APPENDIX S

Supplemental Interim Remediation Action Plan

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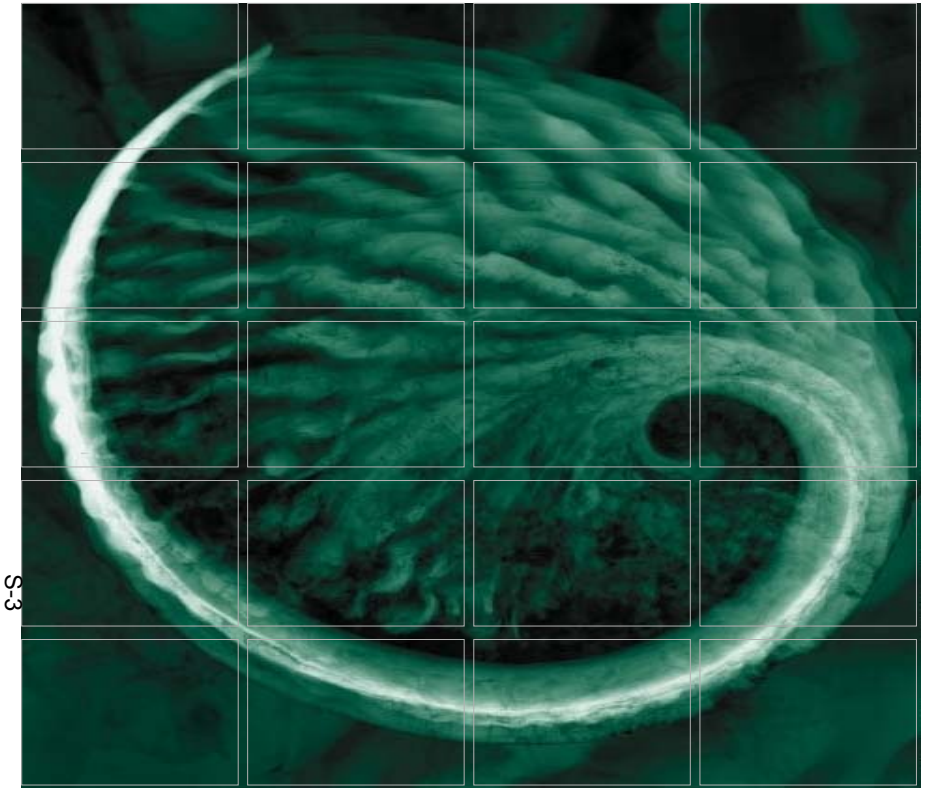

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Supplemental Interim Remedial Action Plan

Former Eureka Railroad Yard and
General Petroleum Site
Eureka, California
Case No. R1-2002-082

June 2009

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1.0 INTRODUCTION

Presented herein is a Supplemental Interim Remedial Action Plan (IRAP) for the former Union Pacific (UP) Railroad Yard, General Petroleum site and nearby areas (site), located in Eureka, California (Figure 1). Cleanup and Abatement Order (CAO) No. R1-2001-26 required the submittal of an Interim Remedial Action Plan (IRAP). Geomatrix Consultants (Geomatrix) submitted an IRAP in 2001 to comply with the CAO. Since the implementation of the IRAP, the California Regional Water Quality Control Board, North Coast Region (RWQCB) has required additional actions. This supplemental IRAP is intended to comply with those requirements, and the CAO. This plan was prepared on behalf of CUE VI by Environmental Resources Management (ERM).

2.0 SITE INFORMATION

2.1 HISTORICAL SITE USE

Geomatrix described historic operations at the site including: the operation of a former railroad yard that included railroad car maintenance and repair, and fueling of locomotives; and former petroleum bulk fuel plants including the Former General Petroleum bulk plant and the Former Richfield Bulk Fuel Plant. The former locations of specific site operations and on-site structures are shown on Figure 2.

Based on site history at the former railroad yard, chemicals of significant use on the site included Bunker C oil, diesel fuel, and gasoline. Bunker C oil was the primary fuel used for locomotives at the site from the late 1900s to 1954. After 1954, diesel fuel was used for locomotives. During site operations, Bunker C oil was stored onsite in a 650,000-gallon Aboveground Storage Tank (AST). In 1954, the Bunker C oil AST was modified to make a secondary containment structure for two 12,700-gallon diesel ASTs. Fuel storage at the site was discontinued in 1984 as site operations decreased and a tank truck was used to fuel locomotives. Three Underground Storage Tanks (USTs) were used at the site to store gasoline for fueling company trucks and automobiles. The USTs were removed from the site in 1988 and ranged in size from 600 to 2,500 gallons (Geomatrix, 1991). The former locations of fuel storage tanks at the site are shown on Figure 2.

Locomotive maintenance and repair was conducted at the location of the former roundhouse. A review of historic aerial photographs from 1946 and 1962 identified two areas south of the roundhouse that were possibly used as oil disposal pits (Geomatrix, June 1999). In 1976, an underground oil collection system was constructed at the site to collect oil and diesel fuel from the active operational area. The system was in operation until 1986 (Geomatrix, 1991). The location of the oil collection system is shown on Figure 2.

The Former Richfield Bulk Fuel Plant site was leased to the Richfield Oil Company prior to 1931. Richfield used the site as a bulk fuel storage plant until

sometime after 1974. At least two ASTs, a pump house and filling station, office building, and warehouse were constructed prior to 1931. A third AST was installed in 1939, and two additional ASTs were installed by 1957 (SHN, 1999). Environmental investigations to date indicate that gasoline, diesel, solvents, and Bunker C oil were likely stored onsite. To date, all ASTs have been removed from the site.

The Former General Petroleum Bulk Fuel Plant site was developed around 1929, and was operated by General Petroleum until approximately 1955. The site included several ASTs, pumps, piping, filling station, warehouses, and an oil truck storage building. The onsite structures were removed between 1955 and 1957 (SHN, 1999). Environmental Investigations to date indicate that gasoline, diesel, solvents, and Bunker C oil were likely stored onsite.

The former LM Renner site was first developed in 1954 and was operated by Foster Drayage (FD), who leased the property from Southern Pacific Transportation Company. In 1954 FD installed two 1,000-gallon USTs, and in 1960, FD installed one 10,000-gallon AST. In 1982 L&M Renner Inc. (Renner) subleased a portion of the property and used the existing tanks to operate a card lock facility (self-service gasoline station). In 1987, Renner stopped using the site USTs and installed an AST with built-in secondary containment. In 1992, Renner had all site USTs and ASTs removed from the site. Environmental site investigations conducted subsequent to the USTs and ASTs removal showed the presence of petroleum-impacted soil and ground water that resulted from the operation of the fueling facility. In 1998, remediation activities were carried out, including the excavation of 159 cubic yards of petroleum-impacted soil and the removal of approximately 7,400 gallons of petroleum-impacted ground water. Post-excavation sampling indicated that residual petroleum hydrocarbons remained in place (W&K, 1999). As a result of post-remediation monitoring activities, the site was issued a No further Action letter by the RWQCB on May 5, 2006 (RWQCB, 2009).

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2.2 *SITE TOPOGRAPHY*

The site is located on relatively flat ground with minimal topographic relief. Site elevations are on the order of 8 to 12 feet relative to North American Vertical Datum of 1988 (NAVD 88); with some fill mounds reaching up to about 15 feet NAVD (Kelly-O'Hern Assoc., 2005). The ground surface at the site is covered with a variable thickness of fill.

2.3 *GEOLOGY*

Three subsurface soil layers have been identified during site investigations, including the backfill material, which is underlain by bay mud, which in turn is underlain by sands and gravely sands. The backfill material extends from the ground surface to a depth of approximately 5 to 8 feet Below Ground Surface (BGS) and consists of sands, gravels, and clays. Based on the information available for the site, it appears that whatever material was available at the time

was used as backfill, including Humboldt Bay dredging spoils. The backfill material is underlain by bay mud, an approximate 8-foot thick mixture of silty clay and clayey silt that extends to a depth of approximately 12 to 14 feet BGS. The bay mud is underlain by sand and gravely sand (Holocene aged marine terrace deposits) that extends to at least 65 feet BGS. The approximate total depth to which the gravely sand extends could not be assessed using existing site data.

Beneath Humboldt Bay, and along its margins, the Hookton Formation and marine terrace deposits are overlain by late Holocene age (i.e., younger than about 5,000-6,000 years old) bay muds and associated littoral and estuarine deposits. Near alluvial sources at the fringes of the bay, bay muds are intermixed with terrestrial alluvial deposits. These unconsolidated deposits vary in thickness and composition around the bay and in the adjacent coastal valleys, often exhibiting large amounts of lateral variation over very small distances. Bay deposits typically consist of silty clays or clayey silts (bay muds) interbedded with clean sand lenses and beds.

2.4 *HYDROGEOLOGY*

Previous site investigations have identified two distinct water-bearing zones at the site, the "A" zone and the B zone. The "A" zone is a shallow perched water zone in the backfill material. The B zone is present in the deeper coarse grained materials. The water bearing zones are separated by a continuous layer of fine-grained bay mud, which acts as an aquitard between the two zones.
Water levels in the "A" zone fluctuate approximately 2 to 4 feet seasonally in response to local precipitation events and are not influenced by tidal fluctuations in Humboldt Bay. Water levels in the B zone fluctuate approximately 1 to 2 feet seasonally and are influenced by daily tidal fluctuations in Humboldt Bay. Historic groundwater data collected from "A" zone groundwater monitoring wells at the site indicates water levels range from 3 to 8 feet BGS. This data also indicates that the "A" zone perched aquifer occasionally goes dry during the driest time of year. A shallow groundwater mound has been observed in the central area of the site, resulting in "A" zone groundwater flow in a radial pattern away from the central portion of the site. This groundwater mound has resulted in a large area of the "A" zone where groundwater movement is diminished due to a very shallow gradient (0.002 or less).

Historic groundwater data collected from B zone groundwater monitoring wells indicates that groundwater levels range from approximately 6 to 12 feet BGS. Flow in the B zone is generally in a northwesterly direction, towards Humboldt Bay, with variations in groundwater gradient due to the effects of tidal influence. Recent data have indicated a shallow groundwater gradient of approximately 0.003 or less.

2.5 SITE DRAINAGE

The site is generally flat except for areas of low relief along Clark Slough with localized drainage along the western and eastern perimeters. Across much of the site, there are no clear drainage patterns that direct rainwater to the perimeter drainage ditches. Observations conducted during rain events indicate that rainfall infiltrates to the subsurface with localized surface water runoff. The western perimeter drainage drains south, to Clark Slough, which drains to Humboldt Bay. Observations of the western drain have shown that water that collects in the drain ponds and slowly flows towards Clark Slough. Debris and natural vegetation in the western ditch has resulted in the formation of reservoir-type features that hold water and not allowing for unrestricted flow in the ditch. Rainwater tends to fill each reservoir and spill from one to another as it makes its way towards Clark Slough. Observations of the western drainage ditch also show that during high tides in Humboldt Bay, bay water backs into Clark Slough and into the western ditch via the culvert that connects the western ditch to Clark Slough. The eastern perimeter drainage drains to an area in the southeast portion of the site where it ponds, and infiltrates into the subsurface. Some water from the eastern perimeter drainage drains to a point located within a drainage ditch along the southern property boundary. The southern property boundary ditch is connected to a drainpipe that is connected to the municipal stormwater drainage system. At the connection point, the municipal stormwater culvert is large, and provides drainage for the entire upstream area of the City of Eureka that drains towards Clark Slough. Effluent from the drain pipe mixes with the municipal stormwater effluent prior to entering Clark Slough. A site topography map is presented as Figure 3.

2.6 SITE INVESTIGATION HISTORY

This section presents a chronological summary of environmental activities and regulatory oversight for the former rail yard from July 1974 to the present. The locations of site investigations activities and the corresponding analytical results are attached as appendices. The nature and extent of contamination identified at the site is discussed in detail in Section 3.0.

In July 1974, the RWQCB issued Order No. 74-151 for the site to NPRC. The order required preparation of a Spill Prevention Control and Countermeasure (SPCC) plan for the site. NPRC implemented the SPCC plan on August 28, 1975, and submitted a National Pollution Discharge Elimination System (NPDES) report to the RWQCB in October 1974 (NPDES No. CA0023698) describing the discharge of waste water from the site (Geomatrix, 1991).

In November 1975, the RWQCB adopted Waste Discharge Requirement (WDR) Order No. 75-10 to address storm water runoff containing petroleum constituents. The order specified that discharge of storm water from the site containing petroleum constituents be discontinued and countermeasures for release of petroleum hydrocarbons to Humboldt Bay be implemented (RWQCB, 1975).

In response to WDR Order No. 75-10, NPRC installed a subsurface oil collection system and aboveground oil-water separator at the site in January 1976 (Figure 2). The oil-water collection system was installed near the locomotive service and refueling platforms, and below the main railroad track extending from the turntable to the service platforms. The RWQCB issued NPDES permit No. CA0023698 for the discharge of treated water from the oil-water collection system. The system operated at the site until January 1986, and in August 1990, the SPTCo removed oily water residue from the oil-water separator and associated piping (Geomatrix, 1991).

WDR Order Nos. 76-9 and 81-3 were adopted for the site by the RWQCB on January 29, 1976, and January 22, 1981, respectively. Following the expiration of Order No. 81-3 in January 1986, site use had decreased significantly, and the discharge of treated water from the oil-water separator reportedly ceased (Geomatrix, 1991).

In June 1988, Canonie Environmental Services removed four USTs from the site in the area of the former tool shed (Figure 2). The USTs were used to store leaded gasoline for company vehicles, and ranged in size from 600 to 2,500-gallon capacity. Soil and grab groundwater samples were collected for laboratory analysis during removal of the USTs. Soil samples collected from the UST excavation areas contained no detectable concentrations of petroleum constituents; however the groundwater sample contained petroleum hydrocarbons and associated constituents (Canonie 1989).

In July 1988, an Environmental Impact Report (EIR) was completed for the site for the proposed construction of a jail for the County of Humboldt (Western 1988). The EIR identified the environmental effects pertinent to the railroad yard, including local biological resources, potential geologic and seismic hazards relevant to construction, and other public service and land use issues. The railroad yard was one of three candidates for proposed construction of the jail and was ultimately not selected.

In November 1988, Pace Laboratories, Inc. conducted a hazardous waste survey at the site for determining the presence of hazardous waste associated with historic site use (Pace 1988). Eleven soil borings (PL-1 through PL-11) and six monitoring wells (PMW-1A through PMW-6A) were completed at the site during the survey. The monitoring wells were completed at depths of 5 to 8 feet BGS in the upper soils of the site. Soil and groundwater samples were collected during site activities for laboratory analysis. Soil sample analytical results identified elevated concentrations of oil and grease, Total Petroleum Hydrocarbons as Diesel (TPHD), and Total Petroleum Hydrocarbons as Gasoline (TPHG). Laboratory analytical results for groundwater samples collected from site wells detected elevated concentrations of TPHD and oil and grease.

In August 1989, International Technology Corporation (IT) identified and containerized potential hazardous materials for disposal. In September 1989, IT removed approximately 980 gallons of potentially hazardous materials from the site for proper disposal (Geometrix 1991).

In August 1989, Geomatrix supervised the destruction of the six monitoring wells installed at the site in November 1988 by Pace Laboratories, Inc. (PMW-1A through PMW-6A). The wells were destroyed because they were installed and constructed using non-standard techniques. Work conducted at the site during this field event additionally included the completion of soil boring B-1 to a depth of 30 feet BGS (Geometrix 1991).

In October 1989, a shallow groundwater study was conducted at the site to further evaluate the potential impact to groundwater identified by Pace (Geometrix 1991). Seventeen well point borings were installed at the site for the purpose of collecting groundwater samples for laboratory analysis (SG-1A through SG-8A and SG-9B through SG-17B). Shallow groundwater was collected at a depth of 5 to 6 feet BGS in boring locations SG-1A through SG-8A, and at a depth of 10 to 12 feet BGS in boring locations SG-9B through SG-17B (boring location SG-13A was not sampled). Boring locations SG-9 through SG-17 required a greater completion depth due to the upper soils containing higher amounts of fined-grained material.

In February 1990, a hydrogeologic evaluation and groundwater quality study were completed at the site (Geomatrix 1991). Field activities conducted under this study included; the installation of four deep soil borings (B-2 through B-5), nine Cone Penetrometer Test (CPT) borings (CPT-1 through CPT-9), and 10 well point soil borings (GW-1B through GW-10B). The depths of the deep soil and CPT borings ranged from 30 to 65 feet BGS, and provided hydrogeologic profiles for the site. The well point soil borings were completed in the "B" zone, and extended to depths of approximately 13 to 18 feet BGS. Groundwater samples were collected from the 10 boring locations for chemical analysis of petroleum constituents using a hydropunch. Results from the "B" zone groundwater sample analysis are discussed in Section 3.2.

In August 1990, a trenching investigation was completed in the former operations area to evaluate the lateral extent of petroleum hydrocarbons above the "A" zone water table (Geomatrix 1991). Eleven trenches were excavated at the site to delineate the fueling and ancillary service areas (T-1 through T-11). A total of 199 soil-screening samples were collected from the trenching area and analyzed in the field by Thin Layer Chromatography (TLC). Based on the field screening results, 86 soil samples collected from the trenches were submitted for laboratory analysis. Laboratory results from the soil sample collected during trenching activities are discussed in Section 3.1.

In July and August 1990, approximately 3,500 gallons of oily-waste water was removed from the inoperative oil water separator and collection standpipes. The material was removed by a vacuum truck and transported to a licensed recycling facility for disposal. The oil-water separator was sealed following material removal by welding a steel plate over the opening to prevent disposal or storage of waste liquids (Geomatrix 1991).

In August 1992, the installation of 8 monitoring wells was conducted at the site. (Geomatrix 1994). Five of the monitoring wells were completed in the "A" zone

(MW-1A through MW-5A) and three monitoring wells were completed in the "B" zone (MW-1B, -2B, -3B). The network of monitoring wells was located in areas of concern and along the perimeter of the site. The wells were subsequently developed and sampled for water quality in September 1992.
In September 1992, a second trenching investigation was completed at the site in the area of the former oil disposal pits south of the roundhouse (Geomatrix 1994). Eleven trenches were excavated in the area (T-12 through T-22) to evaluate the extent of petroleum hydrocarbon in soil. A total of 171 soil-screening samples were collected from the trenching area and analyzed in the field by TLC. Based on the field screening results, 44 soil samples collected from the trenches were submitted for laboratory analysis. Laboratory results from the soil sample analysis are discussed in Section 3.1.

In September 1992, a tidal influence study was conducted at the site to assess the effects of Humboldt Bay tidal fluctuations on site water levels (Geomatrix 1994). Water levels in "A" zone and "B" zone monitoring wells and tidal monitoring stations were measured over a two-day period. Water levels measured in the "A" zone monitoring wells showed no response to tidal fluctuations in Humboldt Bay. Water levels measured in the "B" zone monitoring wells changed elevations in response to tidal fluctuations in Humboldt Bay.

In May 1993, the installation of 2 additional "A" zone monitoring wells was completed at the site (MW- 6A and MW-7A) (Geomatrix 1994). The locations of monitoring wells MW-6A and MW-7A were selected based on review of the water level data obtained in September 1992 from existing site wells.

In June 1996 a Heath Risk Assessment work plan was submitted to the RWQCB that outlined the work to be performed for the preparation of a Health Risk Assessment (HRA) of the site. The work plan discussed additional information that would be collected from the site in order to prepare the HRA (Geomatrix, 1996).

In June 1997, a HRA was submitted to the RWQCB which evaluated potential human health risks associated with the presence of chemicals in soil at the site. Results of the HRA indicated that:

- Concentrations of chemicals in groundwater were less than published drinking water standards.
- Potential risks associated with exposure to chemicals of potential concern by inhalation or direct exposure should not pose an unacceptable non-carcinogenic or carcinogenic health risk to onsite receptors.
- Potential risks associated with exposure to chemicals of potential concern by inhalation of re-suspended particulates or vapors to offsite receptors should not pose an unacceptable non-carcinogenic or carcinogenic health risk, and
- Exposure to lead in soil should not pose an unacceptable risk for onsite receptors (Geomatrix, 1997).

In a letter dated August 5, 1997, California Environmental Protection Agency (Cal/EPA), concluded that the HRA was suitable for use by the RWQCB as a

basis for evaluating the need for soil and/or groundwater remediation at the site (Cal/EPA, 1997).

In November 1996, a shallow soil investigation was completed throughout the operations area to support the site HRA (Geomatrix 1996). A total of 53 soil samples were collected from 30 soil-boring locations throughout the site for laboratory analysis (G-1 through G-53). Two piezometers were installed in the operations area during this phase of site work (P-8 and P-9). The wells were completed in the "A" zone to a depth of 10 feet BGS.

