4	4.5	N	10/20/1993	5 U	2.2	160	0.1 U	1 U	7	0.1 U	16	30	8	0.1 U	5 U	8	1 U	1.7	0.5 U	32	50	1.1	8.7	786
P4-5_0.5	P4-5	0.5	N	10/21/1993	5 U	7.8	540	0.1	1 U	5 U	0.1 U	9	9	11	0.1 U	5 U	6	1 U	5.3	0.5 U	18	23	2	8.8	1,590
P4-5_2.5	P4-5	2.5	N	10/21/1993	5 U	3	90	0.1 U	1 U	5	0.1 U	13	33	5 U	0.1 U	5 U	9	1 U	0.3 U	0.5 U	21	41	0.9	9.5	409
P4-5_4.5	P4-5	4.5	N	10/21/1993	5 U	2.8	76	0.2	1	10	0.1 U	13	20	5 U	0.1 U	5 U	12	1 U	0.3 U	0.5 U	26	39	1.2	9.6	379
P4-6_0.5	P4-6	0.5	N	10/21/1993	5 U	4.6	610	0.1	1 U	5 U	0.1 U	10	70	10	0.1 U	5 U	8	1	1.2	0.5 U	24	57	3.2	8.7	4,170
P4-6_2.5	P4-6	2.5	N	10/21/1993	5 U	2.3	520	0.1 U	1	10	0.1 U	15	44	7	0.1 U	5 U	14	1	1	0.5 U	26	59	2	9.2	2,070
P4-6_4.5	P4-6	4.5	N	10/21/1993	5 U	2	84	0.1 U	1 U	5 U	0.1 U	13	25	5 U	0.1 U	5 U	9	1 U	0.3 U	0.5 U	22	39	1.5	8.7	1,600
P4-7_0.5	P4-7	0.5	N	10/21/1993	5 U	0.9	91	0.1	1 U	5 U	0.1 U	10	57	13	0.1 U	5 U	7	2	1.3	0.5 U	24	43	5.6	9	23,000
P4-7_2.5	P4-7	2.5	N	10/21/1993	5 U	0.9	170	0.1 U	1 U	8	0.1 U	18	69	9	0.1 U	5 U	13	1	1.5	0.5 U	31	59	5.1	9.4	14,300
P4-7_4.5	P4-7	4.5	N	10/21/1993	5 U	0.8	170	0.1	1 U	7	0.1 U	18	70	10	0.1 U	5	12	1	1.6	0.5 U	35	64	2.7	9	14,200
P4-7_6.5	P4-7	6.5	N	10/21/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9,950
P4-7_14.5	P4-7	14.5	N	10/21/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14,000
P4-7_19.5	P4-7	19.5	N	10/21/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13,000
P4-7_24.5	P4-7	24.5	N	10/21/1993	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,080

Notes:
ft bgs feet below ground surface
N primary sample
FD field duplicate
mg/kg milligrams per kilograms
--- not analyzed
U not detected at the reporting limit listed
J estimated value
Detected Results are shown in bold

Cleanup Objectives are based on background concentrations specific to Evaporation Ponds

Source: Mittelhauser 1989 and Trident 1994

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-12	Upgradient	2,4,5-TP (Silvex)	0.1	U	1	U
MWP-12	Upgradient	2,4-D	0.5	U	10	U
MWP-12	Upgradient	Arsenic	0.001	U	0.009	
MWP-12	Upgradient	Barium	0.1	U	0.1	U
MWP-12	Upgradient	BHC, gamma isomer (Lindane)	0.05	U	2	U
MWP-12	Upgradient	Bicarbonate as HCO3	140		239	
MWP-12	Upgradient	Cadmium	0.01	U	0.01	U
MWP-12	Upgradient	Calcium	55		121	
MWP-12	Upgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-12	Upgradient	Chloride	150		319	
MWP-12	Upgradient	Chromium	0.005	U	0.1	U
MWP-12	Upgradient	Copper	0.01	U	0.08	U
MWP-12	Upgradient	Endrin	0.01	U	0.1	U
MWP-12	Upgradient	Fluoride	0.21		0.59	
MWP-12	Upgradient	Hexavalent Chromium, dissolved	0.002	U	0.01	U
MWP-12	Upgradient	Hexavalent Chromium, total	0.002	U	0.02	
MWP-12	Upgradient	Iron	0.03	U	5	
MWP-12	Upgradient	Lead	0.001	U	0.14	
MWP-12	Upgradient	Low Level Phenolics	0.005	U	0.05	U
MWP-12	Upgradient	Magnesium	19		29	
MWP-12	Upgradient	Manganese	0.01	U	0.09	
MWP-12	Upgradient	Mercury	0.0001	U	0.0001	U
MWP-12	Upgradient	Methoxychlor	0.2	U	10	U
MWP-12	Upgradient	Nitrate	0.97		18	
MWP-12	Upgradient	pH	6.5		7.9	
MWP-12	Upgradient	pH, field	7.09		7.6	
MWP-12	Upgradient	Potassium	6		20	
MWP-12	Upgradient	Radioactivity, gross alpha	1+/-1.9	U	1+/-1.9	U
MWP-12	Upgradient	Radioactivity, gross beta	1+/-14	U	1+/-14	U
MWP-12	Upgradient	Selenium	0.001	U	0.003	
MWP-12	Upgradient	Silver	0.01	U	0.01	U
MWP-12	Upgradient	Sodium	59		270	
MWP-12	Upgradient	Specific Conductance	1080		1680	
MWP-12	Upgradient	Specific Conductance, field	1149		1221	
MWP-12	Upgradient	Sulfate	120		160	
MWP-12	Upgradient	TOC	0.5	U	7	
MWP-12	Upgradient	Total Alkalinity as CaCO3	---		140	
MWP-12	Upgradient	Total Coliform	2	U	17	
MWP-12	Upgradient	Total Dissolved Solids	420		1600	
MWP-12	Upgradient	Total Phosphorous, as P	0.01	U	3.1	
MWP-12	Upgradient	Total Radium	1+/-10	U	1+/-10	U
MWP-12	Upgradient	TOX	0.02	U	0.48	
MWP-12	Upgradient	Toxaphene	0.1	U	1	U
MWP-12	Upgradient	Zinc	0.01	U	0.05	
MWP-3	Upgradient	2,4,5-TP (Silvex)	0.1	U	1	U
MWP-3	Upgradient	2,4-D	0.5	U	10	U