In April 1996, a trenching investigation was conducted near Clark Slough (Geomatrix 1996). Two trenches were excavated adjacent to Clark Slough (T-23 and T-24) to investigate the potential presence of an oily residue that was reportedly observed in December 1994. A total of 18 soil-screening samples were collected from the trenching area and analyzed in the field by TLC. Based on the field screening results, 7 soil samples collected from the trenches were submitted for laboratory analysis. One grab groundwater sample containing a wax like film on the surface was collected for laboratory analysis during trenching activities. Laboratory results from groundwater sample analysis indicated the material was biogenic and not a petroleum compound.

Additional monitoring wells have been installed in the "A" zone and "B" zone at the site including: MW-10A (April 1996), MW-11A, MW-11B, and MW-12A (July 2000).

In October 1997, an initial subsurface investigation was conducted at the former Renner cardlock facility to assess the presence and extent of petroleum impacted soil and ground water. Additional site investigation work was conducted, and a Corrective Action Plan (CAP) was prepared for submittal to the Humboldt County Division of Environmental Health in October 2008. The CAP was implemented in November 1998, including source-removal activities. Upon completion of site remediation activities, a Verification Monitoring Program (VMP) was implemented (W&K, 1999). The VMP was carried out until the site was closed in May 2006.

In June 1999, a limited subsurface investigation was conducted in the former General Petroleum area of the site. The subsurface investigation included drilling and sampling 20 soil borings, and the collection of grab ground water samples for laboratory analysis.

In July 2000, groundwater monitoring was implemented at the former General Petroleum site, a former bulk fuel storage plant located at 736 Broadway. Four wells (MW-13A, MW-13B, MW-14B and MW-15B) were installed and are included in the ground water monitoring program at the former General Petroleum site. Ongoing monitoring is being conducted at the site for TPHG, BTEX, TPHD, TPHMO and TPHBC.

In April 2000 a Health Risk Assessment Addendum (HRAA) was submitted which incorporated additional soil, ground water and surface water information that had been collected at the site after the 1997 HRA was submitted. The HRAA

also updated several exposure parameters and toxicity criteria to reflect more recent USEPA and Cal-EPA guidance. The results of the HRAA indicated that the presence of chemicals in soil at the site should not pose an unacceptable non-carcinogenic or carcinogenic health risk to potential onsite or offsite receptors. In a memo dated July 7, 2000, Cal-EPA agreed with the conclusions found in the HRAA. As an added comment, the Cal-EPA noted that a change in the use of the property could result in increased use of a landscaper, higher than the frequency outlined in the HRAA.

On May 9, 2001, the RWQCB issued CAO No. R1-2001-26.

In March 2001, shallow soil samples were collected from test pits completed at the site for the analysis of arsenic (Geomatrix, 2001). Ten test pits were completed at locations primarily concentrated in the northeast portion of the site (A-01 through A-10) to assess the leaching potential of arsenic.

In September 2001, shallow soil and groundwater samples were collected at the site for the analysis of arsenic, lead and copper (Geomatrix, 2001). Ten soil borings were completed at locations throughout the site (SS-1 through SS-10) to determine the total and soluble concentrations of metals.

In December 2001, an IRAP was submitted to the RWQCB. The 2001 IRAP proposed interim remedial measures to address the following:

- Metals-impacted soil in two areas of the southern portion of the site. It was proposed in the 2001 IRAP to conduct soil excavation in these two areas.
- The potential for migration of contaminants to ground water and/or surface water, and a contingency plan to address any future discharges identified during site monitoring activities. It was proposed to evaluate ground water concentration trends as part of the ongoing ground water monitoring program. This information would be used to assess whether or not additional remediation would be required. To address the issue of the potential for the migration of contaminants in surface water, it was proposed to evaluate surface water monitoring results, and implement remedial measures to intercept surface water runoff and capture sediment when warranted, based on surface water monitoring results.
- A site contingency plan to address potential subsurface activities prior to the development of a final Remedial Action Plan (RAP). In order to address this issue, an interim Soil Management Plan (ISMP) was prepared and attached as an appendix to the 2001 IRAP. The ISMP included guidelines to be followed by parties involved with the disturbance of subsurface soils.
- An operation and maintenance (O&M) plan to address illegal dumping of waste onto the property by trespassers. The O&M plan consisted of the posting of appropriate signage, quarterly inspection of the site, and subsequent debris removal, if found, and periodic vegetation control (Geomatrix, 2001).

In September 2002, interim remediation was conducted at the site. Interim remediation included the excavation of approximately 700 cubic yards of soil containing lead and copper at concentrations exceeding California Code of Regulations, Title 22 Total Threshold Limit Concentration (TTLC) criteria (Geomatrix 2002). Approximately 450 cubic yards of contaminated soil was excavated from one area, located immediately south of the former Roundhouse building. Approximately 250 cubic yards of contaminated soil was excavated from a second area, located approximately 150 feet to the south of the former turntable location. The excavated areas are shown on Figure 2. This work was conducted in accordance with the 2001 IRAP.

On July 22, 2002, Monitoring and Reporting Program (M&RP) No. R1-2002-0082 was issued for the site by the RWQCB, replacing M&RP R1-2001-29. The site-monitoring program includes the collection of groundwater samples on a semiannual basis and the collection of surface water samples during periods of storm water runoff.

In October 2003, additional soil was excavated from Area I at the location of a confirmation sample containing elevated lead levels (Geomatrix 2003). As with the September 2002 interim remediation, this work was conducted in accordance with the 2001 IRAP.

On July 30, 31, 2007, and again in January and March, 2008, Humboldt Baykeeper (HB) conducted inspections at the site, which included the collection of site-specific data. During the July 2007 site inspection, HB collected soil samples for laboratory analysis and depth to water data from site monitoring wells, and conducted a tidal influence study using select site wells. The tidal influence study was conducted to assess the effects of tides in Humboldt Bay on ground water beneath the site. During the January 2008 site inspection, HB collected additional soil and water samples. During the March 2008 site inspection, HB conducted a dye-tracer study on the drain pipe that is connected to the southern drainage ditch. The dye-tracer study was conducted to assess the discharge point of the drain pipe.

Biannual ground water monitoring, and monthly surface water monitoring during the rainy season, continues at the site in accordance with RWQCB Monitoring and Reporting Program (MRP) No. R1-2002-0082.

3.0 *NATURE AND EXTENT OF CONTAMINATION*

Numerous site investigation activities have been conducted to determine the extent of contamination present in soil and groundwater at the site. Field programs completed have involved soil sampling, groundwater sampling, storm water sampling, soil borings, trenching, field-testing, site inspections, and laboratory analysis. This section summarizes the nature and extent of contamination identified at the site.

3.1 *SOILS*

The shallow soils beneath the site are impacted primarily with long-chain petroleum hydrocarbons such as diesel and Bunker C. Metals analysis conducted on soil samples collected throughout the site have shown the presence of elevated concentrations of arsenic, copper, and lead.

3.1.1 *Petroleum Hydrocarbons*

Trenching activities were conducted at locations of the site that identified petroleum in soil in various areas of the site. A site map showing trenching locations is presented in Appendix A. Long-chain petroleum hydrocarbons were found in soil samples collected throughout the site. Three locations (trench locations T-33, T-35 and T-36) had TPHD concentrations greater than or equal to 10,000 milligrams per kilogram (mg/kg). Laboratory results for petroleum soil sample analyses are summarized in Appendix B. The largest area of stained soil was located south of the roundhouse, in the area believed to be a former oil disposal pit. Petroleum-stained soil was observed in this area to a depth of 8 feet BGS, and separate-phase petroleum was observed on water in this area. This is an area that was excavated in 2002.

Polynuclear Aromatic Hydrocarbons (PNAs) were analyzed in a total of 40 soil samples collected throughout the site. Soil samples were collected at depths ranging from ground surface to 4 feet BGS. PNAs were detected at low concentrations in 28 near surfaces soil samples collected in the former operations area. Laboratory results for PNAs soil sample analyses are summarized in Appendix C.

Laboratory analysis for BTEX was conducted on 117 soil samples collected at the site (not including the General Petroleum area), from depths ranging from 0.75 to 6 feet BGS. Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) constituents were detected in only 5 samples, all collected near the former locomotive refueling platforms and Bunker C oil storage tank. Benzene was detected in one soil sample. Laboratory results for BTEX soil sample analyses are summarized in Appendix D.

A limited site investigation was conducted at the former General Petroleum portion of the site in 1999. Results of the investigation indicated the presence of elevated total petroleum hydrocarbons as gasoline (TPHG) concentrations in soil. A TPHG concentration of 19,000 mg/kg and the presence of separate-phase product was reported in soil in a limited area of the General Petroleum site (Geomatrix, 1999). Laboratory results for soil sample analyses are summarized in Appendix E.

Results from the October 1998 site investigation conducted at the former Renner cardlock facility indicated the presence of TPHG, TPHD and TPHMO in soil at maximum concentrations of 980 mg/kg, 2,800 mg/kg, and 850 mg/kg, respectively. Analytical results of ground water samples collected during the October 1998 site investigation indicated the presence of TPHG, TPHD and

TPHMO in ground water at maximum concentrations of 13,000 micrograms per liter (ug/l), 17,000 ug/l, and 1,000 ug/l, respectively. Site corrective action conducted in November 1998 resulted in the removal of 159 cubic yards and 4,700 gallons of petroleum-impacted soil and ground water, respectively. Post-corrective action sampling and monitoring indicated that residual petroleum hydrocarbon soil had been left in place. TPHG and TPHD were detected in excavation sidewall confirmation samples at maximum concentrations of 120 mg/kg, and 250 mg/kg, respectively (W&K, 1999).

3.1.2 *Metals*

The results of metals analysis for soil samples identified all 17 of the California Code of Regulations Title 22 metals in site soil. A total of 56 soil samples were analyzed for 17 CCR Title 22 metals. Additional soil samples were collected and analyzed for lead (86 total samples), copper (65 total samples), chromium (61 total samples), and hexavalent chromium (11 total samples). Laboratory results for metals soil sample analyses are summarized in Appendix F. Soil samples collected for metals analyses were obtained at depths ranging from ground surface, to 5.5 feet BGS.

Metals were detected in soil samples across the site at varying concentrations. Three soil samples collected south of the roundhouse in the area of the former oil disposal pit were shown to contain concentrations exceeding Total Threshold Limit Concentrations (TTLC) criteria for hazardous waste (CCR Title 22) for the following metals. Two soil samples (T13-S08-2.0, T-34-4.5) exceeded the criteria for lead (TTLC 1000 mg/kg) and two (G-46-20, G-6) exceeded the criteria for copper (TTLC 2500 mg/kg). This is an area that was excavated in September 2002. A soil sample collected from stockpiled soil (sample SHN-SP-25) to the south of the former roundhouse had a lead concentration that exceeded the lead TTLC. Lead concentrations in soil ranged from less than 5 mg/kg to 810 mg/kg in soil samples collected outside of the excavated areas.

Arsenic was detected in two soil samples, sample SHN-S-17, and HB sample S-5, collected on July 30, 2007 at concentrations above the TTLC (500 mg/kg). It should be noted that a split sample of the HB sample S-5, analyzed by CUE VI had an arsenic concentration of 160 mg/kg. Arsenic concentrations in other areas of the site ranged from less than 0.1 mg/kg to 490 mg/kg.

3.1.3 *VOCs*

Volatile Organic Compound (VOC) analysis was conducted on 39 soil samples collected from across the site. Laboratory results for VOC soil sample analyses are summarized in Appendix G. The only VOC detected in site soil was Tetrachloroethylene (PCE), in one sample collected near the perimeter drainage ditch on the ease side of the property.

3.1.4 *Dioxins*

Three soil samples collected during the July 2007 HB site inspection were analyzed for Dioxins and Furans. Soil sample splits were provided to CUE VI by

HB in order that CUE VI could have an independent analysis of the samples conducted. The analysis of Dioxins and Furans includes the results of several congeners, which are then adjusted and reported in picograms per gram (pg/g) as a Total Equivalency Quotient (TEQ) for Dioxins and Furans. Dioxin analytical results for the HB soil samples ranged from 217 pg/g TEQ to 593 pg/g TEQ, as compared to a range of 140 pg/g TEQ to 212 pg/g TEQ for the split samples provided to CUE VI by HB.

Four soil samples collected during the January 2008 HB site inspection were analyzed for Dioxins and Furans. Soil sample splits were provided to CUE VI by HB in order that CUE VI could have an independent analysis of the samples conducted. Dioxin analytical results for the HB soil samples ranged from 20.78 pg/g TEQ to 1,027.44 pg/g TEQ, as compared to a range of 16.08 pg/g TEQ to 106.4 pg/g TEQ for the split samples provided to CUE VI by HB. It should be noted that the laboratory report for the HB sample result of 1,027.44 pg/g noted that the sample quality control spike data for that sample was outside of the stated control limits and values for several congeners were estimated because the results exceeded the calibration range. These noted discrepancies call into question the sample result. If the questionable sample result is omitted, the HB soil samples ranged from 20.78 pg/g TEQ to 40.2 pg/g TEQ, as compared to a range of 16.08 pg/g TEQ to 106.4 pg/g TEQ for the split samples provided to CUE VI by HB.

Laboratory results for Dioxin soil sample analyses are summarized in Appendix H.

3.1.5 *PCBs*

Four soil samples collected during the July 2007 HB site inspection were analyzed for Polychlorinated Biphenols (PCBs), with total PCB concentrations ranging from less than the method detection limit to 120 micrograms per kilogram. Laboratory results for PCB soil sample analyses are summarized in Appendix I.

3.1.6 *Summary*

Site investigations completed to date have indicated that long-chain petroleum hydrocarbons, lead, copper and arsenic are the primary constituents of concern at the site. Site operations resulted in the release of petroleum hydrocarbons in areas south of the former roundhouse (oil disposal pits) and near the former car repair shed and former Bunker C AST. Site investigation results at the former General Petroleum area of the site indicated the presence of elevated TPHG concentrations in a limited area of the site. Elevated lead and copper concentrations were found in the area of the former oil disposal pits (south of former roundhouse). Outside of the areas excavated in 2002, Arsenic was detected in two soil samples (Sample SHN-S-17 and HB sample S-5) at concentrations above the TTLC (500 mg/kg) . The arsenic concentration of a split sample for HB sample S-5 had an arsenic concentration of 160 mg/kg. Dioxin analytical results for the HB soil samples ranged from 20.78 pg/g TEQ to 593 pg/g TEQ, as compared to a range of 16.08 pg/g TEQ to 212 pg/g TEQ for

the split samples provided to CUE VI by HB. The HB-supplied dioxin result with the questionable lab report is not included in this summary.

3.2 GROUNDWATER

Groundwater monitoring at the site has occurred intermittently since 1992 and regularly since 1995. The current monitoring well program consists of 15 wells throughout the site and 4 wells located at the former General Petroleum site. Groundwater samples are currently collected semiannually from 13 "A" Zone monitoring wells and 3 "B" Zone monitoring wells. Additionally, one "A" Zone piezometer is located in an area where residual petroleum was observed in soil. Monitoring well locations are shown in Figure 2. Groundwater sample laboratory analyses have included TPHD, TPHMO, TPHBC, TPHG, PNAs, BTEX, (SVOCs), VOCs, and metals (arsenic, cadmium, total chromium, copper, lead, nickel, and zinc). Beginning in February 2007, ground water samples analyzed for TPHD, TPHMO and TPHBC have been passed through a silica gel column prior to being analyzed. This process removes non-petroleum hydrocarbons (woodwaste or other biogenic material) from the sample. The distribution of constituents detected in groundwater throughout the site is discussed in this section. The historical analytical results for groundwater samples collected from site wells are presented in Appendix J.

3.2.1 "A" Zone Ground Water

Historic water quality data indicates that long-chain petroleum hydrocarbons have been found in groundwater collected from the "A" zone. TPHG, TPHD, Total Petroleum Hydrocarbons as Motor Oil (TPHMO), and Total Petroleum Hydrocarbons as Bunker C (TPHBC) are the petroleum hydrocarbons that have been detected in some site wells. TPHD, TPHMO and TPHBC concentrations have been found in the area of the site north of the former car repair shed. Groundwater collected from wells MW-7A and piezometer P-8A have indicated the presence of TPHD, TPHMO, and TPHBC. The area impacted by petroleum hydrocarbons appears to be limited in extent and not migrating. Petroleum hydrocarbon concentrations found in other site wells have consistently been low or below the method detection limit.

TPHG concentrations have been found in ground water samples collected from A-zone well MW-13A at the former General Petroleum area of the site. BTEX components have also been detected in site monitoring well MW-13A (former General Petroleum area).

Ground water sampling conducted as part of the VMP at the former Renner cardlock facility indicated the presence of TPHG and TPHD in ground water during the November 1998 sampling event at maximum concentrations of 4,300 ug/l, and 1,200 ug/l, respectively. (W&K, 1999). Ground water monitoring results conducted in January 2005 indicated the presence of TPHG and TPHD at maximum concentrations of 730 ug/l, and 600 ug/l, respectively (RWQCB, 2009).

The only PNA detected during historic site monitoring was Acenaphthalene in well MW-4A. Acenaphthene was detected at low concentrations (up to 2.1 ug/L) during the January and March 2002 monitoring events.

Phenol was detected in "A" Zone groundwater at concentrations ranging from 1 ug/L to 4 ug/L in wells MW-3A, MW-4A, MW-6A, and piezometer P-8A during the May 1999 groundwater-monitoring event (Geomatrix, April 2000). Phenol was not detected during any subsequent groundwater-monitoring events.

Zinc, arsenic and lead are the only metals detected in "A" Zone monitoring wells. Zinc and lead concentrations detected in groundwater samples are below their respective Maximum Contaminant Levels (MCLs). Arsenic has been detected in groundwater collected from "A" zone wells at concentrations that are generally below both the State of California MCL of 10 ug/L. The highest arsenic concentrations were found in well MW-3A (22.6 ug/L, March 2003), well MW-13A (14 ug/L, September 2008) well MW-16A (58 ug/L, February 2008). Arsenic concentrations in site wells generally range from less than the detection limit (<2.0 ug/L) to 10 ug/L.

Lead was detected in one groundwater sample collected from well MW-2A above the Action Level (AL) of 15 ug/L during the September 1992 monitoring event, at a concentration of 180 ug/L. It should be noted that lead was not detected in a duplicate groundwater sample collected from MW-2A during the September 1992 monitoring event. Lead was also found in the groundwater sample collected from well MW-4A during the September 1992 sampling event at a concentration of 6 ug/L, a concentration that is less than the AL. Lead has not been detected in any other groundwater samples analyzed as part of the groundwater-monitoring program for the site.

Isolated VOCs were detected at low concentrations during the 1992 sampling event in wells MW-2A and MW-7A. 1,1-Dichloroethane was detected in well MW-2A at a concentration of 0.54 ug/L and vinyl chloride was detected in well MW-7A at a concentration of 1.5 ug/L. No other VOCs have been detected in "A" Zone groundwater samples.

3.2.2 "B" Zone Ground Water

The impact to "B" zone groundwater has been minimal. TPHBC was detected in a ground water sample collected from well MW-13B at a concentration of 350 ug/L during the February 2007 sampling event.

Arsenic, barium, copper, lead, and zinc have all been detected in groundwater samples from "B" zone wells. Arsenic, barium, copper, and zinc did not exceed either their respective MCLs, and lead did not exceed the AL.

Phenol has been periodically detected in groundwater samples collected from wells MW-1B, MW-2B, and MW-3B at concentrations ranging from below the method detection limit (<1.0 ug/L) to 96 ug/L. The concentration of 96 ug/L was detected in the groundwater sample collected from monitoring well MW-1B during the April 1996 monitoring event (Geomatrix, April 2000).

The VOC Trichloroethylene (TCE) was detected one time during the first sampling event in monitoring well MW-3B (September 1992), at a concentration of 1.5 ug/L. No other VOCs have been detected in "B" Zone groundwater samples.

3.3 STORM WATER MONITORING

Storm water runoff sampling has been ongoing at the site since December 2001. Current monitoring is conducted at 6 locations shown in Figure 3 (locations A through F). Surface water sampling points A, B, and F are located on the eastern portion of the site. Surface water sampling point D is located in the western portion of the site. Surface water samples are currently analyzed for TPHD, turbidity, and both dissolved, and total arsenic, copper and zinc. Discussions of storm water runoff for the eastern and western drainage courses are presented below. The historic analytical results for surface water samples collected at the site through February 2009 are presented in Appendix K.

3.3.1 Eastern Drainage Course

Surface water samples collected from drainage ditches have identified petroleum hydrocarbons (most recent 2005) and metals in the eastern drainage course of the site. Storm water from properties adjacent to the eastern property boundary flows onto the site, and constituents detected in the eastern sampling points may be entering the drainage ditch from adjacent properties. Copper, arsenic, and zinc were locally present in storm water runoff at the following concentrations:

- Dissolved arsenic concentrations ranged from less than 1 ug/L to 11 ug/L. Total arsenic concentrations ranged from less than 1 ug/L to 21 ug/L.
- Dissolved copper ranged from 1.86 ug/L to 27 ug/L. Total copper ranged from <5 ug/L to 62 ug/L.
- Dissolved zinc ranged from less than 5 ug/L to 260 ug/L. Total zinc ranged from 3.03 ug/L to 560 ug/L.

TPHD has been detected at concentrations ranging from less than 50 ug/L to 150 ug/L, however, petroleum hydrocarbons have not been detected since 2005.

3.3.2 Western Drainage Course

Storm water that collects in the western ditch drains along the western boundary to the south, and eventually drains into Clark Slough. Copper, arsenic, and zinc were locally present in storm water runoff at the following concentrations:

- Dissolved arsenic concentrations ranged from 8 ug/L to 28 ug/L. Total arsenic concentrations ranged from 9.78 ug/L to 57 ug/L.
- Dissolved copper ranged from 2.2 ug/L to 11 ug/L. Total copper ranged from 1.87 ug/L to 160 ug/L.

- Dissolved zinc ranged from 8.8 ug/L to 36 ug/L. Total zinc ranged from 1.3 ug/L to 27 ug/L.

TPHD has been detected at concentrations ranging from less than 50 ug/L to 120 ug/L.

3.4 REMEDIAL MEASURES CONDUCTED TO DATE

In June 1988, Canonie Environmental Services removed four USTs from the site. The USTs were used to store gasoline, and ranged in size from 600- to 2,500-gallon capacity.

In August 1989, IT identified and containerized potential hazardous materials for disposal. In September 1989, IT removed approximately 980 gallons of potentially hazardous materials from the site for proper disposal. In July and August 1990, approximately 3,500 gallons of oily-waste water was removed from the site and transported to a licensed recycling facility by Jim Dobbas, Inc. for disposal.

In September 2002, Geomatrix Consultants Inc. (Geomatrix) conducted interim remediation at the site. Interim remediation included the excavation of approximately 700 cubic yards of soil containing metals at concentrations exceeding California Code of Regulations, Title 22 Total Threshold Limit Concentration (TTLC) criteria. Two areas were excavated. Approximately 450 cubic yards of soil was excavated from the first area, located immediately south of the former Roundhouse building. Approximately 250 cubic yards of soil was excavated from the second area, located approximately 150 feet to the south of the former turntable location. The excavated areas are shown on Figure 2.

In 2007 CUE VI installed fiber filter rolls along the existing gravel roadways within the site as a response to a request from the RWQCB to implement best management practices to reduce the presence of metals in surface water runoff.

3.5 SITE CONCEPTUAL MODEL

In order to design remediation strategies that are appropriate for the site, existing site information was used to develop a Site Conceptual Model (SCM). The SCM provides the technical basis needed develop a hypothesis regarding the location, and potential movement of contaminants of concern at the site and any potential impacts that may occur to human health, the environment, or beneficial uses of resources.

Three stratographic layers that include two water-bearing zones underlie the site. The uppermost layer consists of fill material. This fill material has a perched zone aquifer, identified as the "A" zone. The "A" zone aquifer is not tidally influenced. The second layer is bay mud material, a fine-grained material that acts as an aquitard between the first and third layers. The third layer is coarse-

grained material that contains the B zone aquifer. The B zone aquifer is tidally influenced by Humboldt Bay.

Long-chain petroleum hydrocarbons, primarily TPHD, are found in soil at shallow depths throughout the site, however; only isolated areas have high TPHD concentrations. Three primary areas have been identified that contained elevated petroleum hydrocarbon concentrations. Two of the areas had been identified as former oil disposal pits located to the south and southeast of the former round house. These areas were excavated in September 2002 and October 2003. The third area is located to the north and east of the former Bunker C AST. Analytical results of soil samples collected across the site indicate that the long-chain petroleum hydrocarbons present in site soils are not migrating. Although elevated long-chain petroleum hydrocarbon concentrations have been found in "A" zone soils, it appears that the "A" zone soils and underlying bay mud have not allowed the petroleum hydrocarbons to significantly impact the "B" zone.

TPHG was found in shallow soil at the former General Petroleum area. Soil analytical results indicate that the extent of the impacted area is limited primarily to the upper "A" zone.

Metals have also been found in shallow soils on site. Elevated metals concentrations found in the former oil disposal pit areas located to the south and southeast of the former round house were excavated during the September 2002 and October 2003 interim remedial actions. Arsenic has been identified in an area near existing well MW-10A. Analytical results of samples collected from the site indicate, just as with the petroleum hydrocarbons, the metals present in subsurface soils do not appear to be mobilizing.

Dioxins were detected in shallow soil samples collected from four ditch areas of the site and in locations in Clark Slough. Dioxins are considered insoluble, therefore, the mobility of dioxins is limited to the movement of sediment.

TPHD and TPHBC are found in groundwater in the "A" zone in the area north and east of the former Bunker C AST. "A" zone wells that are around the perimeter of the affected area indicate that the migration of petroleum hydrocarbons from this area is limited. TPHG is present in ground water in the "A" and "B" zones in the area of the former General Petroleum facility. Ongoing ground water monitoring indicates that TPHG is primarily present in the "A" zone.

The impact to groundwater by arsenic, copper and lead has been minimal. Like the petroleum hydrocarbons found at the site, the metals have characteristics that inhibit their impact to groundwater. Metals generally have lower solubility characteristics in groundwater and tend to bind to soil.

Impact to groundwater in the B zone has been minimal, indicating that the bay mud that separates the "A" zone from the B zone is an effective aquitard.

There are several factors that are inhibiting the migration of existing petroleum hydrocarbons towards Humboldt Bay.

- The petroleum hydrocarbons that are present in subsurface soils are long-chained hydrocarbons that have low solubility and high viscosity characteristics.
- The long-chained petroleum hydrocarbons are primarily absorbed onto subsurface soil, as demonstrated by ongoing ground water monitoring results.
- The soils that make up the "A" zone are a mixture of fine sands, silt, and clay. This mixture naturally has low hydraulic conductivity characteristics.
- The hydraulic gradient of the "A" zone aquifer is very low, typically ranging between 0.001 to 0.003. This results in very slow movement of the groundwater towards Humboldt Bay.

4.0 PROPOSED INTERIM REMEDIAL ACTION

4.1 INTRODUCTION

Since the implementation of the IRAP, the RWQCB has required additional actions. This supplemental IRAP is intended to comply with those requirements, and the CAO. Information collected from previous site investigations and ongoing site monitoring identified the following concerns:

- Ongoing surface water monitoring has indicated the presence of metals in surface water runoff. Best Management Practices have been implemented; however, the condition continues to exist.
- Several areas have been identified through previous site investigation where metals and dioxins are present, and the potential for exposure to humans and other potential sensitive receptors exists.

The objective of this interim remedial action is to implement appropriate measures to address each identified concern. It is proposed to address these identified issues through the use of soil excavation, site grading and the placement of clean material over portions of the site. As part of the preparation of the site for the proposed interim remedial action, existing debris piles, old foundations and other structures will be removed.

4.2 SCOPE

4.2.1 General Site Clearing and Debris Removal

The first step of the proposed interim remediation will be the removal of various debris piles and other remnants that remain on site as a result of the past use of the site as a railroad maintenance facility.

4.2.2 *Concrete Foundation Removal*

Several buildings were once in use at the site. The buildings have been removed; however, concrete foundations were left behind and still exist on site. The most prominent foundation is that of the former Roundhouse. This foundation and others on site will be broken into pieces using mechanical means and transported to an appropriate facility for recycling or disposal.

4.2.3 *Metal and Railroad Tie Debris Pile Removal*

Scrap metal and piles of old railroad ties are present at various locations across the site. The scrap metal will be collected for transportation to a metal recycling facility. The old railroad ties will be collected, transported and disposed of at a facility that is approved to accept such material.

4.2.4 *Old 650,000-Gallon AST Foundation Removal*

A 650,000-gallon steel AST was used by the railroad maintenance yard for the storage of bunker fuel. In 1954 the AST was modified by removing the upper portion of the tank wall and ceiling to create a secondary containment structure that was used to hold two 12,700-gallon ASTs used to store diesel. The modified 650,000-gallon AST structure remains and consists of an approximate 5-foot high steel containment wall that sits on a concrete foundation. The steel wall portion of the structure will be removed and cut into pieces for transport to a metal recycling facility. The concrete foundation will be broken into pieces and tested for the presence of residual petroleum product. The results of the analytical results will be used to assess an appropriate disposal or reuse of the material.

4.2.5 *Sump and Oil/Water Separator Removal*

During recent site inspections a sump measuring approximately 3 feet in diameter by approximately 4 feet deep was discovered just north of the former 650,000-gallon AST. It is proposed to remove the sump by excavation. The excavated material will be tested for the presence of residual petroleum product. The results of the analytical results will be used to assess an appropriate disposal or reuse of the material.

An old oil/water separator was used as part of the former oil-collection system for the site. The oil/water separator will be removed by excavation. The excavated material will be tested for the presence of residual petroleum product. The results of the analytical results will be used to assess an appropriate disposal or reuse of the material.

4.2.6 *Communication Tower Removal*

A communication tower installed by the former railroad maintenance facility is present that will be dismantled and removed from the property. The concrete foundation that supports the communication tower will be broken into pieces and properly disposed or recycled. The communication tower will be sent to a metal recycling facility.

4.2.7 *Former Railyard Turntable Removal*

A turntable used to maneuver railroad engines is present that will require removal. The turntable consists of a steel circular rail that is recessed below grade. The subsurface walls of the turntable are made of timbers that will need to be removed. Once the timbers have been removed, they will be disposed of at a facility certified to accept such material. Once the turntable and accessory parts have been removed, the resulting hole will be backfilled with a clean backfill material and compacted to meet expected future development requirements for the site.

4.2.8 *Focused Soil Remediation*

As previously stated, five areas have been identified where additional focused remediation is proposed. The five areas, the former General Petroleum site, the area near existing well MW-10, and three areas within the eastern and western drainage ditches where dioxins and furans have been identified, will be further remediated through limited excavation. During the excavation of each area, steps will be taken to ensure the protection of human health, including limited-access measures and dust control. The proposed focused soil remediation areas are shown on Figure 4.

4.2.8.1 *Former General Petroleum Site*

The Former General Petroleum Bulk Fuel Plant parcel was developed around 1929, and was operated by General Petroleum until approximately 1955. The site included several ASTs, pumps, piping, filling station, warehouses, and an oil truck storage building. The onsite structures were removed between 1955 and 1957. Ongoing ground water monitoring indicates that petroleum hydrocarbons (primarily in the gasoline range) are present in shallow ground water in a limited area.

Excavation will focus in the shallow A zone that overlies the bay mud aquitard that underlies the area. Geologic information for this area indicates that the shallow A zone extends to approximately 7 feet below ground surface. The highest petroleum hydrocarbon concentrations in ground water in this area have been found in monitoring well MW-13A.

Prior to the conduct of any soil excavation work, four soil borings will be drilled around well MW-13A using hand auger equipment in order to assess the horizontal extent of the petroleum hydrocarbons in this area. Proposed boring locations are shown in Figure 5.

All drilling equipment will be cleaned prior to being brought on site, and will be cleaned after being used at each boring location. Small equipment that requires on-site cleaning during the site investigation will be cleaned using a triple wash system. The equipment will be first washed in a water solution containing Liquinox® cleaner, followed by two distilled water rinses.

Soil cuttings from each boring will be used to describe the lithology of the area and will be screened in the field using an organic vapor analyzer (OVA). The field screening information will be used to assess whether or not the petroleum soil plume has been adequately defined. In the event that the field screening indicates that the petroleum soil plume has not been adequately defined, additional step-out borings will be drilled and sampled.

Once field screening indicates that the petroleum soil plume has been adequately defined, soil samples will be collected from the outermost borings surrounding well MW-13A and submitted to an analytical laboratory and analyzed for:

- Total Petroleum Hydrocarbons as Gasoline (TPHG), Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), and Methyl Tertiary Butyl Ether (MTBE) in general accordance with EPA Method No. 5030/8021.

The combined field screening results and laboratory analytical results will be used to define the lateral extent of the petroleum soil plume, and the extent of the excavation area. It is expected that well MW-13A will be destroyed during the excavation process. The construction materials for well MW-13A will be removed as part of the excavation process. Well MW-13B is set next to Well MW-13A. Attempts will be made during the excavation process to save well MW-13B from being damaged. Well MW-13B is set at approximately 22 feet below ground surface, and the screened interval is set below the B zone aquitard. With care during the excavation process, this well can be protected. The defined excavation area will be excavated to a depth of approximately seven feet below grade. Excavated material will be field screened using an OVA. Once field screening indicates that excavation is complete, confirmation soil samples will be collected from each sidewall and the base of the excavation for laboratory analysis. One sidewall sample will be collected for each 20 linear feet of sidewall, and one floor sample will be collected for each 400 square feet of excavation floor. At a minimum one sidewall sample will be collected from each sidewall and one sample will be collected from the excavation floor.

Each confirmation soil sample will be submitted to an analytical laboratory for chemical analysis. Each soil sample will be analyzed for TPHG, BTEX and MTBE, in general accordance with EPA Method No. 5030/8021.

Upon completion of excavation activities, the excavation pit will be backfilled with clean material and compacted. Well MW-13A will be re-installed for continued ground water monitoring in this area.

4.2.8.2 *Metals Impacted Soils Remediation*

Soil sampling has been conducted throughout the balloon track site to assess the presence of metals, including arsenic. One location has been identified that contains arsenic concentrations that are above the TTLC. The location (Sample No. SHN-S-17) is near existing monitoring well MW-10A and is shown on Figure 6. Previous soil sampling results for arsenic, have indicated that arsenic occurs in shallow soils (generally less than 2 feet below ground surface). For this area, it

is proposed to excavate an area 20 feet by 20 feet centered around location SHN-S-17 to a depth of 3 feet below ground surface. Once the area has been excavated, confirmation soil samples will be collected from each sidewall and the floor of the excavation for submittal to an analytical laboratory for analysis. Each soil sample will be analyzed for arsenic in accordance with EPA Method 200.1.

At one other location, HB collected a soil sample (sample S-5), and provided a split sample to CUE VI for laboratory analysis. The results of the HB analysis indicated the presence of arsenic at a concentration greater than the TTLC. The split sample analyzed by CUE VI had an arsenic concentration below the TTLC, and the average of the two was below the TTLC. Although the sample results were inconclusive as to the true concentration of arsenic, this area will be remediated as part of the ditch excavation work discussed in Section 4.2.8.3.

Small equipment that requires on-site cleaning during the site investigation will be cleaned using a triple wash system. The equipment will be first washed in a water solution containing Liquinox® cleaner, followed by two distilled water rinses.

Upon completion of excavation activities, the excavation pit will be backfilled with clean material and compacted.

4.2.8.3 *Ditch Excavation*

Soil sampling activities have indicated the presence of dioxins in shallow soils in the eastern and western drainage ditches. Remediation of these areas will consist of the shallow excavation of soil in the eastern and western drainage ditches. The current California Human Health Screening Levels (CHHSLs) for Dioxin (2,3,7,8-TCDD) at commercial/industrial facilities is 19 picograms per gram (pg/g). In a draft memo dated January 2009, the DTSC recommends Dioxin TEQ soil remediation goals that range from 200 pg/g to 1,000 pg/g for commercial/industrial sites in California. Soil samples collected during the July 2007 site inspection and analyzed by CUE VI for dioxins had concentrations that ranged from 140 pg/g to 212 pg/g. These concentrations are near the CHHSL for 2,3,7,8-TCDD TEQ and within, or below the soil remediation goal suggested by the DTSC in the 01/2009 memo. The dioxin results from the soil samples analyzed by HB were also within the soil remediation goals suggested by the DTSC in the 01/2009 memo.

As a measure to protect the environment, CUE VI has opted to conduct focused excavation of dioxin-affected soils. Excavation will focus on shallow soils within the eastern and western drainage ditches in the areas shown in Figure 7. An approximate 6-inch layer within each ditch will be scraped off and stockpiled.

The stockpiled soil will be sampled to assess the proper disposal of the soil. One composite soil sample of stockpiled soil will be collected for submittal to an analytical laboratory for chemical analysis. The soil stockpile will be sampled at the sample interval required by the facility that accepts the material. Each soil sample will be analyzed for Dioxins and Furans in accordance with EPA Method No. 8290.

Dioxins in soil are considered insoluble and are therefore very stable. They do not mobilize and are only transported when the sediment on which they are adhered to migrates. This has resulted in the acceptance of the use of a cover material to hold dioxin-affected soils in place as a remediation option. As an additional measure, CUE VI proposes to cover the area with clean cover material as discussed in Section 4.2.10.

4.2.9 *Wetlands Restoration Area/Clark Slough Remediation*

Historic information indicates that portions of the site were once marsh wetlands that were filled in, primarily with bay dredge spoils, and subsequently developed. This area includes the southwest corner of the property on both sides of Clark Slough. The wetlands/Clark Slough Remediation area is shown on Figure 8. During the development of this area, the Channel for Clark Slough that runs through the site was fortified with concrete rip-rap. Ongoing development and use of this area has resulted in impacts to shallow soil and to Clark Slough. Current plans for the site include the restoration of some of the filled-in areas to their former wetlands state. The impacted areas would be remediated as part of the restoration process. The remediation of the wetlands restoration area (including Clark Slough) is proposed to be accomplished by excavating existing fill material to return the area to the original wetlands condition. During the excavation process, excavated soils will be field screened using an OVA for the presence of petroleum-related compounds, and will be visually inspected for the presence of visible contamination. Any soils identified as potentially contaminated will be segregated and temporarily stored on plastic and covered with plastic for laboratory testing. The stockpiled soil samples will be submitted to an analytical laboratory and analyzed for:

- TPHG, BTEX, and MTBE in general accordance with EPA Method No. 5030/8021, and
- Total Petroleum Hydrocarbons (TPH) as Diesel and TPH Motor oil in accordance with EPA Method 8015.

Additional analysis may be requested based on field observations.

The soil stockpile analytical results will be used to assess the proper final use or disposal method for the stockpiled soil.

Excavated soil that has not been identified as potentially contaminated by the field screening methods will be used as fill material within the proposed grading area discussed in Section 4.2.10.

Some of the wetlands restoration work is proposed to be conducted in the area of the former L&M Renner cardlock facility where petroleum-impacted soil was previously found. The site received regulatory closure from the RWQCB, however, petroleum-impacted soil remains. During the excavation process, excavated soils will be field screened using an OVA for the presence of petroleum-related compounds, and will be visually inspected for the presence of staining typical of petroleum contamination. Any soil identified as potentially contaminated will be segregated and temporarily stored on plastic and covered with plastic for laboratory testing. The stockpiled soil samples will be submitted to an analytical laboratory and analyzed for:

- TPHG, Benzene, BTEX, and MTBE in general accordance with EPA Method No. 5030/8021.
- Total Petroleum Hydrocarbons (TPH) as Diesel and TPH Motor oil in accordance with EPA Method 8015.

The laboratory analytical results will be used to assess the proper disposal method for this soil. If warranted, the soil will be transported offsite to a facility licensed to accept such material.

Sediment sampling conducted in Clark Slough indicated the presence of shallow sediments impacted with dioxins in the western portion of the site where the western ditch discharges into Clark Slough. This is an area of Clark Slough where the slough widens and sediment tends to collect. Given the upstream area that feeds Clark Slough, the potential for contamination exists. Shallow sediment that has accumulated in this area will be excavated and screened in the field using an OVA for the presence of petroleum-related compounds, and will be visually inspected for the presence of visible contamination. Any soil identified as potentially contaminated by petroleum hydrocarbons will be segregated and temporarily stored on plastic and covered with plastic for laboratory testing. The stockpiled soil samples will be submitted to an analytical laboratory and analyzed for:

- TPHG, Benzene, BTEX, and MTBE in general accordance with EPA Method No. 5030/8021.
- TPH as Diesel and TPH Motor oil in accordance with EPA Method 8015.

Additional analysis may be requested based on field observations.

One composite soil sample of the stockpiled soil will be collected for submittal to an analytical laboratory and will be analyzed for Dioxins and Furans in accordance with EPA Method No. 8290. The laboratory analytical results will be used to assess the final disposition of this material.

In addition to the excavation of potentially impacted shallow sediments, debris that has accumulated within Clark Slough within the wetlands/Clark Slough Remediation area will be removed. Concrete rip-rap that has been placed along the banks of Clark Slough in this area will be removed. Portions of Clark Slough within the remediation area that are not excavated will be scraped to remove unwanted debris. The proposed excavation/scrape area within Clark Slough is outlined in Figure 4.