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-3	Upgradient	Arsenic	0.009		0.001	U
MWP-3	Upgradient	Barium	0.1	U	0.1	U
MWP-3	Upgradient	BHC, gamma isomer (Lindane)	0.05	U	2	U
MWP-3	Upgradient	Bicarbonate as HCO3	100		185	
MWP-3	Upgradient	Cadmium	0.01	U	0.01	U
MWP-3	Upgradient	Calcium	78		99	
MWP-3	Upgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-3	Upgradient	Chloride	110		172	
MWP-3	Upgradient	Chromium	0.005	U	0.1	U
MWP-3	Upgradient	Copper	0.01	U	0.08	U
MWP-3	Upgradient	Endrin	0.01	U	0.1	U
MWP-3	Upgradient	Fluoride	0.24		0.35	
MWP-3	Upgradient	Hexavalent Chromium, dissolved	0.01	U	0.02	U
MWP-3	Upgradient	Hexavalent Chromium, total	0.01	U	0.01	U
MWP-3	Upgradient	Iron	0.03		4.3	
MWP-3	Upgradient	Lead	0.001		0.021	
MWP-3	Upgradient	Low Level Phenolics	0.005	U	0.011	
MWP-3	Upgradient	Magnesium	15		33	
MWP-3	Upgradient	Manganese	0.01	U	0.08	
MWP-3	Upgradient	Mercury	0.0001		0.0003	
MWP-3	Upgradient	Methoxychlor	0.2	U	10	U
MWP-3	Upgradient	Nitrate	1.3		20	
MWP-3	Upgradient	pH	6.2		8.1	
MWP-3	Upgradient	pH, field	7.07		8.12	
MWP-3	Upgradient	Potassium	5.7		8.4	
MWP-3	Upgradient	Radioactivity, gross alpha	1+/-1.4	U	1+/-1.4	U
MWP-3	Upgradient	Radioactivity, gross beta	1+/-12	U	1+/-12	U
MWP-3	Upgradient	Selenium	0.001	U	0.004	
MWP-3	Upgradient	Silver	0.01	U	0.01	U
MWP-3	Upgradient	Sodium	51		77	
MWP-3	Upgradient	Specific Conductance	500		1070	
MWP-3	Upgradient	Specific Conductance, field	757		1032	
MWP-3	Upgradient	Sulfate	100		147	
MWP-3	Upgradient	TOC	0.3		7	
MWP-3	Upgradient	Total Alkalinity as CaCO3	---		140	
MWP-3	Upgradient	Total Coliform	2	U	2.2	U
MWP-3	Upgradient	Total Dissolved Solids	390		740	
MWP-3	Upgradient	Total Phosphorous, as P	0.01		0.72	
MWP-3	Upgradient	Total Radium	1+/-1.0	U	1+/-1.0	U
MWP-3	Upgradient	TOX	0.02	U	0.13	U
MWP-3	Upgradient	Toxaphene	0.1	U	1	U
MWP-3	Upgradient	Zinc	0.01	U	0.06	
P-1	Upgradient	2,4,5-TP (Silvex)	0.1	U	1	U
P-1	Upgradient	2,4-D	0.5	U	10	U
P-1	Upgradient	Arsenic	0.001	U	0.002	U
P-1	Upgradient	Barium	0.1	U	0.1	U