A qualified contractor will be used to conduct the work and to develop the task-specific steps that will be taken to complete this work.

4.2.10 *Site Grading*

The current layout of the site results in storm water runoff that discharges into Clark Slough and the run-on of storm water from adjoining properties. The goal of the proposed grading plan is to alter the flow of storm water on the site to promote natural infiltration of storm water and reduce or eliminate storm water from leaving the site. This action will also place a cover that will provide additional protection to human health and the environment through the elimination of potential exposure pathways. The site grading plan will be developed and implemented in accordance with City of Eureka requirements. The approximate area proposed for grading is shown in Figure 9.

S-18

4.2.10.1 *Pre-Grading Site Topography Evaluation*

As part of the grading plan preparation, existing site topographic information will be evaluated for use in developing the grading plan. If based on the evaluation it is determined that additional information is needed. Then steps will be taken to fill the data gaps.

4.2.10.2 *Grading Plan Preparation*

Once all of the necessary information has been acquired, a grading plan will be prepared for submittal to the City of Eureka. In preparing the grading plan, it is planned to meet with the City of Eureka for a grading plan scoping meeting to discuss the grading plan submittal and intent of the grading plan. This meeting will be used to identify any potential issues, and develop a plan to resolve the identified issues. A final grading plan will be submitted to the City of Eureka for comment and approval. During the permit acquisition process, any comments from the City of Eureka will be addressed. Other required permits will also be obtained, including the US Army Corps of Engineers. CUE VI will work closely with all agencies to ensure that all issues are addressed and proper permits are obtained.

4.2.11 *Site Grading Implementation*

Upon receipt of the all necessary permits, the grading plan will be implemented. Care will be taken during the grading operation to conform with all requirements (such as dust control) and minimize disturbance of the surrounding area.

4.2.12 *Site Cover Placement*

As part of the site grading work, cover material will be imported and placed over the site to provide additional storm water infiltration capacity at the site and eliminate potential pathways between the existing site soils and potential human and environmental receptors. It is proposed to use a material that has high infiltration capacity to promote the infiltration of storm water. Additionally, the cover material may be needed to augment the grading process. Due to the current topography of the site, it may be necessary to use imported material to meet the grading specifications outlined in the grading plan. Although the final thickness of the cover material will be dictated by the grading plan specifications, it is anticipated that a cover of approximately two feet thick will be placed over the site. The imported material will not be compacted to further enhance the infiltration capability. If appropriate, impermeable materials may be used to capture and detain stormwater to be directed into the municipal stormwater system.

4.3 *IRAP REPORT OF FINDINGS PREPARATION*

Upon completion of all interim remedial action activities, a report of findings will be submitted to the RWQCB. The report will detail the activities undertaken, and provide an assessment of the interim remedial action.

4.4 *FUTURE ACTIVITIES*

Final site remediation will be addressed prior to the development of the site.

References

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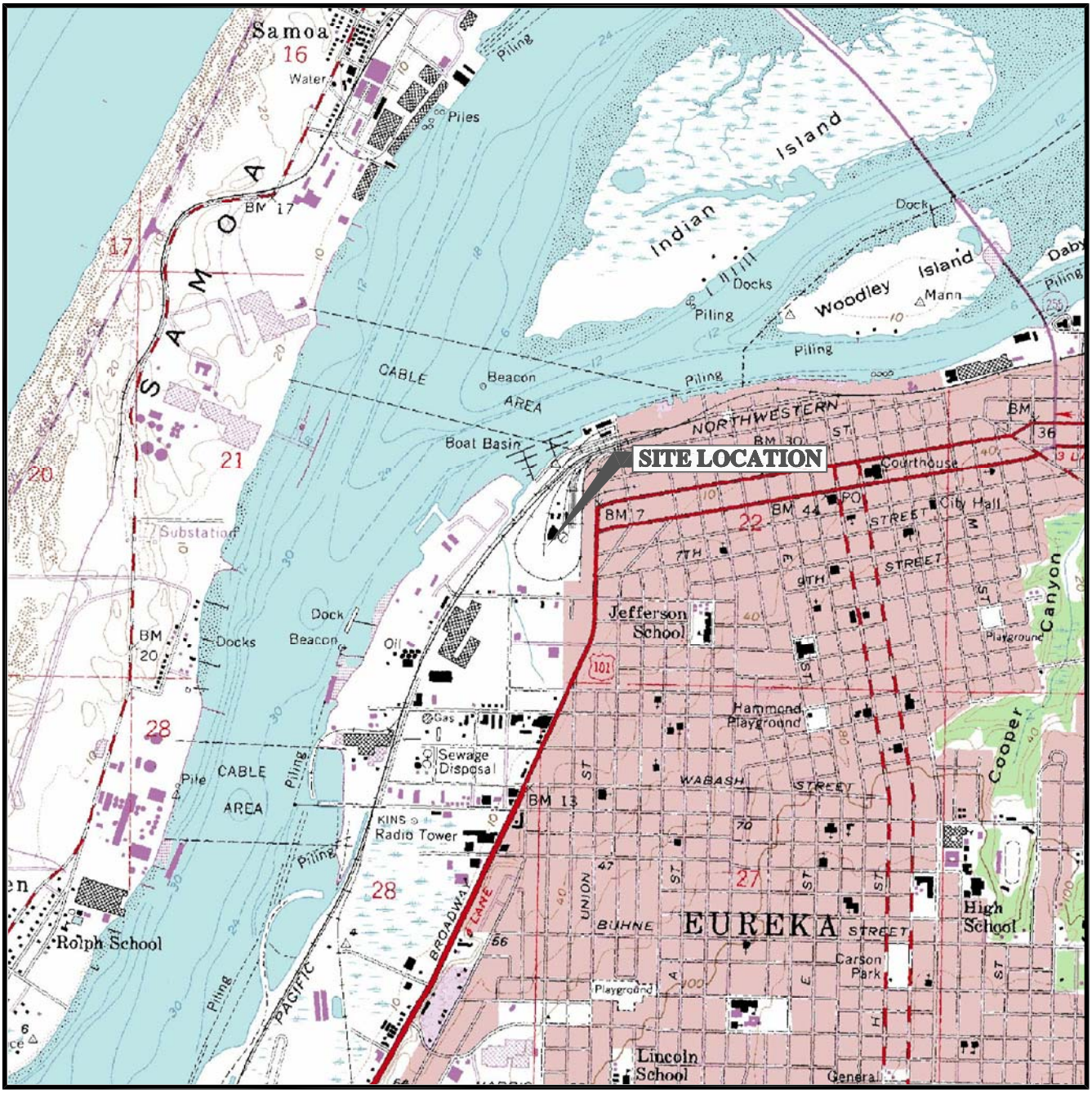
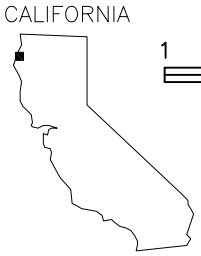
Figures



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE: EUREKA, CALIFORNIA – 1958.



QUADRANGLE LOCATION

SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 10 FEET

DOTTED LINES REPRESENT 5–FOOT CONTOURS

NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

ERM **Environmental Resources Management**

SITE LOCATION MAP

FORMER EUREKA RAILROAD YARD

EUREKA, CALIFORNIA

FIGURE **1**

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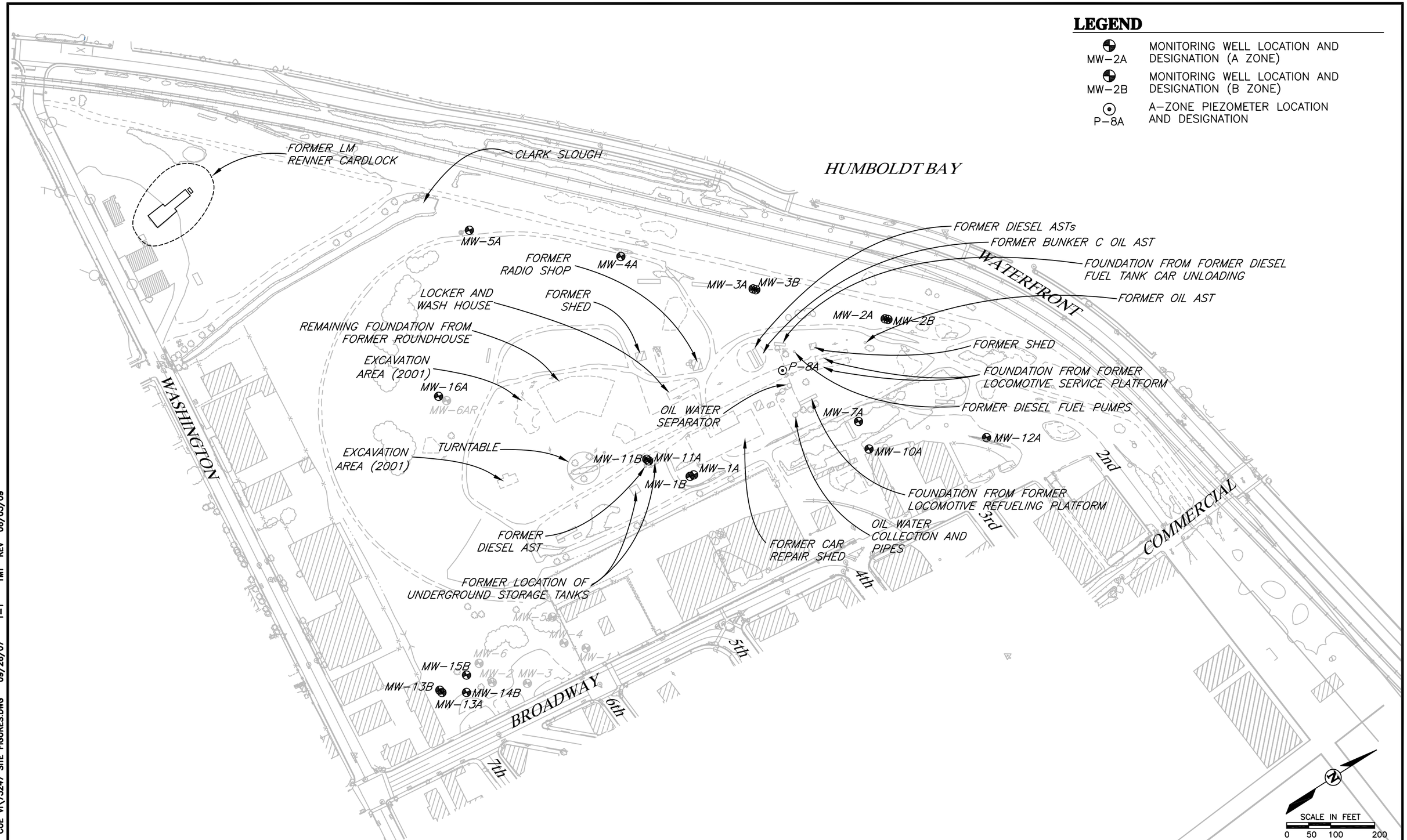


NOTE:
BASE MAP ADAPTED FROM AERIAL PHOTOGRAPH TAKEN ON SEPTEMBER 21, 1995 BY RICHARD B. DAVIS COMPANY, INC., OF SMITH RIVER, CALIFORNIA

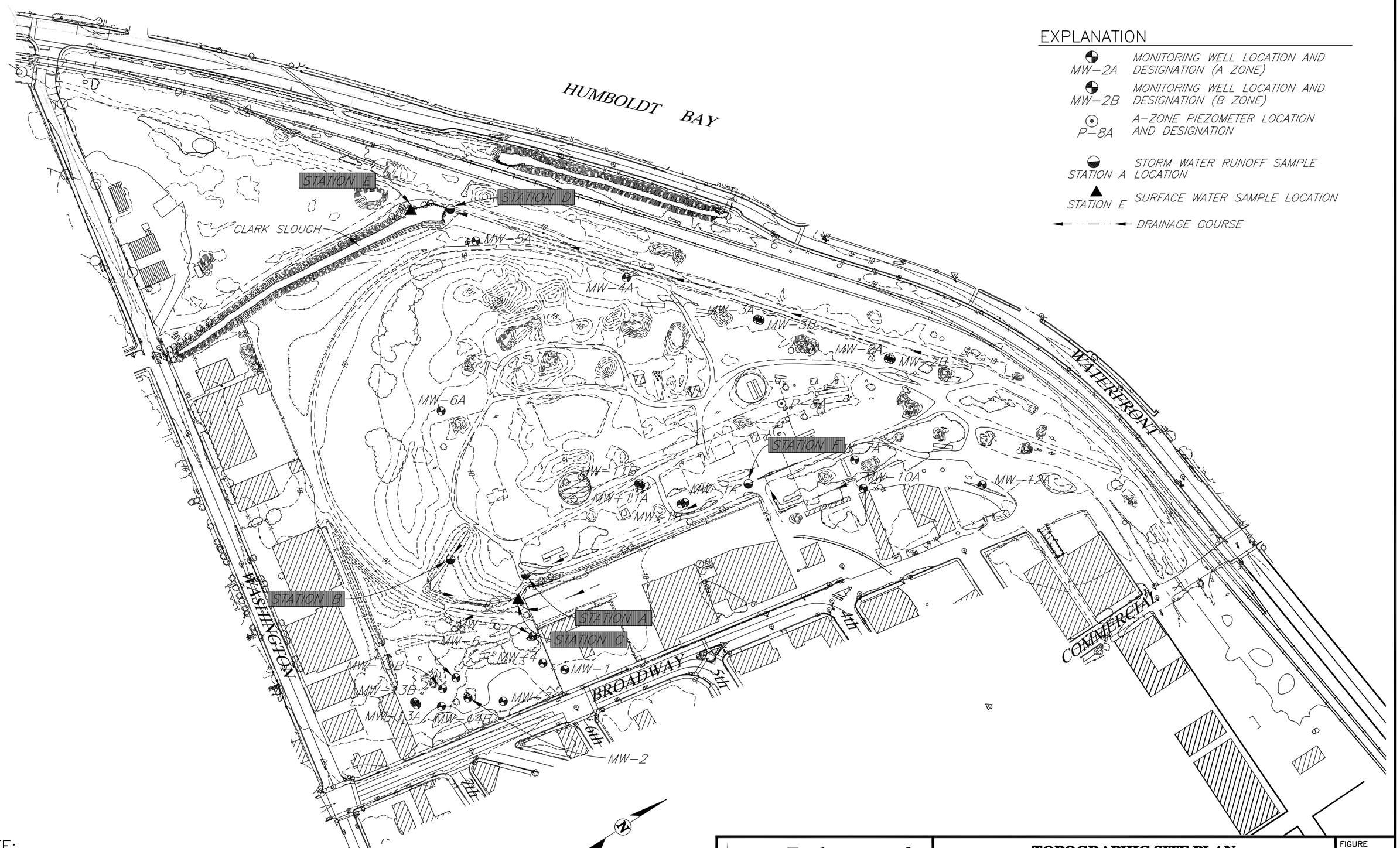
ERM Environmental Resources Management

SITE PLAN
FORMER EUREKA RAILROAD YARD
EUREKA, CALIFORNIA

FIGURE **2**

S-22

K:\PROJECTS\73247 CUE VI\73247 SITE FIGURES.DWG 09/26/07 1=1 YMT REV 06/05/09



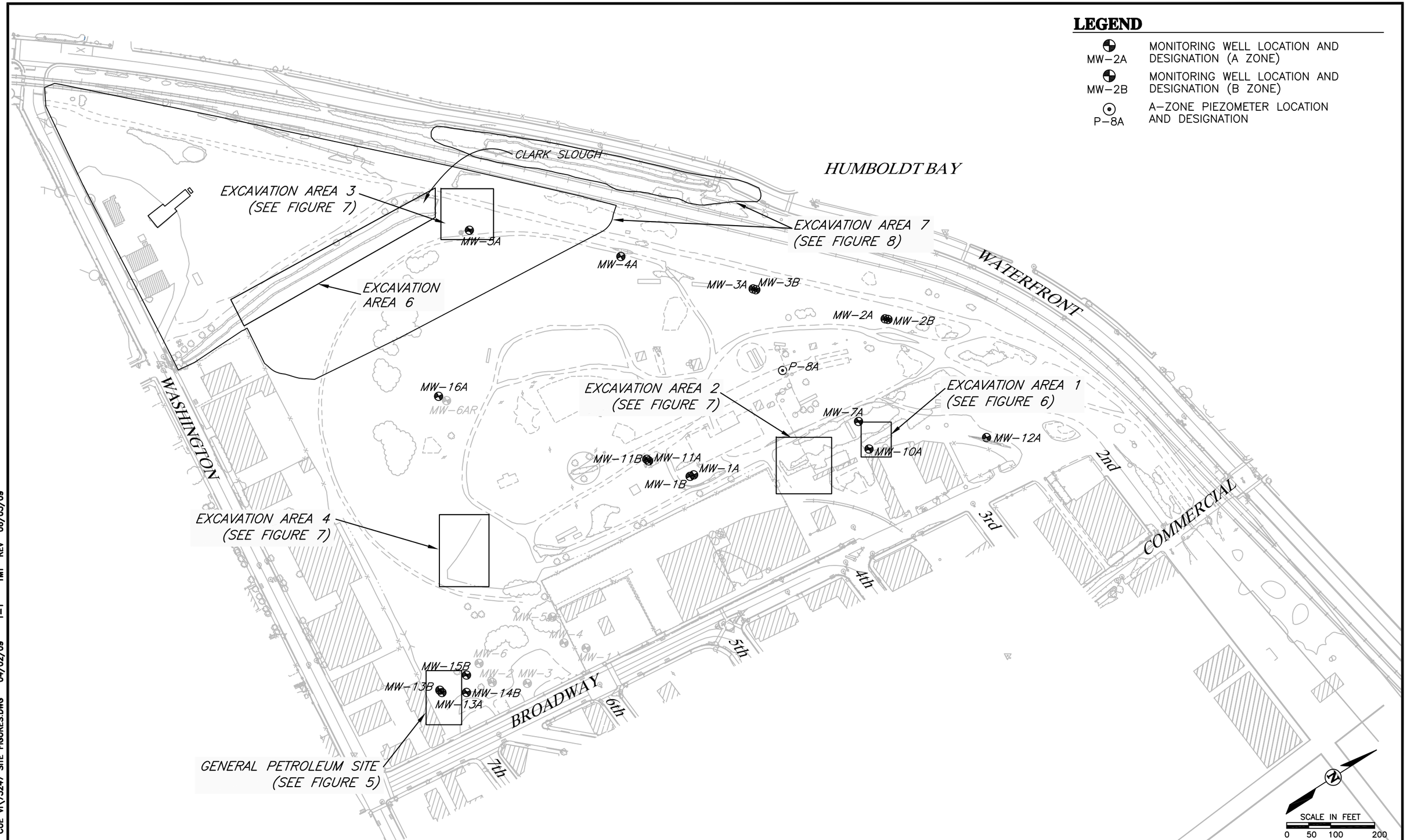
NOTE:
BASE MAP ADAPTED FROM AERIAL PHOTOGRAPH TAKEN ON SEPTEMBER 21, 1995 BY RICHARD B. DAVIS COMPANY, INC., OF SMITH RIVER, CALIFORNIA

ERM Environmental Resources Management

TOPOGRAPHIC SITE PLAN
FORMER EUREKA RAILROAD YARD
EUREKA, CALIFORNIA

FIGURE **3**

PROJECTS\73247 CUE V\73247 TOPO SITE PLAN.DWG 04/28/09 1=1 YMT REV 02-0



NOTE:
BASE MAP ADAPTED FROM AERIAL PHOTOGRAPH TAKEN ON SEPTEMBER 21, 1995 BY RICHARD B. DAVIS COMPANY, INC., OF SMITH RIVER, CALIFORNIA

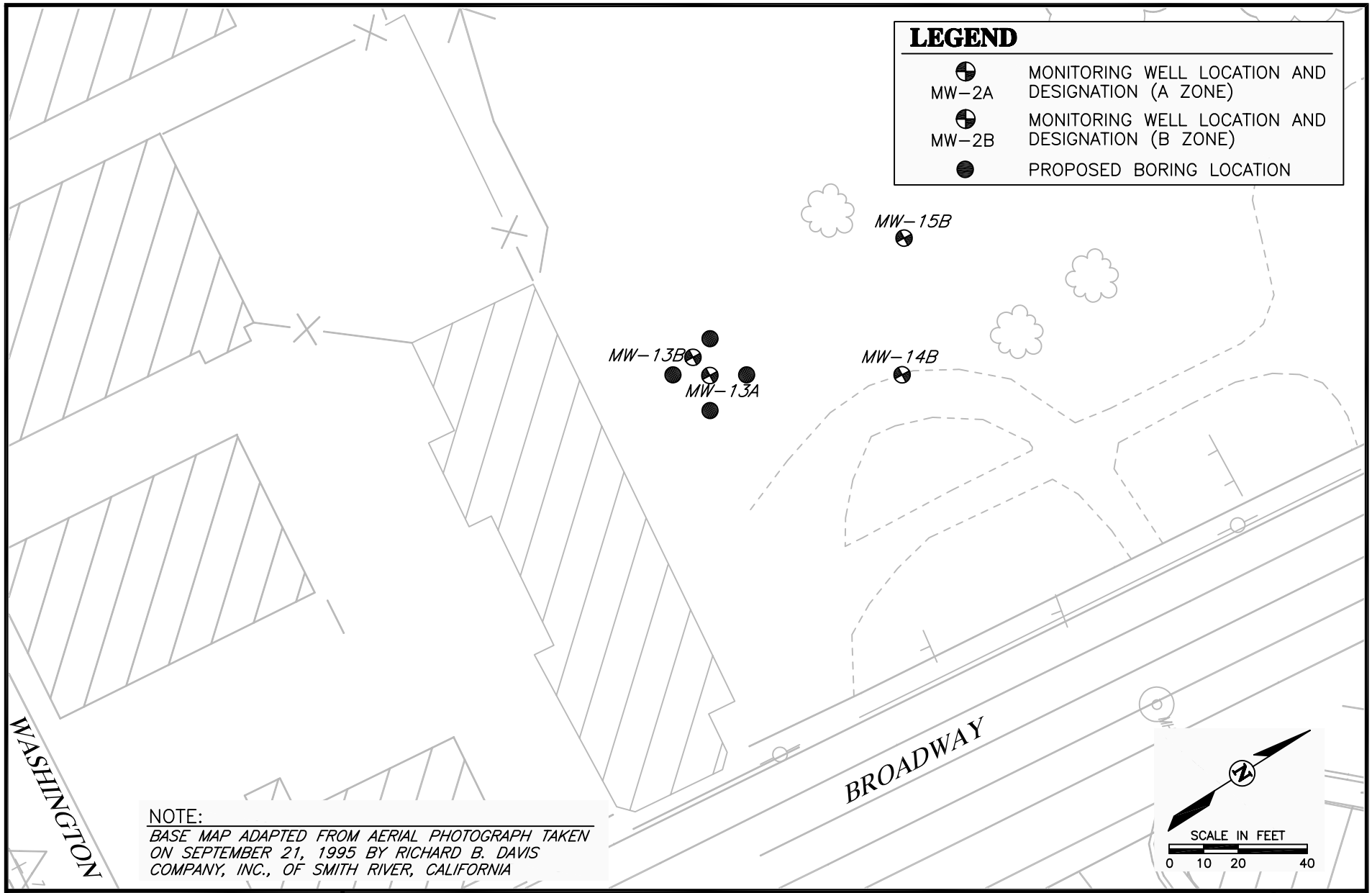
ERM Environmental Resources Management

PROPOSED EXCAVATION AREAS
FORMER EUREKA RAILROAD YARD
EUREKA, CALIFORNIA

FIGURE 4

S-24

K:\PROJECTS\73247 CUE VI\73247 SITE FIGURES.DWG 04/02/09 1=1 YMT REV 06/05/09



Environmental Resources Management

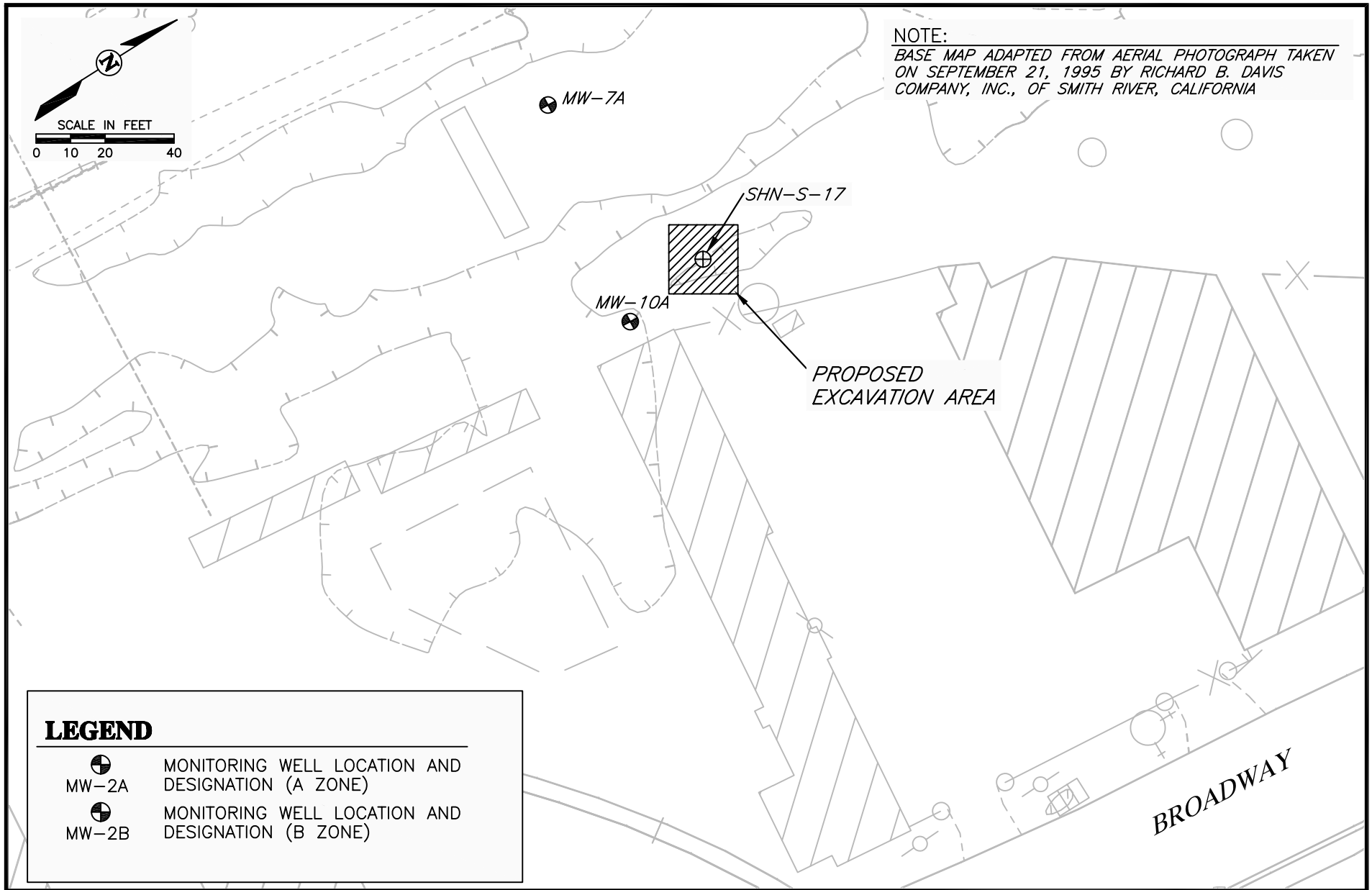
GENERAL PETROLEUM SITE REMEDIATION AREA

FORMER EUREKA RAILROAD YARD

EUREKA, CALIFORNIA

FIGURE 5

K:\PROJECTS\73247 CUE VI\73247 SITE FIGURES.DWG 04/03/09 1=1 YMT REV



Environmental Resources Management

METALS-IMPACTED SOIL REMEDIATION AREA

FORMER EUREKA RAILROAD YARD

EUREKA, CALIFORNIA

FIGURE **6**

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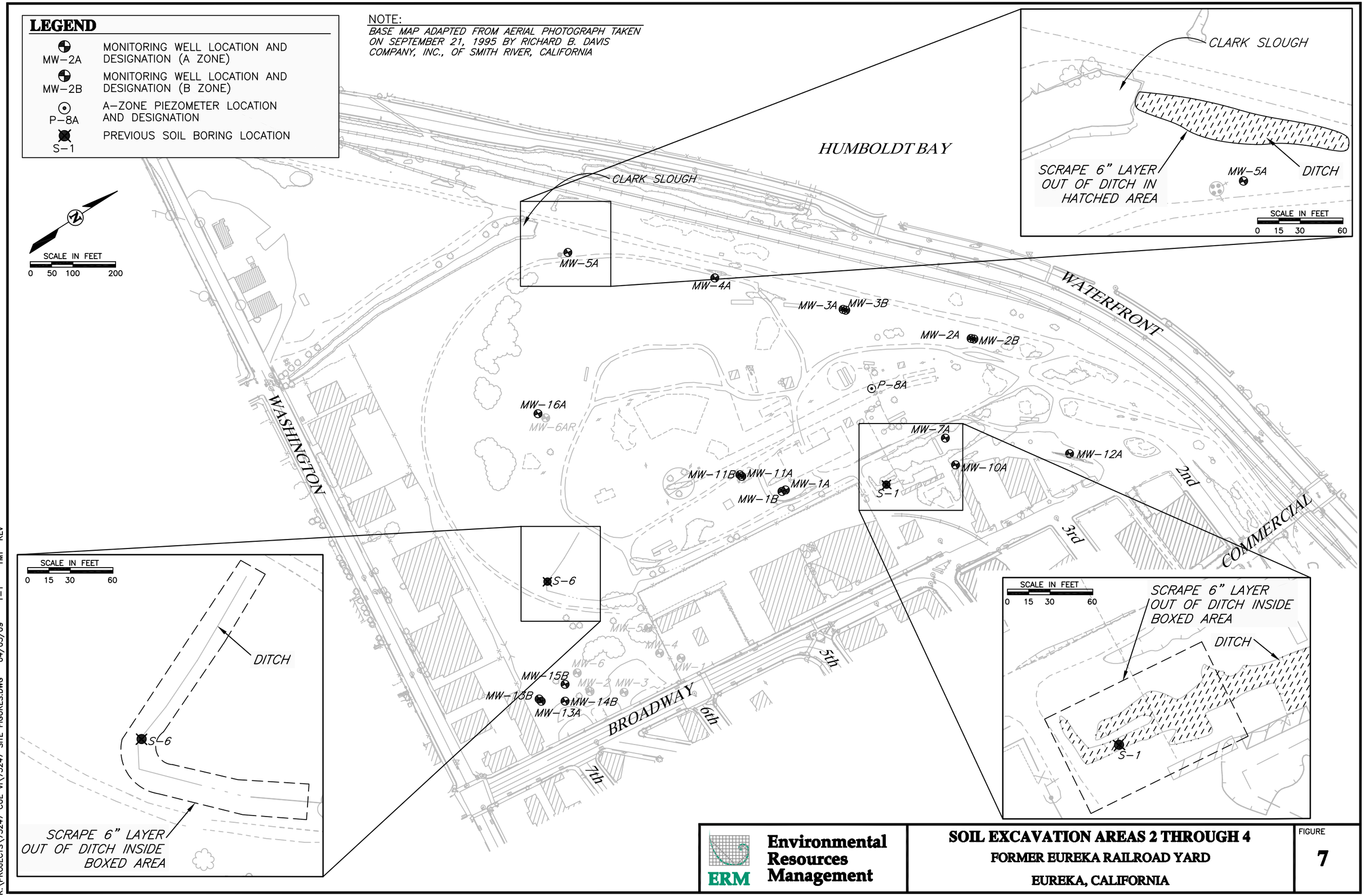

Environmental Resources Management

SOIL EXCAVATION AREAS 2 THROUGH 4

FORMER EUREKA RAILROAD YARD

EUREKA, CALIFORNIA

FIGURE 7

S-27

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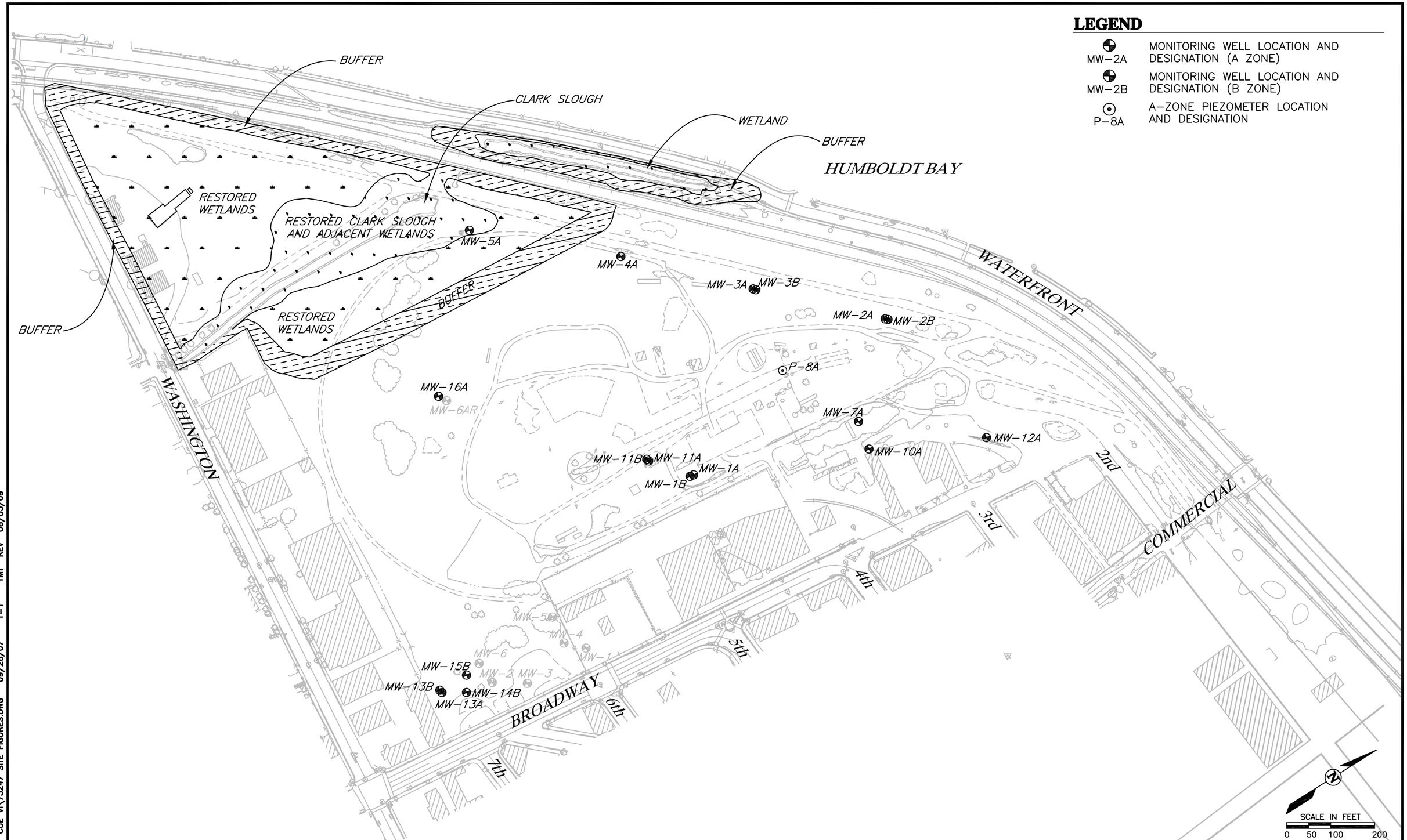


NOTE:
BASE MAP ADAPTED FROM AERIAL PHOTOGRAPH TAKEN ON SEPTEMBER 21, 1995 BY RICHARD B. DAVIS COMPANY, INC., OF SMITH RIVER, CALIFORNIA

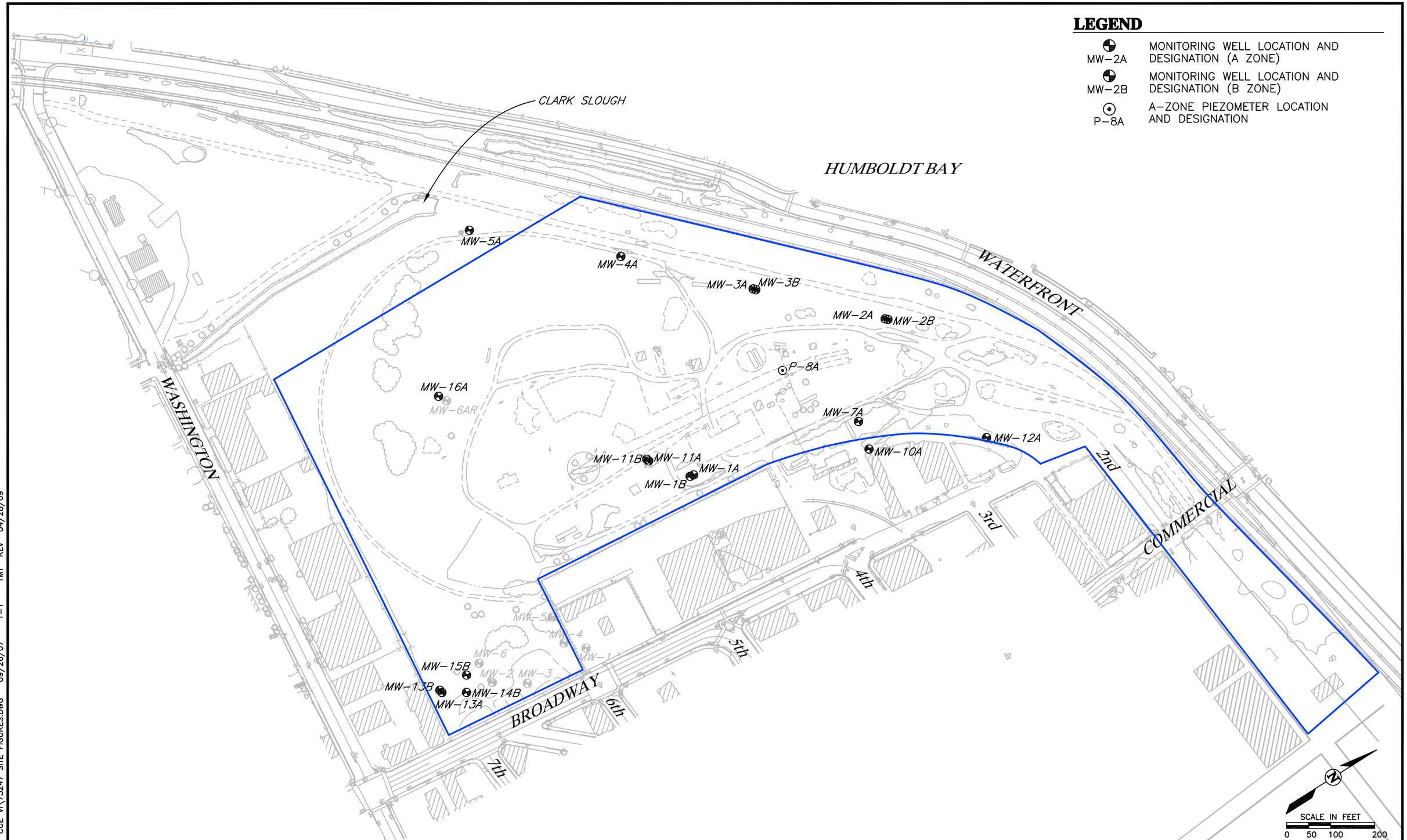
ERM Environmental Resources Management

PROPOSED WETLANDS RESTORATION AREA
FORMER EUREKA RAILROAD YARD
EUREKA, CALIFORNIA

FIGURE **8**

K:\PROJECTS\73247 CUE VI\73247 SITE FIGURES.DWG 09/26/07 1=1 YMT REV 06/05/09

S-28



NOTE:
BASE MAP ADAPTED FROM AERIAL PHOTOGRAPH TAKEN ON SEPTEMBER 21, 1995 BY RICHARD B. DAVIS COMPANY, INC., OF SMITH RIVER, CALIFORNIA