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
P-1	Upgradient	BHC, gamma isomer (Lindane)	0.05	U	0.5	U
P-1	Upgradient	Bicarbonate as HCO3	130		178	
P-1	Upgradient	Cadmium	0.01	U	0.01	U
P-1	Upgradient	Calcium	85		110	
P-1	Upgradient	Carbonate as CO3	0.6	U	0.6	U
P-1	Upgradient	Chloride	130		153	
P-1	Upgradient	Chromium	0.005	U	0.1	U
P-1	Upgradient	Copper	0.02	U	0.08	U
P-1	Upgradient	Endrin	0.01	U	0.1	U
P-1	Upgradient	Fluoride	0.24		0.33	
P-1	Upgradient	Hexavalent Chromium, dissolved	0.01	U	0.01	U
P-1	Upgradient	Hexavalent Chromium, total	0.01	U	0.01	U
P-1	Upgradient	Iron	0.03	U	0.22	
P-1	Upgradient	Lead	0.001	U	0.004	
P-1	Upgradient	Low Level Phenolics	0.005	U	0.005	U
P-1	Upgradient	Magnesium	17		26	
P-1	Upgradient	Manganese	0.01	U	0.05	U
P-1	Upgradient	Mercury	0.0001	U	0.0001	U
P-1	Upgradient	Methoxychlor	0.2	U	10	U
P-1	Upgradient	Nitrate	2.6		22	
P-1	Upgradient	pH	7.2		8	
P-1	Upgradient	pH, field	7.25		8.13	
P-1	Upgradient	Potassium	5.6		12	
P-1	Upgradient	Radioactivity, gross alpha	1+/-5.5		1+/-5.5	
P-1	Upgradient	Radioactivity, gross beta	5+/-4		5+/-4	
P-1	Upgradient	Selenium	0.001	U	0.004	
P-1	Upgradient	Silver	0.01	U	0.01	U
P-1	Upgradient	Sodium	59		82	
P-1	Upgradient	Specific Conductance	810		1140	
P-1	Upgradient	Specific Conductance, field	1094		1112	
P-1	Upgradient	Sulfate	130		160	
P-1	Upgradient	TOC	0.5	U	1.1	
P-1	Upgradient	Total Alkalinity as CaCO3	---		140	
P-1	Upgradient	Total Coliform	2	U	2.2	U
P-1	Upgradient	Total Dissolved Solids	510		800	
P-1	Upgradient	Total Phosphorous, as P	0.01	U	1.6	
P-1	Upgradient	Total Radium	1+/-1.0	U	1+/-1.0	U
P-1	Upgradient	TOX	0.02	U	0.1	U
P-1	Upgradient	Toxaphene	0.1	U	1	U
P-1	Upgradient	Zinc	0.01	U	0.06	
MWP-16	Midgradient	2,4,5-TP (Silvex)	---		---	
MWP-16	Midgradient	2,4-D	---		---	
MWP-16	Midgradient	Arsenic	---		---	
MWP-16	Midgradient	Barium	---		---	
MWP-16	Midgradient	BHC, gamma isomer (Lindane)	---		---	
MWP-16	Midgradient	Bicarbonate as HCO3	26		110	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-16	Midgradient	Cadmium	---		---	
MWP-16	Midgradient	Calcium	71		76	
MWP-16	Midgradient	Carbonate as CO3	0.6	U	9.6	
MWP-16	Midgradient	Chloride	150		200	
MWP-16	Midgradient	Chromium	0.05	U	0.05	U
MWP-16	Midgradient	Copper	0.05	U	0.05	U
MWP-16	Midgradient	Endrin	---		---	
MWP-16	Midgradient	Fluoride	0.21		0.31	
MWP-16	Midgradient	Hexavalent Chromium, dissolved	---		---	
MWP-16	Midgradient	Hexavalent Chromium, total	---		---	
MWP-16	Midgradient	Iron	0.1	U	0.1	U
MWP-16	Midgradient	Lead	---		---	
MWP-16	Midgradient	Low Level Phenolics	0.005	U	0.005	U
MWP-16	Midgradient	Magnesium	5.8		13	
MWP-16	Midgradient	Manganese	0.05	U	0.05	U
MWP-16	Midgradient	Mercury	---		---	
MWP-16	Midgradient	Methoxychlor	---		---	
MWP-16	Midgradient	Nitrate	16		19	
MWP-16	Midgradient	pH	8.3		8.7	
MWP-16	Midgradient	pH, field	7.8		9.33	
MWP-16	Midgradient	Potassium	7.8		12	
MWP-16	Midgradient	Radioactivity, gross alpha	---		---	
MWP-16	Midgradient	Radioactivity, gross beta	---		---	
MWP-16	Midgradient	Selenium	---		---	
MWP-16	Midgradient	Silver	---		---	
MWP-16	Midgradient	Sodium	86		160	
MWP-16	Midgradient	Specific Conductance	770		1190	
MWP-16	Midgradient	Specific Conductance, field	923		1321	
MWP-16	Midgradient	Sulfate	160		260	
MWP-16	Midgradient	TOC	0.5	U	1.4	
MWP-16	Midgradient	Total Alkalinity as CaCO3	---		91	
MWP-16	Midgradient	Total Coliform	---		---	
MWP-16	Midgradient	Total Dissolved Solids	560		780	
MWP-16	Midgradient	Total Phosphorous, as P	0.069		0.086	
MWP-16	Midgradient	Total Radium	---		---	
MWP-16	Midgradient	TOX	0.02	U	0.066	
MWP-16	Midgradient	Toxaphene	---		---	
MWP-16	Midgradient	Zinc	0.05	U	0.05	U
MWP-2RD	Downgradient	2,4,5-TP (Silvex)	---		---	
MWP-2RD	Downgradient	2,4-D	---		---	
MWP-2RD	Downgradient	Arsenic	---		---	
MWP-2RD	Downgradient	Barium	---		---	
MWP-2RD	Downgradient	BHC, gamma isomer (Lindane)	---		---	
MWP-2RD	Downgradient	Bicarbonate as HCO3	100		130	
MWP-2RD	Downgradient	Cadmium	---		---	
MWP-2RD	Downgradient	Calcium	96		140	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-2RD	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-2RD	Downgradient	Chloride	440		590	