ERM Environmental Resources Management

APPROXIMATE EXTENT OF FILL AREA
FORMER EUREKA RAILROAD YARD
EUREKA, CALIFORNIA

FIGURE 9

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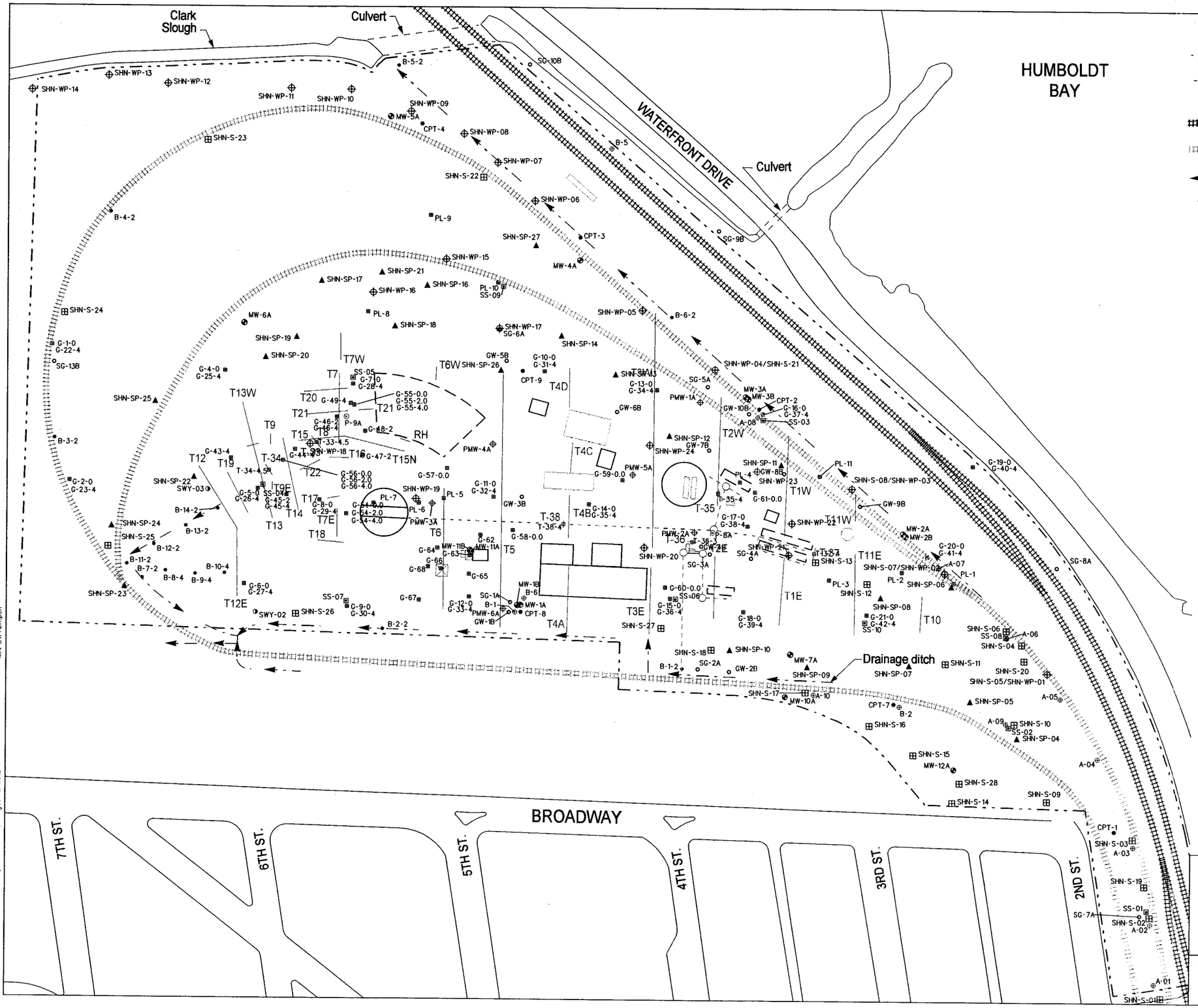
Appendices

Appendix A
Historic Sample Location Figures



EXPLANATION

- Site boundary
- Former subsurface oil-water collection system
- Railroad tracks (active)
- Former railroad tracks
- Drainage ditch
- T10 — Exploratory trench
- Existing site structure
- Existing foundation
- Former site features
- MW-3A — Monitoring well
- P-8A — A-zone piezometer
- B-2 — Soil boring sample
- CPT-1 — CPT sounding
- G-38-4 — Soil sample / soil boring
- B-2-2 — Hand auger soil boring sample
- SWY-02 — Storm water runoff sample
- GW-2B, SG-8A — Grab groundwater samples
- PMW-2A — Pace temporary well (destroyed 1989)
- SHN-S-11 — SHN surface soil sample
- SHN-WP-22 — SHN soil and/or water sample
- SHN-SP-05 — SHN soil stockpile sample
- SS-1 — Soil sample and grab groundwater sample location, September 2001

NOTES:

1. Base map adapted from aerial photograph taken on 21 September 1995 by Richard B. Davis Company, Inc., of Smith River, California.
2. Only two former railroad tracks are shown for illustrative purposes.

0 150
SCALE IN FEET

SAMPLE LOCATIONS
Former Railroad Yard
Eureka, California

GEOMATRIX

Project No.	Figure
1480.007 D	6

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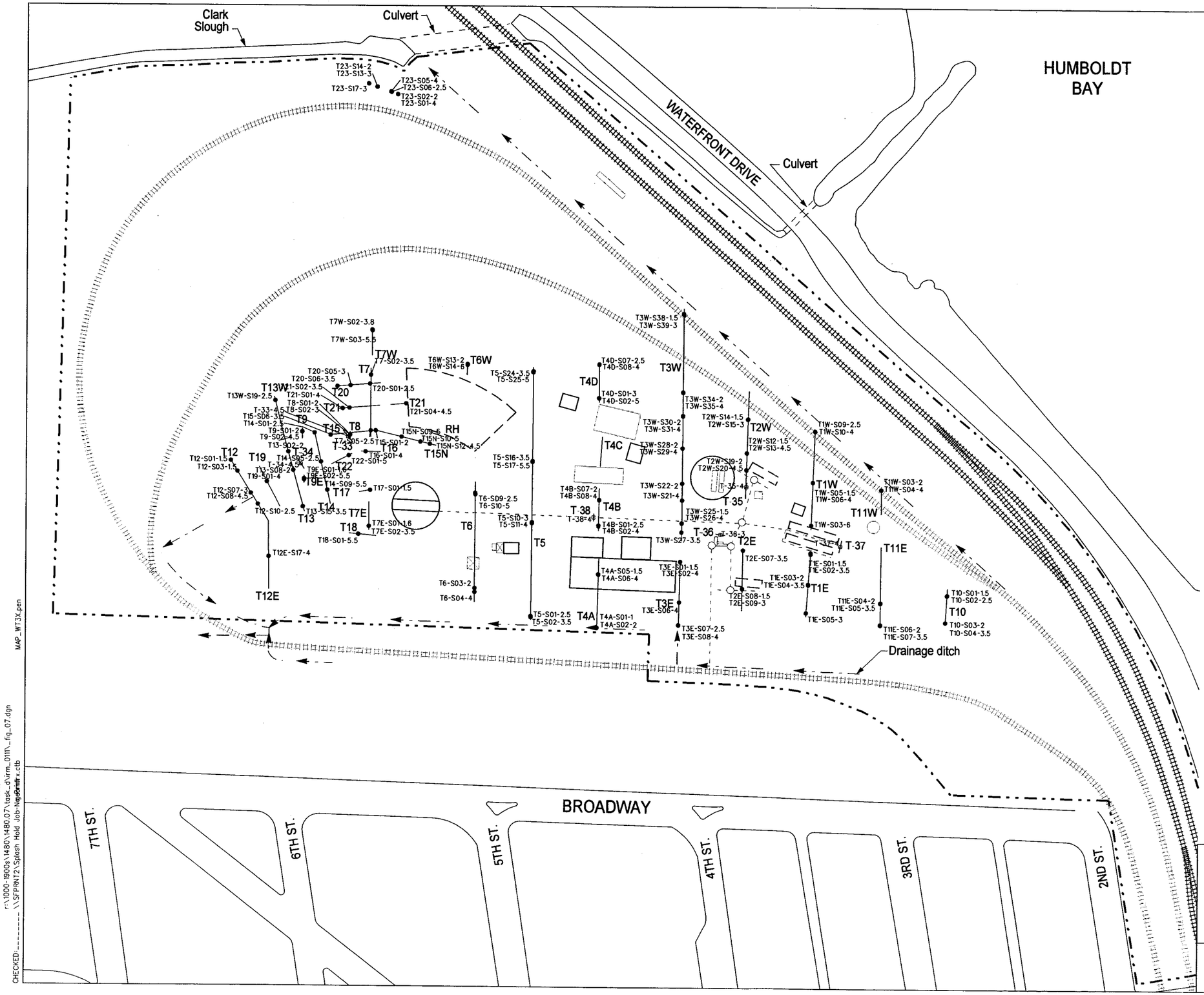

EXPLANATION

- Site boundary
- Former subsurface oil-water collection system
- Railroad tracks (active)
- Former railroad tracks
- Drainage ditch
- Existing site structure
- Existing foundation
- Former site features
- MW-4A Monitoring well
- P-8A A-zone piezometer
- T16 Exploratory trench
- T2W-S12-1.5 Trench soil sample

NOTES:

1. Base map adapted from aerial photograph taken on 21 September 1995 by Richard B. Davis Company, Inc., of Smith River, California.
2. Only two former railroad tracks are shown for illustrative purposes.

0 150
SCALE IN FEET

TRENCH SAMPLE LOCATIONS
Former Railroad Yard
Eureka, California

GEOMATRIX

Project No.	Figure
1480.007 D	7

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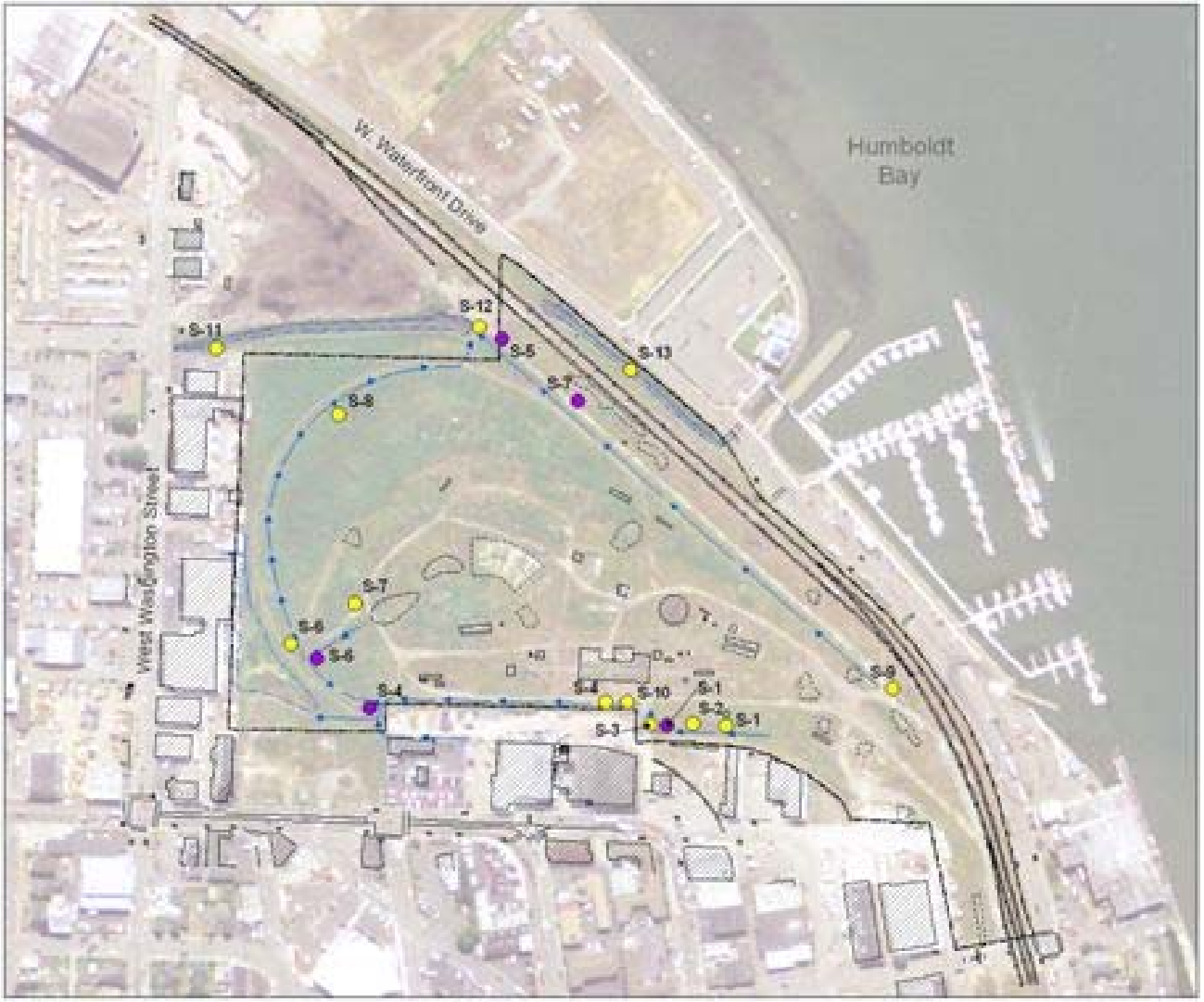


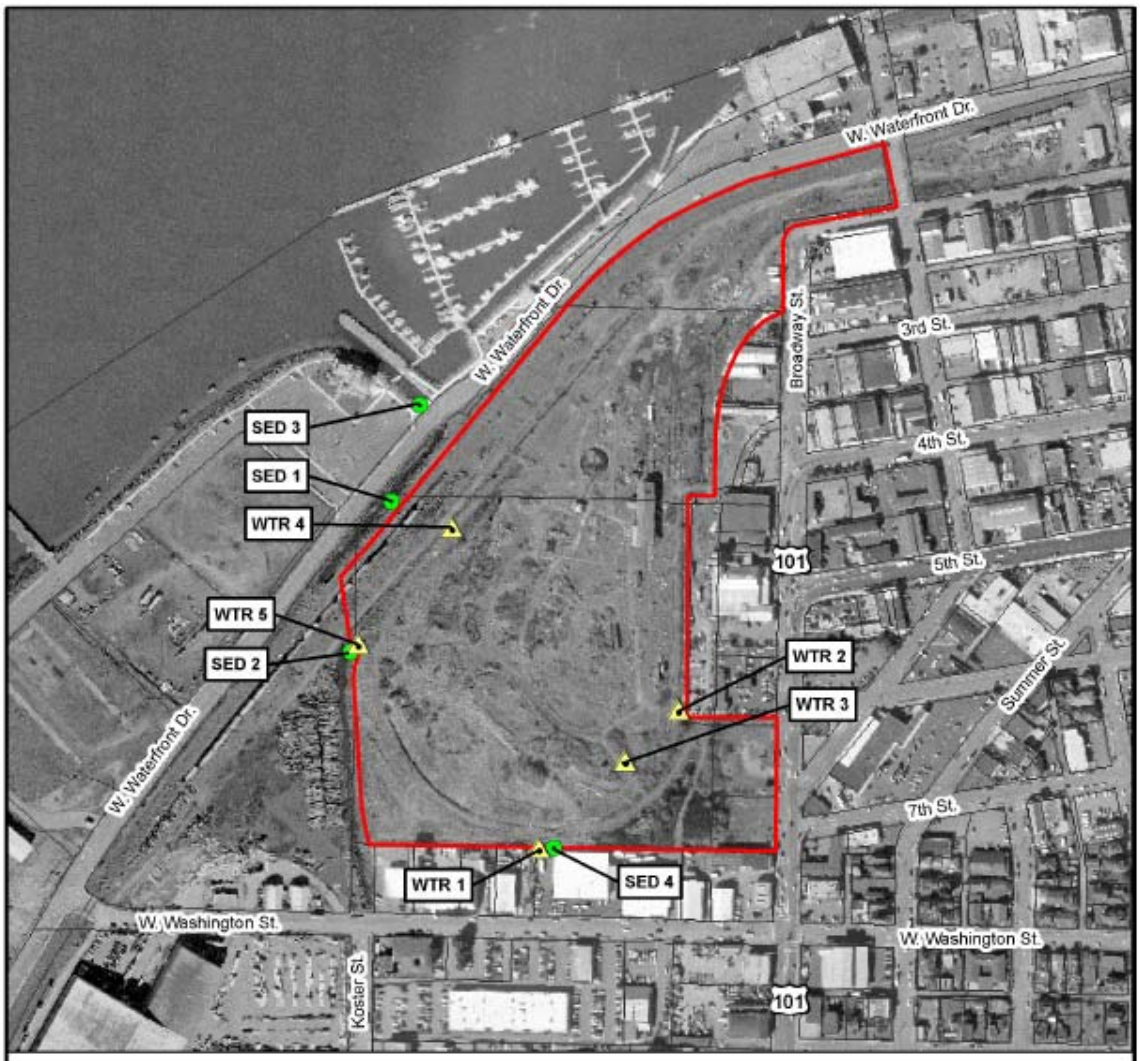
Legend

- Sediment Samples - 7/12/2000
- Sediment Samples - 7/30/2007
- Drainage Ditch

Sediment Sample
Collection Locations
Union Pacific Balloon Track
Eureka, California

Figure 8

CEA No. 07040



Legend

- Locations of Sediment Samples Collected on 1/10/08
- Locations of Surface Water Samples Collected on 1/10/08
- Property Line / Site Boundary

0 225 450 900 Feet

Notes:
1. All locations are approximate.
2. Aerial photographic base obtained from City of Eureka GIS Website 2008.

Project: Former Southern Pacific Transportation Company Railroad Yard - 736 Broadway, Eureka, California		
Title: Locations of Sediment and Surface Water Samples Collected on 1/10/2008		
Drawn By: RK	Date: 1/18/2008	Figure No.: 2

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

Legend

Locations of Soil/Sediment Samples Collected on 7/30/2007

Property Line / Site Boundary

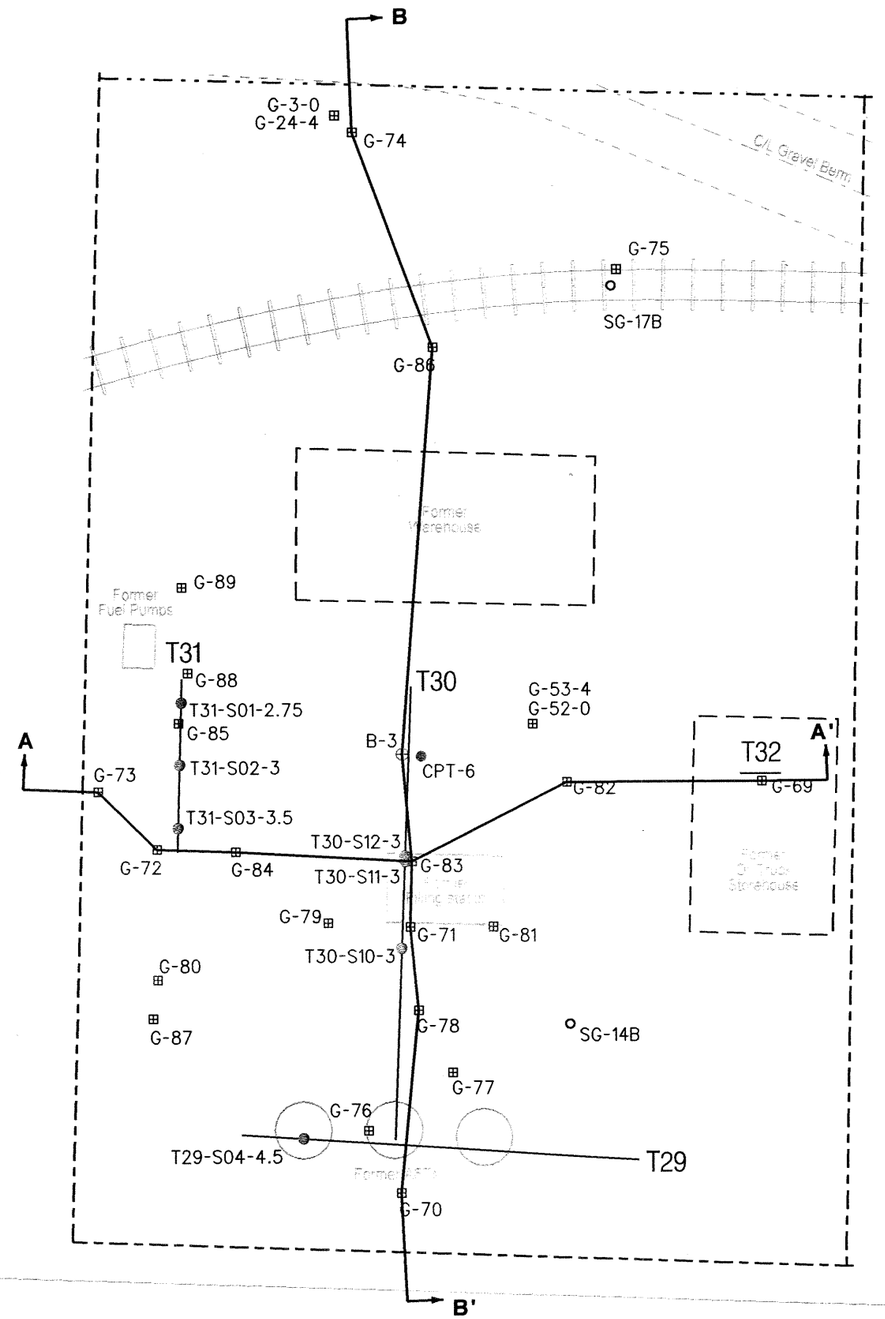
N

0 210 420 840 Feet

Notes:
1. All locations are approximate.
2. Aerial photographic base obtained from City of Eureka GIS Website 2008.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

Project: Former Southern Pacific Transportation Company Railroad Yard - 736 Broadway, Eureka, California		
Title: Locations of Soil/Sediment Samples Collected on 7/30/2007		
Drawn By: RK	Date: 1/22/2008	Figure No.: 2



EXPLANATION

- Site boundary
- Existing foundation
- Former site features
- B-3 ⊕ Soil boring sample
- CPT-6 ● CPT sounding
- T31-S01-2.75 ● Trench soil sample
- G-53-4 ⊞ Soil boring (with possible soil and/or grab groundwater samples)
- SG-17B ○ Grab groundwater samples
- T31 — Exploratory trench
- B — B' Location of geologic cross-section

NOTES:

1. Base map adapted from aerial photograph taken on 21 September 1995 by Richard B. Davis Company, Inc., of Smith River, California.
2. Only two former railroad tracks are shown for illustrative purposes.

0 30

SCALE IN FEET

SITE PLAN
Former General Petroleum Company
Eureka, California

GEOMATRIX

Project No.	Figure
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S-37

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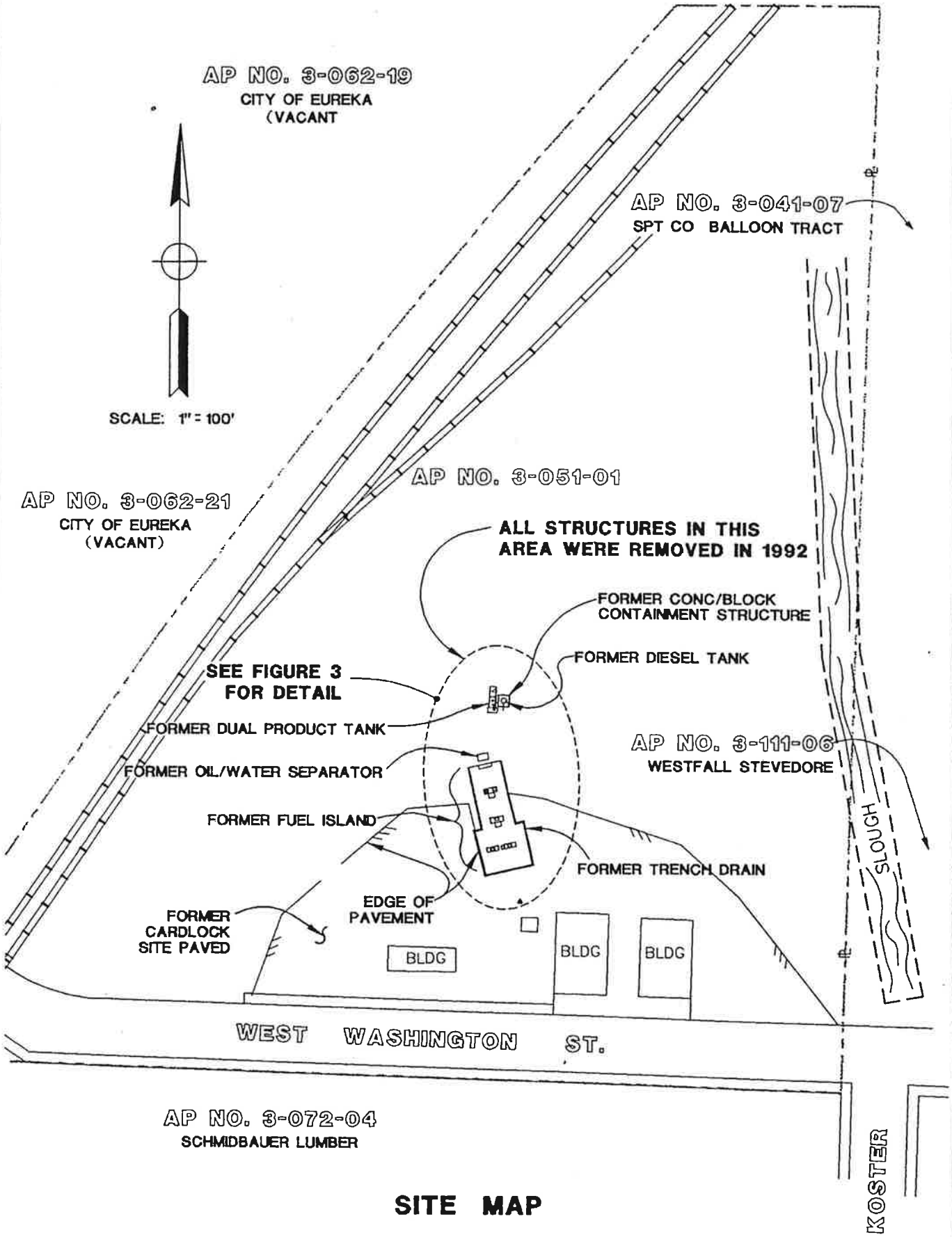

SITE MAP

FIGURE 2

WINZLER & KELLY

96145701\041\457a-f01.dwg date: 02/08/99 @ 10:30 am

Appendix B
Soil Analytical Results for
Petroleum Hydrocarbons

SOIL ANALYTICAL RESULTS FOR PETROLEUM HYDROCARBONS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Sample Date	Depth (feet)	TPHg[1]	TPHd[2]	TPHmo[3]
B-1	9/1/92	2	<0.5[4]	270	---[5]
B-2	9/1/92	2	<0.5	<10	---
B-3	9/1/92	2	<0.5	34	---
B-4	9/1/92	2	<0.5	66	---
B-5	9/1/92	2	<0.5	220	---
B-6	9/1/92	2	<0.5	<10	---
B-7	9/1/92	2	<0.5	120	---
B-8	9/1/92	4	<0.5	31	---
B-9	9/1/92	4	<0.5	<10	---
B-10	9/1/92	4	<0.5	31	---
B-11	9/1/92	2	<0.5	30	---
B-12	9/1/92	2	<0.5	31	---
B-13	9/1/92	2	<0.5	68	---
B-14	9/1/92	2	<0.5	210	---
B-14	9/1/92	4	---	58	---
T12E-S17	9/2/92	4	<0.5	<10	---
T12-S01	9/2/92	1.5	<0.5	110	---
T12-S03	9/2/92	1.5	<0.5	81	---
T12-S07	9/2/92	3	<0.5	66	---
T12-S08	9/2/92	4.5	<0.5	88	---
T12-S10	9/2/92	2.5	<0.5	<10	---
T13-S02	9/2/92	2	<0.5	<10	---
T13-S08	9/2/92	2	<0.5	2600	---
T13-S15	9/2/92	3.5	<0.5	<10	---
T13W-S19	9/2/92	2.5	<0.5	<10	---
T14-S01	9/2/92	2.5	<0.5	<10	---
T14-S05	9/2/92	2.5	<0.5	98	---
T14-S09	9/2/92	5.5	<0.5	330	---
T15N-S09	9/2/92	5	<0.5	140	---
T15N-S10	9/2/92	5	<0.5	52	---
T15N-S12	9/2/92	4.5	<0.5	33	---
T15-S01	9/2/92	2	<0.5	11000	---
T15-S06	9/2/92	3.5	<0.5	49	---
T16-S01	9/2/92	4	<0.5	50	---
T17-S01	9/2/92	1.5	<50	28000	---
T18-S01	9/2/92	5.5	<0.5	<10	---
T19-S01	9/2/92	4	<50	14000	---
T20-S01	9/2/92	2.5	<0.5	60	---
T20-S05	9/2/92	3	<50	8200	---
T20-S06	9/2/92	3.5	<0.5	<10	---

SOIL ANALYTICAL RESULTS FOR PETROLEUM HYDROCARBONS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Sample Date	Depth (feet)	TPHg[1]	TPHd[2]	TPHmo[3]
T21-S01	9/2/92	4	<0.5	<10	---
T21-S02	9/2/92	3.5	<0.5	520	---
T21-S04	9/2/92	4.5	<0.5	36	---
T22-S01	9/2/92	5	<0.5	33	---
G-51	9/18/95	4	<1	<10	---
G-53	9/18/95	4	<1	<10	---
G-50	9/20/95	0	<1	40	---
G-52	9/20/95	0	<1	110	---
T23-S01	4/29/96	4	<1	<1	---
T23-S02	4/29/96	2	<1	<1	---
T23-S05	4/29/96	4	<1	<1	---
T23-S06	4/29/96	2.5	<1	<1	---
T23-S13	4/29/96	3	<1	<1	---
T23-S14	4/29/96	2	<1	<1	---
T23-S17	4/29/96	3	<1	<1	---
T30-S10	5/1/96	3	3000	<1	---
T30-S11	5/1/96	3	600	130	---
T30-S12	5/1/96	3	<1	<1	---
T31-S01	5/1/96	2.75	8600	1600	---
T31-S02	5/1/96	3	3.2	<5	---
T31-S03	5/1/96	3.5	88	310	---
Samples Collected in 1999					
UST Investigation					
G-62	6/15/99	13	<1	---	<13
G-62	6/15/99	8.5	<1	---	<13
G-63	6/15/99	13	<1	---	<13
G-63	6/15/99	4.5	290	---	<13
G-63	6/15/99	4.5	56	---	---
G-63	6/15/99	13	<1	---	---
G-64	6/15/99	2.5	<1	<1	<13
G-64	6/15/99	13.5	<1	<1	<13
G-65	6/16/99	3	<1	<1	<13
G-65	6/16/99	12.5	<1	<1	<13
G-66	6/16/99	4	<1	<1	<13
G-66	6/16/99	12.5	<1	<1	<13
G-67	6/16/99	11.5	<1	<1	<13
G-67	6/16/99	3	<1	<1	<13
G-68	6/16/99	4	<1	<1	21

SOIL ANALYTICAL RESULTS FOR PETROLEUM HYDROCARBONS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Sample Date	Depth (feet)	TPHg[1]	TPHd[2]	TPHmo[3]
Stockpiles Samples					
SHN-SP-4	8/5/99	0	<1	<2	150
SHN-SP-5	8/5/99	0	<1	<5	350
SHN-SP-6	8/5/99	0	<1	<1	110
SHN-SP-7	8/5/99	0	<1	<1	39
SHN-SP-8	8/5/99	0	<1	<2	130
SHN-SP-9	8/5/99	0	<1	<1	84
SHN-SP-10	8/5/99	0	<1	<1	44
SHN-SP-11	8/5/99	0	<1	<1	120
SHN-SP-12	8/5/99	0	<1	<1	97
SHN-SP-13	8/5/99	0	<1	<1	94
SHN-SP-14	8/5/99	0	<1	<1	74
SHN-SP-15	8/5/99	0	<1	<1	75
SHN-SP-16	8/5/99	0	<1	<1	150
SHN-SP-17	8/5/99	0	<1	3	<13
SHN-SP-18	8/5/99	0	<1	<1	54
SHN-SP-19	8/5/99	0	<1	<2	230
SHN-SP-20	8/5/99	0	<1	<1	42
SHN-SP-21	8/5/99	0	<1	<1	130
SHN-SP-22	8/5/99	0	<1	5.8	54
SHN-SP-23	8/5/99	0	<1	<1	21
SHN-SP-24	8/5/99	0	<1	<1	36
SHN-SP-25	8/5/99	0	<1	<1	19
SHN-SP-26	8/5/99	0	<1	<10	290
SHN-SP-27	8/5/99	0	<1	<1	71
Samples for Leachability Evaluation					
T33	6/28/99	4.5	750	18000	15000
T34	6/28/99	4.5	<1	530	1700
T35	6/28/99	4	450	19000	16000
T36	6/28/99	3	<1	4100	18000
T37	6/28/99	4	360	6400	1200
T38	6/28/99	4	350	3100	<260
SHN Investigation					
SHN-WP-2	8/10/99	14	<1	<1	<13
SHN-WP-2	8/10/99	4	<1	<1	<13
SHN-WP-3	8/10/99	13	<1	<1	<13
SHN-WP-3	8/10/99	4	<1	<1	<13
SHN-WP-4	8/10/99	14	<1	<1	<13
SHN-WP-4	8/10/99	5	<1	<1	<13
SHN-WP-5	8/10/99	5	<1	<1	<13

SOIL ANALYTICAL RESULTS FOR PETROLEUM HYDROCARBONS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Sample Date	Depth (feet)	TPHg[1]	TPHd[2]	TPHmo[3]
SHN-WP-5	8/10/99	14	<1	<1	<13
SHN-WP-6	8/10/99	12	<1	<1	<13
SHN-WP-6	8/10/99	5	<1	<1	<13
SHN-WP-7	8/11/99	12	<1	<1	<13
SHN-WP-7	8/11/99	6	<1	<1	<13
SHN-WP-8	8/11/99	6.5	<1	<1	<13
SHN-WP-8	8/11/99	12	<1	<1	<13
SHN-WP-9	8/11/99	12	<1	<1	<13
SHN-WP-9	8/11/99	4	<1	<1	<13
SHN-WP-10	8/11/99	12	<1	<1	<13
SHN-WP-10	8/11/99	7	<1	<1	<13
SHN-WP-11	8/11/99	12	<1	<1	<13
SHN-WP-11	8/11/99	4	<1	<1	<13
SHN-WP-14	8/11/99	13	<1	<1	<13
SHN-WP-14	8/11/99	4	<1	<1	<13
SHN-WP-12	8/12/99	9	<1	<1	<13
SHN-WP-12	8/12/99	4	<1	<1	<13
SHN-WP-13	8/12/99	4	<1	<1	<13
SHN-WP-13	8/12/99	12	<1	<1	<13
SHN-WP-15	8/12/99	13	<1	<1	<13
SHN-WP-15	8/12/99	6.5	<1	<1	<13
SHN-S-1	8/3/99	1	<1	22	94
SHN-S-2	8/3/99	1	<1	35	180
SHN-S-3	8/3/99	1	<1	9.4	50
SHN-S-4	8/3/99	1	<1	8	40
SHN-S-5	8/3/99	1	<1	<1	56
SHN-S-6	8/3/99	1	<1	28	76
SHN-S-7	8/3/99	1	<1	11	47
SHN-S-8	8/3/99	1	<1	11	33
SHN-S-9	8/3/99	1	<1	10	60
SHN-S-10	8/3/99	1	<1	39	130
SHN-S-11	8/3/99	1	<1	4.7	18
SHN-S-12	8/3/99	1	<1	<1	<13
SHN-S-13	8/3/99	1	<1	240	420
SHN-S-14	8/3/99	1	<1	31	110
SHN-S-15	8/3/99	1	<1	<1	<13
SHN-S-16	8/3/99	1	<1	<1	19
SHN-S-17	8/3/99	1	<1	25	81
SHN-S-18	8/3/99	1	<1	94	150
SHN-WP-16	8/6/99	16	<1	<1	<13

SOIL ANALYTICAL RESULTS FOR PETROLEUM HYDROCARBONS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Sample Date	Depth (feet)	TPHg[1]	TPHd[2]	TPHmo[3]
SHN-WP-16	8/6/99	4	<1	<1	<13
SHN-WP-17	8/6/99	4	<1	<1	<13
SHN-WP-17	8/6/99	14	<1	<1	<13
SHN-S-11	8/9/99	6	<1	<1	<13
SHN-S-17	8/9/99	6	<1	<1	<13
SHN-S-3	8/9/99	6	<1	<1	<13
SHN-WP-1	8/9/99	15.5	<1	<1	<13
SHN-WP-1	8/9/99	4	<1	<1	<13

Notes:

1. Total Petroleum Hydrocarbons (TPH) quantified against a gasoline standard (TPHg) in accordance with modified EPA Method 8015.
2. TPH quantified against a diesel standard (TPHd) in accordance with Modified EPAMethod 8015. All samples collected for TPHd analysis since September 1995 have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
3. TPH quantified against a motor oil standard (TPHmo) in accordance with Modified EPA Method 8015. All samples collected for TPHd analysis since September 1995 have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
4. "<" indicates compound not detected above the laboratory limit shown.
5. --- = not analyzed.

Appendix C
Soil Analytical Results for Polynuclear Aromatic Hydrocarbons

SOIL ANALYTICAL RESULTS FOR POLYNUCLEAR AROMATIC HYDROCARBONS

EPA Method 8310 and 8270[1]

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date Collected	Naphthalene	Acenaph-thylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Dibenz(a,h)-anthracene	Benzo(g,h,i)-perylene	Indeno(1,2,3-c,d)pyrene	2-Methylnaph-thalene
G-1	0	11/13/95	0.064	<0.04[2]	<0.04	<0.02	0.096	<0.02	0.099	0.095	0.056	0.044	0.069	<0.04	0.023	<0.02	0.033	0.024	--[3]
G-2	0	11/13/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	0.058	0.054	0.036	0.037	<0.04	<0.04	0.022	<0.02	0.033	<0.02	---
G-4	0	11/13/95	0.075	0.220	<0.04	<0.02	0.086	<0.02	0.080	0.079	0.029	0.032	0.048	<0.04	<0.02	<0.02	<0.02	0.024	---
G-5	0	11/13/95	<0.1	<0.2	<0.2	<0.1	0.160	<0.1	0.950	0.380	0.130	0.200	<0.2	<0.2	0.150	<0.1	<0.1	<0.1	---
G-6	0	11/13/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	0.031	<0.02	0.023	<0.02	<0.04	<0.04	<0.02	<0.02	0.072	<0.02	---
G-7	0	11/13/95	0.021	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	0.020	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-8	0	11/13/95	<0.02	<0.04	<0.04	<0.02	<0.02	0.040	<0.02	<0.02	0.160	0.150	0.140	<0.04	0.044	<0.02	<0.02	<0.02	---
G-9	0	11/13/95	0.086	0.700	<0.04	<0.02	<0.02	<0.02	0.240	0.220	0.120	0.070	0.120	0.062	0.069	<0.02	0.120	0.075	---
G-10	0	11/13/95	<0.2	1.900	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.290	<0.4	<0.4	<0.2	<0.2	<0.2	<0.2	---
G-11	0	11/13/95	<0.02	0.140	<0.04	<0.02	0.074	<0.02	0.032	0.033	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-12	0	11/13/95	0.066	0.120	<0.04	<0.02	0.110	<0.02	0.150	0.150	0.120	0.033	<0.04	<0.04	0.035	<0.02	<0.02	0.027	---
G-13	0	11/13/95	0.130	<0.04	<0.04	<0.02	0.035	<0.02	0.042	0.042	0.050	0.030	<0.04	<0.04	<0.02	<0.02	0.036	<0.02	---
G-14	0	11/13/95	0.082	0.400	<0.04	<0.02	0.150	<0.02	0.200	0.200	0.150	0.130	0.080	<0.04	0.034	<0.02	0.047	<0.02	---
G-15	0	11/13/95	0.040	<0.04	<0.04	<0.02	0.049	<0.02	0.040	<0.02	0.041	0.022	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-16	0	11/13/95	0.044	0.27	<0.04	<0.02	0.078	<0.02	0.083	0.097	0.037	0.036	0.046	<0.04	0.027	<0.02	0.062	0.033	---
G-17	0	9/21/95	0.160	<0.4	<0.4	<0.2	0.220	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.2	<0.2	---
G-18	0	11/13/95	<0.2	2.000	<0.4	<0.2	0.500	<0.2	<0.2	<0.2	1.400	1.000	<0.4	<0.4	<0.2	<0.2	<0.2	<0.2	---
G-19	0	11/13/95	0.035	0.230	<0.04	<0.02	0.070	<0.02	0.056	0.089	<0.02	0.280	0.100	<0.04	0.037	<0.02	0.230	0.089	---
G-20	0	11/13/95	0.570	<0.2	<0.2	<0.1	0.310	<0.1	0.72	0.300	0.480	0.340	0.250	<0.2	<0.1	<0.1	<0.1	<0.1	---
G-21	0	11/13/95	0.085	0.330	<0.04	<0.02	0.092	<0.02	0.078	0.100	0.130	0.099	0.058	<0.04	<0.02	<0.02	0.048	<0.02	---
G-22	4	9/18/95	0.081	<0.04	<0.04	<0.02	0.045	<0.02	0.200	0.062	0.020	0.031	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-23	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-25	4	9/18/95	0.054	<0.04	<0.04	<0.02	0.035	<0.02	0.120	0.027	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-26	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-27	4	9/18/95	<0.02	<0.04	<0.04	<0.02	0.031	<0.02	<0.02	0.072	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-28	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-29	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	0.026	<0.02	---
G-30	4	9/18/95	<0.02	<0.04	<0.04	<0.02	0.020	<0.02	<0.02	0.043	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-31	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-32	4	9/18/95	<0.02	0.270	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-33	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-34	4	9/18/95	0.073	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-35	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-36	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-37	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-38	4	9/19/95	<1.0	<2.0	<2.0	<1.0	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	---
G-39	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-40	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-41	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
G-42	4	9/18/95	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02	---
Samples Collected in 1999																			
UST Investigation																			
G-62	8.5	6/15/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-62	13.0	6/15/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-63	4.5	6/15/99	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	---
G-63	13.0	6/15/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-64	2.5	6/15/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---