MWP-2RD	Downgradient	Chromium	0.05	U	0.05	U
MWP-2RD	Downgradient	Copper	0.05	U	0.05	U
MWP-2RD	Downgradient	Endrin	---		---	
MWP-2RD	Downgradient	Fluoride	0.67		0.82	
MWP-2RD	Downgradient	Hexavalent Chromium, dissolved	---		---	
MWP-2RD	Downgradient	Hexavalent Chromium, total	---		---	
MWP-2RD	Downgradient	Iron	0.1	U	0.1	U
MWP-2RD	Downgradient	Lead	---		---	
MWP-2RD	Downgradient	Low Level Phenolics	0.005	U	0.0057	
MWP-2RD	Downgradient	Magnesium	33		39	
MWP-2RD	Downgradient	Manganese	0.05	U	0.05	U
MWP-2RD	Downgradient	Mercury	---		---	
MWP-2RD	Downgradient	Methoxychlor	---		---	
MWP-2RD	Downgradient	Nitrate	0.4	U	9.6	
MWP-2RD	Downgradient	pH	7.5		7.9	
MWP-2RD	Downgradient	pH, field	7.61		7.77	
MWP-2RD	Downgradient	Potassium	12		20	
MWP-2RD	Downgradient	Radioactivity, gross alpha	---		---	
MWP-2RD	Downgradient	Radioactivity, gross beta	---		---	
MWP-2RD	Downgradient	Selenium	---		---	
MWP-2RD	Downgradient	Silver	---		---	
MWP-2RD	Downgradient	Sodium	240		260	
MWP-2RD	Downgradient	Specific Conductance	2110		2340	
MWP-2RD	Downgradient	Specific Conductance, field	2410		2022	
MWP-2RD	Downgradient	Sulfate	150		200	
MWP-2RD	Downgradient	TOC	1.4		5.5	
MWP-2RD	Downgradient	Total Alkalinity as CaCO3	---		110	
MWP-2RD	Downgradient	Total Coliform	---		---	
MWP-2RD	Downgradient	Total Dissolved Solids	1100		1300	
MWP-2RD	Downgradient	Total Phosphorous, as P	0.6		1	
MWP-2RD	Downgradient	Total Radium	---		---	
MWP-2RD	Downgradient	TOX	0.021		0.11	
MWP-2RD	Downgradient	Toxaphene	---		---	
MWP-2RD	Downgradient	Zinc	0.05	U	0.16	
MWP-8	Downgradient	2,4,5-TP (Silvex)	0.1	U	1	U
MWP-8	Downgradient	2,4-D	0.5	U	10	U
MWP-8	Downgradient	Arsenic	0.001	U	0.003	
MWP-8	Downgradient	Barium	0.1	U	0.5	
MWP-8	Downgradient	BHC, gamma isomer (Lindane)	0.05	U	0.5	U
MWP-8	Downgradient	Bicarbonate as HCO3	59		536	
MWP-8	Downgradient	Cadmium	0.01	U	0.02	
MWP-8	Downgradient	Calcium	1400		3200	
MWP-8	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-8	Downgradient	Chloride	3730		7800	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-8	Downgradient	Chromium	0.006		0.14	
MWP-8	Downgradient	Copper	0.02	U	0.18	
MWP-8	Downgradient	Endrin	0.01	U	0.1	U
MWP-8	Downgradient	Fluoride	0.1		0.14	
MWP-8	Downgradient	Hexavalent Chromium, dissolved	0.01	U	0.01	U
MWP-8	Downgradient	Hexavalent Chromium, total	0.01	U	0.02	
MWP-8	Downgradient	Iron	0.04		280	
MWP-8	Downgradient	Lead	0.001	U	0.02	
MWP-8	Downgradient	Low Level Phenolics	0.005	U	0.005	U
MWP-8	Downgradient	Magnesium	370		850	
MWP-8	Downgradient	Manganese	0.01	U	3.7	
MWP-8	Downgradient	Mercury	0.0001	U	0.0005	
MWP-8	Downgradient	Methoxychlor	0.2	U	10	U
MWP-8	Downgradient	Nitrate	3.5		61	
MWP-8	Downgradient	pH	6.1		7.7	
MWP-8	Downgradient	pH, field	6.66		8.23	
MWP-8	Downgradient	Potassium	26		67	
MWP-8	Downgradient	Radioactivity, gross alpha	1+/-15	U	1+/-15	U
MWP-8	Downgradient	Radioactivity, gross beta	1+/-42	U	1+/-42	U
MWP-8	Downgradient	Selenium	0.001	U	0.003	
MWP-8	Downgradient	Silver	0.01		0.06	
MWP-8	Downgradient	Sodium	270		490	
MWP-8	Downgradient	Specific Conductance	13500		23000	
MWP-8	Downgradient	Specific Conductance, field	13860		48530	
MWP-8	Downgradient	Sulfate	110		690	
MWP-8	Downgradient	TOC	0.2		8	
MWP-8	Downgradient	Total Alkalinity as CaCO3	---		85	
MWP-8	Downgradient	Total Coliform	2	U	110	
MWP-8	Downgradient	Total Dissolved Solids	6370		24000	
MWP-8	Downgradient	Total Phosphorous, as P	0.01		1.6	
MWP-8	Downgradient	Total Radium	1+/-1.0	U	1+/-1.0	U
MWP-8	Downgradient	TOX	0.02	U	0.67	
MWP-8	Downgradient	Toxaphene	0.1	U	1	U
MWP-8	Downgradient	Zinc	0.01	U	0.36	
MWP-9	Downgradient	2,4,5-TP (Silvex)	0.1	U	1	U
MWP-9	Downgradient	2,4-D	0.5	U	10	U
MWP-9	Downgradient	Arsenic	0.001	U	0.046	
MWP-9	Downgradient	Barium	0.1	U	0.2	
MWP-9	Downgradient	BHC, gamma isomer (Lindane)	0.05	U	2	U
MWP-9	Downgradient	Bicarbonate as HCO3	100		161	
MWP-9	Downgradient	Cadmium	0.01	U	0.01	U
MWP-9	Downgradient	Calcium	88		250	
MWP-9	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-9	Downgradient	Chloride	172		600	
MWP-9	Downgradient	Chromium	0.005	U	0.1	U
MWP-9	Downgradient	Copper	0.01	U	0.08	U

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-9	Downgradient	Endrin	0.01	U	0.1	U
MWP-9	Downgradient	Fluoride	0.18		0.5	
MWP-9	Downgradient	Hexavalent Chromium, dissolved	0.01	U	0.01	U
MWP-9	Downgradient	Hexavalent Chromium, total	0.01	U	0.02	
MWP-9	Downgradient	Iron	0.03	U	6.5	
MWP-9	Downgradient	Lead	0.001	U	0.006	
MWP-9	Downgradient	Low Level Phenolics	0.005	U	0.008	
MWP-9	Downgradient	Magnesium	19		72	
MWP-9	Downgradient	Manganese	0.01	U	0.22	
MWP-9	Downgradient	Mercury	0.0001	U	0.0004	
MWP-9	Downgradient	Methoxychlor	0.2	U	10	U
MWP-9	Downgradient	Nitrate	0.57		34	
MWP-9	Downgradient	pH	0		8.1	
MWP-9	Downgradient	pH, field	7.21		7.8	
MWP-9	Downgradient	Potassium	8.6		14	
MWP-9	Downgradient	Radioactivity, gross alpha	1+/-1.9	U	1+/-1.9	U
MWP-9	Downgradient	Radioactivity, gross beta	1+/-14	U	1+/-14	U
MWP-9	Downgradient	Selenium	0.001	U	0.004	
MWP-9	Downgradient	Silver	0.01	U	0.01	U
MWP-9	Downgradient	Sodium	71		140	
MWP-9	Downgradient	Specific Conductance	1670		2550	
MWP-9	Downgradient	Specific Conductance, field	1968		2600	
MWP-9	Downgradient	Sulfate	130		240	
MWP-9	Downgradient	TOC	0.5		5	U
MWP-9	Downgradient	Total Alkalinity as CaCO3	---		120	
MWP-9	Downgradient	Total Coliform	2	U	2.2	U
MWP-9	Downgradient	Total Dissolved Solids	650		1900	
MWP-9	Downgradient	Total Phosphorous, as P	0.01	U	0.88	
MWP-9	Downgradient	Total Radium	1+/-1.0	U	1+/-1.0	U
MWP-9	Downgradient	TOX	0.02	U	0.32	
MWP-9	Downgradient	Toxaphene	0.1	U	1	U
MWP-9	Downgradient	Zinc	0.01	U	0.06	
MWP-10	Downgradient	2,4,5-TP (Silvex)	0.1	U	1	U
MWP-10	Downgradient	2,4-D	0.5	U	10	U
MWP-10	Downgradient	Arsenic	0.001	U	0.005	
MWP-10	Downgradient	Barium	0.1	U	0.1	U
MWP-10	Downgradient	BHC, gamma isomer (Lindane)	0.05	U	2	U
MWP-10	Downgradient	Bicarbonate as HCO3	120		160	
MWP-10	Downgradient	Cadmium	0.01	U	0.01	U
MWP-10	Downgradient	Calcium	93		120	
MWP-10	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-10	Downgradient	Chloride	156		430	
MWP-10	Downgradient	Chromium	0.005	U	0.1	U
MWP-10	Downgradient	Copper	0.01	U	0.08	U
MWP-10	Downgradient	Endrin	0.01	U	0.1	U
MWP-10	Downgradient	Fluoride	0.25		0.38	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-10	Downgradient	Hexavalent Chromium, dissolved	0.002	U	0.01	U
MWP-10	Downgradient	Hexavalent Chromium, total	0.002	U	0.01	U
MWP-10	Downgradient	Iron	0.02	U	0.13	
MWP-10	Downgradient	Lead	0.001	U	0.031	
MWP-10	Downgradient	Low Level Phenolics	0.005	U	0.05	U
MWP-10	Downgradient	Magnesium	22		36	
MWP-10	Downgradient	Manganese	0.01		0.05	U
MWP-10	Downgradient	Mercury	0.0001	U	0.0003	
MWP-10	Downgradient	Methoxychlor	0.2	U	10	U
MWP-10	Downgradient	Nitrate	1.1		15	
MWP-10	Downgradient	pH	6.6		8.1	
MWP-10	Downgradient	pH, field	7.05		7.82	
MWP-10	Downgradient	Potassium	5.8		9.4	
MWP-10	Downgradient	Radioactivity, gross alpha	1+/-1.0	U	1+/-1.0	U
MWP-10	Downgradient	Radioactivity, gross beta	1+/-15	U	1+/-15	U
MWP-10	Downgradient	Selenium	0.001	U	0.004	
MWP-10	Downgradient	Silver	0.01	U	0.01	U
MWP-10	Downgradient	Sodium	66		88	
MWP-10	Downgradient	Specific Conductance	1050		1440	
MWP-10	Downgradient	Specific Conductance, field	1224		1378	
MWP-10	Downgradient	Sulfate	130		163	
MWP-10	Downgradient	TOC	0.5	U	6	
MWP-10	Downgradient	Total Alkalinity as CaCO3	120		120	
MWP-10	Downgradient	Total Coliform	2		2.2	U
MWP-10	Downgradient	Total Dissolved Solids	590		1100	
MWP-10	Downgradient	Total Phosphorous, as P	0.01	U	3.2	
MWP-10	Downgradient	Total Radium	1+/-1.0	U	1+/-1.0	U
MWP-10	Downgradient	TOX	0.02	U	0.15	
MWP-10	Downgradient	Toxaphene	0.1	U	1	U
MWP-10	Downgradient	Zinc	0.01	U	0.06	
MWP-14	Downgradient	2,4,5-TP (Silvex)	---		---	
MWP-14	Downgradient	2,4-D	---		---	
MWP-14	Downgradient	Arsenic	---		---	
MWP-14	Downgradient	Barium	---		---	
MWP-14	Downgradient	BHC, gamma isomer (Lindane)	---		---	
MWP-14	Downgradient	Bicarbonate as HCO3	110		130	
MWP-14	Downgradient	Cadmium	---		---	
MWP-14	Downgradient	Calcium	170		250	
MWP-14	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-14	Downgradient	Chloride	490		710	
MWP-14	Downgradient	Chromium	0.05	U	0.05	U
MWP-14	Downgradient	Copper	0.05	U	0.05	U
MWP-14	Downgradient	Endrin	---		---	
MWP-14	Downgradient	Fluoride	0.18		0.24	
MWP-14	Downgradient	Hexavalent Chromium, dissolved	---		---	
MWP-14	Downgradient	Hexavalent Chromium, total	---		---	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-14	Downgradient	Iron	0.1	U	0.1	U
MWP-14	Downgradient	Lead	---		---	
MWP-14	Downgradient	Low Level Phenolics	0.005	U	0.005	U
MWP-14	Downgradient	Magnesium	48		75	
MWP-14	Downgradient	Manganese	0.05	U	0.05	U
MWP-14	Downgradient	Mercury	---		---	
MWP-14	Downgradient	Methoxychlor	---		---	
MWP-14	Downgradient	Nitrate	33		34	
MWP-14	Downgradient	pH	8.1		8.3	
MWP-14	Downgradient	pH, field	7.62		8.27	
MWP-14	Downgradient	Potassium	11		15	
MWP-14	Downgradient	Radioactivity, gross alpha	---		---	
MWP-14	Downgradient	Radioactivity, gross beta	---		---	
MWP-14	Downgradient	Selenium	---		---	
MWP-14	Downgradient	Silver	---		---	
MWP-14	Downgradient	Sodium	120		160	
MWP-14	Downgradient	Specific Conductance	1890		2550	
MWP-14	Downgradient	Specific Conductance, field	2140		2710	
MWP-14	Downgradient	Sulfate	160		190	
MWP-14	Downgradient	TOC	0.69		6.8	
MWP-14	Downgradient	Total Alkalinity as CaCO3	---		110	
MWP-14	Downgradient	Total Coliform	---		---	
MWP-14	Downgradient	Total Dissolved Solids	1300		2000	
MWP-14	Downgradient	Total Phosphorous, as P	0.049		1.4	
MWP-14	Downgradient	Total Radium	---		---	
MWP-14	Downgradient	TOX	0.046		9.1	
MWP-14	Downgradient	Toxaphene	---		---	
MWP-14	Downgradient	Zinc	0.05	U	0.05	U
MWP-15	Downgradient	2,4,5-TP (Silvex)	---		---	
MWP-15	Downgradient	2,4-D	---		---	
MWP-15	Downgradient	Arsenic	---		---	
MWP-15	Downgradient	Barium	---		---	
MWP-15	Downgradient	BHC, gamma isomer (Lindane)	---		---	
MWP-15	Downgradient	Bicarbonate as HCO3	100		120	
MWP-15	Downgradient	Cadmium	---		---	
MWP-15	Downgradient	Calcium	340		510	
MWP-15	Downgradient	Carbonate as CO3	0.6	U	0.6	U
MWP-15	Downgradient	Chloride	860		1400	
MWP-15	Downgradient	Chromium	0.05	U	0.05	U
MWP-15	Downgradient	Copper	0.05	U	0.05	U
MWP-15	Downgradient	Endrin	---		---	
MWP-15	Downgradient	Fluoride	0.12		0.16	
MWP-15	Downgradient	Hexavalent Chromium, dissolved	---		---	
MWP-15	Downgradient	Hexavalent Chromium, total	---		---	
MWP-15	Downgradient	Iron	0.1	U	0.1	U
MWP-15	Downgradient	Lead	---		---	

TABLE 5-4
Groundwater Monitoring Results
SWMU 10 (Unit 4.11) Old Evaporation
PG&E Topock Compressor Station

Well	Location	Analyte	Min Value	Qualifier	Max Value	Qualifier
MWP-15	Downgradient	Low Level Phenolics	0.005	U	0.005	U
MWP-15	Downgradient	Magnesium	92		130	
MWP-15	Downgradient	Manganese	0.05	U	0.05	U
MWP-15	Downgradient	Mercury	---		---	
MWP-15	Downgradient	Methoxychlor	---		---	
MWP-15	Downgradient	Nitrate	46		92	
MWP-15	Downgradient	pH	8		8.3	
MWP-15	Downgradient	pH, field	7.72		8.47	
MWP-15	Downgradient	Potassium	16		18	
MWP-15	Downgradient	Radioactivity, gross alpha	---		---	
MWP-15	Downgradient	Radioactivity, gross beta	---		---	
MWP-15	Downgradient	Selenium	---		---	
MWP-15	Downgradient	Silver	---		---	
MWP-15	Downgradient	Sodium	190		210	
MWP-15	Downgradient	Specific Conductance	3690		4180	
MWP-15	Downgradient	Specific Conductance, field	4210		4480	
MWP-15	Downgradient	Sulfate	260		300	
MWP-15	Downgradient	TOC	0.5	U	0.62	
MWP-15	Downgradient	Total Alkalinity as CaCO3	---		110	
MWP-15	Downgradient	Total Coliform	---		---	
MWP-15	Downgradient	Total Dissolved Solids	2600		3000	
MWP-15	Downgradient	Total Phosphorous, as P	0.32		0.47	
MWP-15	Downgradient	Total Radium	---		---	
MWP-15	Downgradient	TOX	0.02	U	0.33	
MWP-15	Downgradient	Toxaphene	---		---	
MWP-15	Downgradient	Zinc	0.05	U	0.05	U

Notes:
--- not analyzed or not available
U not detected at the reporting limit listed

Source: Pacific Gas and Electric Company, 1993

TABLE 5-5
Soil Sample Results
SWMU 5 (Units 4.12 and 4.13) - Sludge Drying Beds
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted	
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19		43	20	16	0.123	1.7	53	1	0.5	5	50	135	914	
Sample ID	Location	Depth	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units
ED -4	ED -4	0	N	12/9/1988	0.3 U	1.63	120	1 U	0.5 U	6.4	1 U	23	3 U	17	0.002 U	1 U	12	1 U	0.5 U	5 U	18	34	504	11.25
ED -5	ED -5	0	N	12/9/1988	0.3 U	1.21	110	1 U	0.5 U	8.2	1 U	37	3.8	4.4	0.016	1 U	9.3	1 U	0.5 U	5 U	24	53	791	10.85
D -4	D -4	0	N	12/9/1988	0.3	1.3	78	0.05 U	0.2	2.3	1 U	18	8.1	4	0.019	0.11	6.5	0.05 U	0.1 U	0.3 U	8.1	93	130	10.35
D -4	D -4	0	N	12/9/1988	0.3 U	1.84	210	1 U	0.5	8.3	1 U	30	3.1	5.2	0.012	1 U	11	1 U	0.5 U	5 U	20	100	310	10.21
D -5	D -5	0	N	12/9/1988	0.3 U	1.29	110	1 U	0.5 U	7.1	1 U	22	3 U	15	0.014	1 U	7.5	1 U	0.5 U	5 U	21	33	528	10.53

Notes:

N primary sample
FD field duplicate
mg/kg milligrams per kilograms
--- not analyzed
U not detected at the reporting limit listed
J estimated value
Detected results are shown in bold

Samples were collected at the surface of the e cavation which was appro imately 2 feet deep. The e cavation was backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-6
Soil Sample Results
SWMU 6 (Unit 4.7) - Chromate Reduction Tank
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																			General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19			43	20	16	0.123	1.7	53	1	0.5	5	50	135	914		
Sample ID	Location	Depth ft	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Trivalent Chromium	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in mhos/cm
CRT-4_0.5	CRT-4	0.5	N	11/15/1989	0.3 U	4.3	165	1 U	0.5 U	10	---	1	120	14	6	0.002 U	1 U	19	1 U	0.5 U	5 U	26	96	380	8.42	170
DUP-2 CRT-4	CRT-4	0.5	FD	11/15/1989	---	---	---	---	---	---	---	1 U	43	8.3	---	---	---	8.1	---	---	---	---	59	---	10.01	---
CRT-4_1	CRT-4	1	N	11/15/1989	0.3 U	1.7	103	1 U	0.5 U	9	---	1 U	23	7	2	0.002 U	1 U	14	1 U	0.5 U	5 U	23	47	490	9.03	65
CRT-4_1.5	CRT-4	1.5	N	11/15/1989	0.3 U	2.5	168	1 U	0.5 U	10	---	1 U	21	8	3	0.002 U	1 U	18	1 U	0.5 U	5 U	24	49	400	9.52	45
CRT-4_5	CRT-4	5	N	11/15/1989	1 U	1.9	56	0.1	0.2	3	43	1 U	43	8.3	1.9	0.02 U	0.67	8.1	0.05 U	0.1 U	1 U	14	59	650	10.01	380

Notes:

N primary sample
FD field duplicate
mg/kg milligrams per kilograms
--- not analyzed
U not detected at the reporting limit listed
J estimated value
Detected results are shown in bold

Depths shown are the depth below the bottom of the e cavation which was appro imately 7 feet deep. The e cavation was backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-7
Soil Sample Results
SWMU 8 (Unit 4.10) - Process Pump Tank
RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted	
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19		43	20	16	0.123	1.7	53	1	0.5	5	50	135	914	
Sample ID	Location	Depth ft	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units
DUP-1 PPT-4	PPT-4	1.5	FD	12/9/1988	---	---	---	---	---	---	1 U	29	15	---	---	---	26	---	---	---	---	35	---	8.74
PPT-4_2	PPT-4	2	N	2/8/1989	0.3 U	1.1	63	1 U	0.5 U	13	1 U	32	19	5	0.02	1 U	33	1 U	0.5 U	5 U	41	44	636	8.68
PPT-4_2D	PPT-4	2	FD	2/8/1989	0.3 U	1.2	65	1 U	0.5 U	9	1 U	29	15	4	0.027	1 U	26	1 U	0.5 U	5 U	32	36	664	8.74
PPT-4_3	PPT-4	3	N	2/8/1989	0.3 U	1.3	50	1 U	0.5	10	1 U	26	16	5	0.007	1 U	25	1 U	0.5 U	5 U	38	44	576	9.34

Notes:
N primary sample
FD field duplicate
mg/kg milligrams per kilograms
--- not analyzed
U not detected at the reporting limit listed
J estimated value
Detected results are shown in bold

Depths shown are the depth below the bottom of the e cavation which was appro imately 2 feet deep. The e cavation was backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-8

Soil Sample Results

SWMU 9 (Unit 4.8) - Transfer Sump

RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																		General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19		43	20	16	0.123	1.7	53	1	0.5	5	50	135	914		
Sample ID	Location	Depth ft	Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in mhos/cm
SumpTS-3	SumpTS-3	0.5	N	11/15/1989	0.3 U	2.1	100	1	0.5 U	11	1 U	20	8	4	0.002 U	1 U	16	1 U	0.5 U	5 U	23	54	400	9.05	87

Notes:

N primary sample
FD field duplicate
mg/kg milligrams per kilograms
--- not analyzed
U not detected at the reporting limit listed
J estimated value
Detected results are shown in bold

Depths shown are the depth below the bottom of the e cavation which was appro imately 18.5 feet deep. The e cavation was backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-9

Soil Sample Results

Former Oily Water Treatment System

RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Total Petroleum Hydrocarbons in mg/kg				
Sample ID	**Location**	**Depth*, ft**	**Sample Type**	**Sample Date**	**TPH - Gasoline**	**TPH - Extractables**	**TPH - Diesel**	**TPH - Motor Oil**	**TPH - Jet Fuel**
1042-55-4	OWS PI-1^		N	11/17/1989	8 U	---	5 U	**1,200**	3 U
1042-55-6	OWS Valve PI-1^		N	11/17/1989	8 U	---	5 U	**850**	3 U
1042-55-10	OWS-10^		N	11/18/1989	---	2 U	---	---	---
1042-55-11	OWS-11^		N	11/18/1989	---	1 U	---	---	---
1042-43-32	OWS-12 Deeper^		N	3/20/1990	---	**18**	---	---	---

Notes:

*	Samples collected beneath I-1 pipe or beneath Oil Water Separator
N	primary sample
mg/kg	milligrams per kilograms
OWS	oil/water separater
---	not analyzed
U	not detected at the reporting limit listed

Detected results are shown in bold

Table 5-10

Former Wastewaster Treatment System Piping Designations and Details

RCRA Facility Investigation/Remedial Investigation (Volume 1)

PG&E Topock Compressor Station, Needles, California

Piping Section	Connection	Diameter (inch)	Material	Length (feet)
A	Cooling Towers to Chromate Reduction Tank	3	PVC	1500[(1)]
B	Chromate Reduction Tank to Transfer Sump	3	PVC	30
C	Transfer Sump to transfer pumps	3	PVC	15
D	Process Pump Tank to transfer pumps	3	PVC	500
E	Precipitation Tank to Process Pump Tank	4	Steel	15
F	Transfer pumps to Precipitation Tank	3	PVC	500
G	Transfer pumps to Old Evaporation Ponds	3	PVC[(2)]	1500
H	Precipitation Tank to Sludge Drying Beds	6	Cast iron	500

Notes:

PVC = Polyvinyl chloride

(1) 750 feet per tower

(2) Portions of the pipe that were buried were 3-inch diameter polyethylene and the portion that was suspended above Bat Cave Wash was aluminum.

TABLE 5-11

Soil Sample Results

Former Hazardous Waste Treatment System Piping

RCRA Facility Investigation/Remedial Investigation (Volume 1) , PG&E Topock Compressor Station, Needles, California

					Metals in mg/kg																			General Chemistry in mg/kg unless otherwise noted		
				Cleanup Objectives:	7.2	4.4	373	1	0.6	19			43	20	16	0.123	1.7	53	1	0.5	5	50	135	914		
Sample ID	Location	Depth ft	, Sample Type	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Trivalent Chromium	Hexavalent Chromium	Total Chromium	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Selenium	Thallium	Vanadium	Zinc	Fluoride	pH in pH units	Specific Conductance in mhos/cm
P -3	P -3	1	N	11/19/1989	0.3 U	2.3	168	1 U	0.5 U	3 U	---	1 U	45	7	14.8	0.058	1 U	14	1 U	0.5 U	5 U	24	87	583	8.2	244
P -3D	P -3	1	FD	11/19/1989	0.3 U	2.6	169	1 U	0.5 U	3 U	---	---	49	8	12.4	0.036	---	12	1 U	0.5 U	5 U	25	91	---	---	---
PC-1	PC-1	1	N	11/14/1989	0.3 U	2	123	1 U	0.5 U	6	---	1 U	10	10	9.4	0.032	1 U	16	1 U	0.5 U	5 U	10	26	310	8.59	120
PF-6	PF-6	1	N	11/18/1989	1 U	2	47	0.12	0.11	1.8	26	1 U	26	6.7	16	0.02 U	0.27	5.4	0.05 U	0.1 U	1 U	7.3	26	380	8.69	980
PF-6	PF-6	1	N	11/18/1989	0.3 U	1.7	80	1 U	0.5 U	3 U	---	1 U	22	3	28.5	0.002 U	1 U	8	1 U	0.5 U	5 U	8	51	355	8.2	265
PF-8	PF-8	1	N	11/18/1989	0.3 U	1.9	92	1 U	0.5 U	3 U	---	1 U	12	7	9	0.007	0.82	7	1 U	0.5 U	5 U	1 U	27	519	8.5	98
P -2	P -2		N	11/15/1989	0.3 U	2.18	152	1 U	0.5 U	3 U	---	1 U	24.7	3.3	10.6	0.026	1 U	9.6	4.4	0.5 U	5 U	1 U	92.8	890	9	430
DUP-1 P -2	P -2		FD	11/15/1989	0.3 U	3	219	1 U	0.5 U	3 U	---	1 U	26	9	4.1	0.002 U	1 U	8	1 U	0.5 U	5 U	7	45	---	8.8	686
P 1	P -1		N	12/5/1988	0.3 U	3.19	170	1 U	0.5 U	5.1	---	1 U	23	3 U	10	0.061	1 U	8.5	1 U	0.5 U	5 U	13	30	498	8.57	---
P 1D	P -1		FD	12/5/1988	0.3 U	2.48	180	1 U	0.5 U	5.1	---	1 U	22	3 U	20	0.043	1 U	6.8	1 U	0.5 U	1 U	15	33	502	8.4	---
P 2	P -2		N	12/5/1988	0.3 U	2.42	150	1 U	0.6	6	---	1.9	510	8.7	38	0.076	1 U	6.7	1 U	0.5 U	5 U	13	210	500	8.45	---
P -3	P -3	3	N	11/14/1989	0.3 U	2.1	199	1 U	0.5 U	7	---	2	25	9	4	0.032	1 U	16	1 U	0.5 U	5 U	23	37	520	9.96	320
P -4	P -4	3	N	11/14/1989	5.8	2.1	175	1 U	0.5 U	6	---	1 U	35	8	9	0.006	1 U	17	1 U	0.5 U	5 U	23	53	480	9.14	270
P -5	P -5	6	N	11/14/1989	0.3 U	2.2	216	1 U	0.5 U	7	---	1 U	12	5	6	0.15	1 U	11	1 U	0.5 U	5 U	13	29	570	8.42	160
P -5D	P -5	6	FD	11/14/1989	0.3 U	2.7	201	1 U	0.5 U	4	---	---	11	5	5	0.172	15	9	1 U	0.5 U	5 U	8	29	---	---	---
P -6	P -6	1.5	N	11/18/1989	0.3 U	1.7	66	1 U	0.5 U	9	---	1 U	10	13	2.3	0.045	1 U	32	1 U	0.5 U	5 U	29	58	506	10.3	412
P -7	P -7	5	N	11/18/1989	0.3 U	1.7	149	1 U	0.5 U	7	---	1 U	52	10	9.6	0.034	1 U	25	1 U	0.5 U	5 U	23	118	640	9.6	380
P -7	P -7	5	N	11/18/1989	1 U	1.4	79	0.2	0.19	3.3	27	1 U	27	11	2.2	0.02	0.2	12	0.05 U	0.1 U	1 U	14	34	650	10.26	810
P -8	P -8	3	N	11/18/1989	0.3 U	2.1	83	1	0.5 U	6	---	1 U	37	16	6.1	0.002 U	1 U	25	1 U	0.5 U	5 U	42	41	584	10.2	449
P -9	P -9	3	N	11/20/1989	0.3 U	1.7	56	1 U	0.5 U	3 U	---	1 U	34	15	6.4	0.011	1 U	24	1 U	0.5 U	5 U	40	61	851	9.7	368
P -10	P -10	2	N	11/20/1989	0.3 U	1.4	113	0.26	0.5 U	3 U	---	1 U	26	5.1	20	0.075	1 U	18	1 U	0.6	5 U	25	12	516	10.2	418
P -11	P -11	4	N	11/21/1989	0.3 U	1.7	111	1	0.5 U	5	---	1 U	26	12	8	0.002 U	1 U	18	1 U	0.5 U	5 U	33	47	617	8.6	225
P -12	P -12	4	N	11/21/1989	0.3 U	2.2	90	1	0.5 U	4	---	1 U	28	12	8	0.002 U	1 U	19	1 U	0.5 U	5 U	35	44	629	8.9	303
P -13	P -13	6	N	11/21/1989	0.3 U	2.5	216	1 U	0.5 U	3 U	---	1 U	37	8	12.5	0.009	1 U	9	1 U	0.5 U	5 U	24	102	670	8.5	328

Notes:

N	primary sample
FD	field duplicate
mg/kg	milligrams per kilograms
---	not analyzed
U	not detected at the reporting limit listed
J	estimated value
	Detected results are shown in bold

Results from sample collected at lower depth than represented in the table, after additional soil removal.

Samples were collected beneath pipelines located at varying depths. Confirmation samples were collected after e cavation of contaminated soil surrounding pipelines. E cavations were backfilled after confirmation sample collection.

Cleanup objectives are based on background concentrations.

Source: Mittelhauser 1990

TABLE 5-12
Soil Sampling Results
Former 300B Pipeline Liquids Tank
Total Recoverable Petroleum Hydrocarbons and TPH-Motor Oil
RCRA Facility Investigation/Remedial Investigation (Volume 1), PG&E Topock Compressor Station, Needles, California

Sample Event/ Sample ID	Sample Date	Sample Depth (bgs)	TPH-Motor Oil[a] (mg/kg)	Total Recoverable Petroleum Hydrocarbons[b] (mg/kg)	Comments
Initial Site Investigation Results					
HDPT 1/1.2	12/2/94	1.2 feet	100		
HDPT 1/2	12/2/94	2 feet	13		
Soil Disposal Characterization Results					
TODT-1	4/16/96	0-4 inches		68,000	Excavated
Post Excavation Confirmation Sampling Round 1					
ODT-1	7/18/96	2.5 feet		1,200	Re-excavated
ODT-2	7/18/96	3.0 feet		360	Re-excavated
ODT-3	7/18/96	1.5 feet		3,800	Re-excavated
ODT-4	7/18/96	0.5 feet		ND <20	
Post Excavation Confirmation Sampling Round 2					
ODT-5	8/22/96	2.0 feet		2,500	Re-excavated
ODT-6	8/22/96	3.0 feet		1,300	Re-excavated
Post Excavation Confirmation Sampling Round 3					
ODT-7	9/5/96	2.0 feet		ND <20	
ODT-8	9/5/96	2.5 feet		ND <20	
ODT-9	9/5/96	2.5 feet		ND <20	
ODT-10	9/5/96	4.0 feet		ND <20	
ODT-11	9/5/96	4.5 feet		690	Re-excavated
Post Excavation Confirmation Sampling Round 4					
ODT-12	9/26/96	5.5 feet		ND <20	
ODT-13	9/26/96	5.0 feet		120	
ODT-14	9/26/96	5.0 feet		66	
ODT-15	9/26/96	5.0 feet		150	

Notes:
[a] Analysis Method was GC/FID.
[b] Analysis Method EPA 418.1.
ND = Not Detected at the stated reporting limit

Sources:
Investigation of Pipeline Liquid Oil Tank at PG&E's Topock Compressor Station, Needles, California, dated July 6, 1995 (Trident 1995a)

Former Pipeline Liquid Closure Plan PG&E Topock Compressor Station, Needles, California, dated May 7, 1996 (Trident 1996c)

Former Pipeline Liquid Oil Tank Closure Certification Report, PG&E Topock Gas Compressor Station Needles, California, dated October 10, 1996 (Trident 1996d).