SOIL ANALYTICAL RESULTS FOR POLYNUCLEAR AROMATIC HYDROCARBONS

EPA Method 8310 and 8270[1]

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date Collected	Naphthalene	Acenaph-thylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)-anthracene	Chrysene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(a)-pyrene	Dibenz(a,h)-anthracene	Benzo(g,h,i)-perylene	Indeno(1,2,3-c,d)pyrene	2-Methylnaph-thalene
G-64	13.5	6/15/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-65	3.0	6/16/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-65	12.5	6/16/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-66	4.0	6/16/99	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	---
G-66	12.5	6/16/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-67	3.0	6/16/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-67	11.5	6/16/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
G-68	4.0	6/16/99	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	---
Samples for Leachability Evaluation																			
T-33	4.5	6/28/99	14.8	<4	4.72	10.5	37.2	4.18	<4	8.75	6.32	<4	<4	<4	<4	<4	<4	<4	---
T-34	4.5	6/28/99	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	---
T-35	4.0	6/28/99	11.22	<1	1.42	2.73	9.14	1.45	5.48	1.94	2.22	<1	<1	<1	<1	<1	<1	<1	---
T-36	3.0	6/28/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	---
T-37	4.0	6/28/99	1.53	0.557	1.49	4.52	10	1.43	1.05	1.04	6.477	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	---
T-38	4.0	6/28/99	1.13	1.28	2.74	5.76	10.8	1.01	<1	1.16	<1	<1	<1	<1	<1	<1	<1	<1	---
SHN Investigation																			
SHN-S-03	6	8/9/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SHN-S-05	1	8/3/99	**0.022**	**0.013**	<0.01	<0.01	**0.059**	**0.014**	**0.070**	**0.063**	**0.036**	**0.017**	**0.059**	**0.014**	**0.019**	<0.01	**0.016**	**0.010**	**18.000**
SHN-S-11	6	8/9/99	<0.01	<0.01	<0.01	<0.01	**0.042**	<0.01	<0.01	**0.017**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SHN-S-16	1	8/3/99	**0.085**	**0.037**	**0.009**	**0.008**	**0.220**	<0.01	**0.277**	**0.227**	**0.021**	**0.053**	**0.078**	**0.016**	**0.017**	<0.01	**0.028**	**0.014**	**43.000**
SHN-S-17	6	8/9/99	<0.01	<0.01	<0.01	**0.063**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SHN-WP-03	4	8/10/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
SHN-WP-04	5	8/10/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---
SHN-WP-05	5	8/10/99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	---

Note:

1. Samples collected in 1999 were analyzed using EPA Method 8270 selected ion monitoring (SIM); all other samples were analyzed using EPA Method 8310.
2. "<" indicates compound not detected above the laboratory limit shown.
3. --- = not analyzed

Bold results indicate the analyte was detected.

Appendix D
Soil Analytical Results for
Monochromatic Hydrocarbons

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
B-1	2	9/1/92	<0.005[2]	<0.005	<0.01	<0.005
B-10	4	9/1/92	<0.005	<0.005	<0.01	<0.005
B-11	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-12	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-13	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-14	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-2	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-3	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-4	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-5	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-6	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-7	2	9/1/92	<0.005	<0.005	<0.01	<0.005
B-8	4	9/1/92	<0.005	<0.005	<0.01	<0.005
B-9	4	9/1/92	<0.005	<0.005	<0.01	<0.005
PL-2	1.25	11/16/88	<0.0002	**0.0011**	**0.0009**	<0.0002
PL-5	0.75	11/16/88	<0.0002	**0.003**	**0.0007**	**0.01**
T12-S01	1.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T12-S03	1.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T12-S07	3	9/2/92	<0.005	<0.005	<0.01	<0.005
T12-S08	4.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T12-S10	2.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T12E-S17	4	9/2/92	<0.005	<0.005	<0.01	<0.005
T13-S02	2	9/2/92	<0.005	<0.005	<0.01	<0.005
T13-S08	2	9/2/92	<0.005	<0.005	<0.01	<0.005
T13-S15	3.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T13W-S19	2.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T14-S01	2.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T14-S05	2.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T14-S09	5.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T15-S01	2	9/2/92	<0.005	<0.005	<0.01	<0.005
T15-S06	3.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T15N-S09	5	9/2/92	<0.005	<0.005	<0.01	<0.005
T15N-S10	5	9/2/92	<0.005	<0.005	<0.01	<0.005
T15N-S12	4.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T16-S01	4	9/2/92	<0.005	<0.005	<0.01	<0.005
T17-S01	1.5	9/2/92	<0.2	<0.2	<0.5	<0.2

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
T18-S01	5.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T19-S01	4	9/2/92	<0.2	<0.2	<0.5	<0.2
T1E-S01	1.5	7/31/90	<0.5	<0.5	<0.5	**1.8**
T1E-S02	3.5	7/31/90	<0.05	<0.05	<0.05	<0.1
T1E-S03	2	7/31/90	<0.05	<0.05	<0.05	<0.1
T1E-S04	3.5	7/31/90	<0.05	<0.05	<0.05	<0.1
T1W-S05	1.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T1W-S06	4	8/3/90	<0.05	<0.05	<0.05	<0.1
T20-S01	2.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T20-S05	3	9/2/92	<0.2	<0.2	<0.5	<0.2
T20-S06	3.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T21-S01	4	9/2/92	<0.005	<0.005	<0.01	<0.005
T21-S02	3.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T21-S04	4.5	9/2/92	<0.005	<0.005	<0.01	<0.005
T22-S01	5	9/2/92	<0.005	<0.005	<0.01	<0.005
T23-S01	4	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S02	2	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S05	4	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S06	2.5	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S13	3	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S14	2	4/29/96	<0.005	<0.005	<0.005	<0.005
T23-S17	3	4/29/96	<0.005	<0.005	<0.005	<0.005
T3E-S01	1.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T3E-S02	4	8/3/90	<0.05	<0.05	<0.05	<0.1
T3E-S07	2.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T3E-S08	4	8/3/90	<0.05	<0.05	<0.05	<0.1
T3W-S25	1.5	7/31/90	**1.7**	**3.2**	**8.4**	**21**
T3W-S26	4	7/31/90	<0.05	<0.05	<0.05	<0.1
T3W-S28	2	7/31/90	<0.05	<0.05	**0.095**	**0.26**
T3W-S29	4	7/31/90	<0.05	<0.05	<0.05	<0.1
T5-S01	2.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T5-S02	3.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T5-S10	3	8/3/90	<0.05	<0.05	<0.05	<0.1
T5-S11	4	8/3/90	<0.05	<0.05	<0.05	<0.1
T5-S24	3.5	8/3/90	<0.05	<0.05	<0.05	<0.1
T5-S25	5	8/3/90	<0.05	<0.05	<0.05	<0.1

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
T7-S05	2.5	8/8/90	<0.05	<0.05	<0.05	<0.1
T7E-S01	1.6	8/8/90	<0.05	<0.05	<0.05	<0.1
T7E-S02	3.5	8/8/90	<0.05	<0.05	<0.05	<0.1
T7W-S02	3.8	8/8/90	<0.05	<0.05	<0.05	<0.1
T7W-S03	5.5	8/8/90	<0.05	<0.05	<0.05	<0.1
T8-S01	2	8/8/90	<0.05	<0.05	<0.05	<0.1
T8-S02	3	8/8/90	<0.05	<0.05	<0.05	<0.1
Samples Collected in 1999						
UST Investigation						
G-62	13	6/15/99	<0.005	<0.005	<0.005	<0.005
G-62	8.5	6/15/99	<0.005	<0.005	<0.005	<0.005
G-63	13	6/15/99	<0.005	<0.005	<0.005	<0.005
G-63	4.5	6/15/99	<0.005	<0.005	<0.005	**0.0075**
G-64	13.5	6/15/99	<0.005	<0.005	<0.005	<0.005
G-64	2.5	6/15/99	<0.005	<0.005	<0.005	<0.005
G-65	12.5	6/16/99	<0.005	**0.006**	<0.005	<0.005
G-65	3	6/16/99	<0.005	<0.005	<0.005	<0.005
G-66	12.5	6/16/99	<0.005	<0.005	<0.005	<0.005
G-66	4	6/16/99	<0.005	<0.005	<0.005	<0.005
G-67	11.5	6/16/99	<0.005	<0.005	<0.005	<0.005
G-67	3	6/16/99	<0.005	<0.005	<0.005	<0.005
G-68	4	6/16/99	<0.005	**0.008**	<0.005	<0.005
Samples for Leachability Evaluation						
T-33	4.5	6/28/99	<2.5	<2.5	<2.5	<2.5
T-34	4.5	6/28/99	<0.005	<0.005	<0.005	<0.005
T-35	4	6/28/99	<0.005	<0.005	<0.005	<0.005
T-36	3	6/28/99	<0.005	<0.005	<0.005	<0.005
T-37	4	6/28/99	<0.5	<2.5	<2.5	<2.5
T-38	4	6/28/99	<0.005	<0.005	<0.005	<0.005
SHN Investigation						
SHN-S-01	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-02	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-03	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-03	6	8/9/99	<0.005	<0.005	<0.005	<0.005
SHN-S-04	1	8/3/99	<0.005	<0.005	<0.005	<0.005

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
SHN-S-05	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-06	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-07	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-08	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-09	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-10	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-11	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-11	6	8/9/99	<0.005	<0.005	<0.005	<0.005
SHN-S-12	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-13	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-14	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-15	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-16	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-17	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-17	6	8/9/99	<0.005	<0.005	<0.005	<0.005
SHN-S-18	1	8/3/99	<0.005	<0.005	<0.005	<0.005
SHN-S-19	1	8/3/99	---[3]	<0.005	<0.005	<0.005
SHN-S-20	1	8/5/99	---	<0.005	<0.005	<0.005
SHN-S-21	1	8/5/99	---	<0.005	<0.005	<0.005
SHN-S-22	1	8/4/99	---	<0.005	<0.005	<0.005
SHN-S-23	1	8/4/99	---	<0.005	<0.005	<0.005
SHN-S-24	1	8/4/99	---	<0.005	<0.005	<0.005
SHN-S-25	1	8/4/99	---	<0.005	<0.005	<0.005
SHN-S-26	1	8/5/99	---	<0.005	<0.005	<0.005
SHN-S-27	1	8/5/99	---	<0.005	<0.005	<0.005
SHN-S-28	1	8/5/99	---	<0.005	<0.005	<0.005
SHN-WP-1	4	8/9/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-1	15.5	8/9/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-2	4	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-2	14	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-3	4	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-3	13	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-4	5	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-4	14	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-5	5	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-5	14	8/10/99	<0.005	<0.005	<0.005	<0.005

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
SHN-WP-6	5	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-6	12	8/10/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-7	6	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-7	12	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-8	6.5	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-8	12	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-9	4	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-9	12	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-10	7	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-10	12	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-11	4	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-11	12	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-12	4	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-12	9	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-13	4	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-13	12	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-14	4	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-14	13	8/11/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-15	6.5	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-15	13	8/12/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-16	4	8/6/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-16	16	8/6/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-17	4	8/6/99	<0.005	<0.005	<0.005	<0.005
SHN-WP-17	14	8/6/99	<0.005	<0.005	<0.005	<0.005
SHN Stockpile Samples						
SHN-SP-4	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-5	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-6	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-7	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-8	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-9	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-10	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-11	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-12	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-13	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-14	0	8/5/99	<0.005	<0.005	<0.005	<0.005

SOIL ANALYTICAL RESULTS FOR MONOAROMATIC HYDROCARBONS[1]

Former Rail Yard

Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	Benzene	Ethylbenzene	Toluene	Xylenes (total)
SHN-SP-15	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-16	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-17	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-18	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-19	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-20	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-21	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-22	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-23	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-24	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-25	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-26	0	8/5/99	<0.005	<0.005	<0.005	<0.005
SHN-SP-27	0	8/5/99	<0.005	<0.005	<0.005	<0.005

Notes:

1. All compound were analyzed in accordance with EPA Methods 8010, 8020, or 8240 (8260).
2. "<" indicates compound not detected above the laboratory limit shown.
3. --- = not analyzed.

Bold results indicate the analyte was detected.

Appendix E
Laboratory Analyatical Results,
Former General Petroleum Site

SUMMARY OF ORGANIC ANALYTICAL DATA FOR SOIL SAMPLES

Former General Petroleum Company

Eureka, California

all values are reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Zone	Sample Date	Benzene[1]	TEX and Substituted Benzenes[2]	MTBE and Oxygenates[3]	EDC/ EDB[4]	Other 8260[5]	Organic Lead[6]	Detected PNAs					TPHg[8]	TPHd[9]	TPHmo[9]
										Acenaph-thene	Fluor-anthene	Naph-thalene	Phenan-threne	Pyrene			
G-70	6	A	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-70	12	B	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-71	13	B	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-72	10	B	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-73	1	A	6/17/99	na	na	na	na	na	na	<0.010	<0.010	<0.010	<0.010	<0.010	na	na	na
G-73	6.5	A	6/17/99	<5	**13.0** 1,3,5-TMB **0.0035** Xylenes **0.0013** Toluene	ND	<5	ND	<0.50	**0.049**	<0.010	**0.049**	**0.040**	<0.010	**19000**	**540**	**350**
G-73	13	B	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	**1.9**	<1.0	<13
G-74	2	A	6/17/99	na	na	na	na	ND	na	na	na	na	na	na	<1.0	<1.0	**570**
G-74	4.5	A	6/17/99	na	na	na	na	ND	na	na	na	na	na	na	<1.0	<1.0	**99**
G-75	0.5	A	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.400	<0.400	<0.400	<0.400	<0.400	<1.0	<20	**1000**
G-75	2	A	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.040	<0.040	<0.040	<0.040	<0.040	<1.0	<1.0	**22**
G-75	4	A	6/17/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.400	<0.400	<0.400	<0.400	<0.400	<1.0	<1.0	**180**
G-76	0.5	A	6/18/99	na	na	na	na	na	na	<0.010	<0.010	<0.010	<0.010	<0.010	na	na	na
G-78	4.5	A	6/18/99	<0.005	**0.0025**[J] Toluene **0.0025**[J] Xylenes	ND	<0.005	ND	<0.50	na	na	na	na	na	**2.2**	<1.0	<13
G-78	10	B	6/18/99	<0.005	**0.005** Toluene **0.0066** Xylenes	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13
G-79	0.5	A	6/18/99	na	na	na	na	na	na	<0.020	<0.020	<0.020	<0.020	<0.020	na	na	na
G-79	4.5	A	6/18/99	<0.005	**0.0037**[J] Toluene	ND	<0.005	**0.150** Acetone **0.0058** Carbon Disulfide **0.026** MEK	**0.86**	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-79	10	B	6/18/99	<0.005	**0.0036**[J] Toluene **0.0036**[J] Xylenes	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13
G-80	6	A	6/18/99	<0.050	**0.150** SBBZ **0.320** IPBZ **0.0013**[J] Toluene **0.0035**[J] Xylenes	ND	<0.050	**0.130** Carbon Disulfide	**5.9**	<0.010	**0.012**	<0.010	<0.010	**0.015**	**14**	<1.0	<13
G-80	10	B	6/18/99	<0.005	**0.0016**[J] Toluene	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13
G-81	4.5	A	6/21/99	<0.005	<0.005	ND	<0.005	ND	**3.9**	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-81	10	B	6/21/99	<0.005	**0.010** Toluene **0.012** Xylenes	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13
G-83	4.5	A	6/18/99	<0.050	<0.050	ND	<0.050	ND	<0.50	na	na	na	na	na	**130**	<1.0	<13
G-83	10	B	6/21/99	<0.005	**0.0045**[J] Toluene **0.0064** Xylenes	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13

SUMMARY OF ORGANIC ANALYTICAL DATA FOR SOIL SAMPLES

Former General Petroleum Company

Eureka, California

all values are reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Zone	Sample Date	Benzene[1]	TEX and Substituted Benzenes[2]	MTBE and Oxygenates[3]	EDC/ EDB[4]	Other 8260[5]	Organic Lead[6]	Detected PNAs					TPHg[8]	TPHd[9]	TPHmo[9]
										Acenaph-thene	Fluor-anthene	Naph-thalene	Phenan-threne	Pyrene			
G-84	4.5	A	6/21/99	<0.005	**0.0019**[J] Toluene **0.0013**[J] Xylenes	ND	<0.005	ND	**4.6**	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-84	10	B	6/21/99	<0.005	**0.0039**[J] Toluene **0.0038**[J] Xylenes	ND	<0.005	ND	na	na	na	na	na	na	<1.0	<1.0	<13
G-85	4.5	A	6/18/99	**0.025**[J]	**0.013**[J] Toluene **0.064**[J] Xylenes	ND	<0.050	ND	**2.0**	na	na	na	na	na	**9.6**	<1.0	<13
G-85	10	B	6/21/99	<0.005	**0.0027**[J] Toluene **0.003**[J] Xylenes	ND	<0.005	ND	<0.50	na	na	na	na	na	<1.0	<1.0	<13
G-86	0.5	A	6/21/99	<0.005	<0.005	ND	<0.005	ND	**3.7**	<1.000	<1.000	<1.000	<1.000	<1.000	<1.0	<1.0	**67**
G-86	2	A	6/21/99	<0.005	**0.010** Toluene **0.011**[J] Xylenes	ND	<0.005	ND	<0.50	<0.200	<0.200	<0.200	<0.200	<0.200	<1.0	<20	**610**
G-86	4	A	6/21/99	<0.005	<0.005	ND	<0.005	ND	**1.6**	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13
G-89	5	A	6/21/99	**0.053**[J]	**0.840** 1,3,5-TMB **0.610** 1,2,4-TMB **0.011**[J] Xylenes **0.160**[J] Ethylbenzene	ND	<0.250	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	**310**	**11**	**38**
G-89	10	B	6/21/99	<0.005	<0.005	ND	<0.005	ND	<0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<1.0	<13

Notes:

Detections shown in bold.

J = estimated value below practical quantitation limit but above method detection limit.

1,3,5-TMB = 1,3,5-trimethylbenzene; 1,2,4-TMB = 1,2,4-trimethylbenzene; IPBZ = isopropylbenzene; SBBZ = secbutylbenzene

ND = not detected above reporting limit; see laboratory report for reporting limits.

na = not analyzed

1. Benzene analyzed in accordance with EPA Method 8260.
2. Toluene, ethylbenzene, and xylenes (TEX) and other substituted benzenes (e.g. 1,3,5-trimethylbenzene) analyzed in accordance with EPA Method 8260.
3. Methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE); di-isopropyl ether (DIPE); tertiary amyl ether (TAME); and tertiary butyl alcohol (TBA) analyzed in accordance with EPA Method 8260. Not detected at reporting limits ranging from 0.005 mg/kg to 20 mg/kg.
4. Lead scavengers ethylene dichloride (EDC; 1,2-dichloroethane) and ethylene dibromide (EDB) analyzed in accordance with EPA Method 8260.
5. Halogenated and volatile organic compounds analyzed in accordance with EPA Method 8260. Not detected at reporting limits ranging from 0.005 mg/kg to 100 mg/kg.
6. Organic lead analyzed in accordance with DHS Method.
7. Polynuclear aromatic hydrocarbons (PNAs) analyzed in accordance with EPA Method 8270 selected ion monitoring.
8. Total Petroleum Hydrocarbons (TPH) as Gasoline (TPHg) analyzed in accordance with EPA Method 8015M.
9. TPH as Diesel (TPHd) and TPH as Motor Oil (TPHmo) analyzed in accordance with EPA Method 8015M after silica gel cleanup (EPA Method 3630M).

SUMMARY OF METALS ANALYTICAL DATA FOR SOIL SAMPLES

Former General Petroleum Company

Eureka, California

all values reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Zone	Sample Date	Sb	As	Ba	Be	Cd	Total Cr	Co	Cu	Pb	Acid Leachable Lead[2]	Water Soluble Lead[2]	Hg	Mo	Ni	Se	Ag	Th	Va	Zn
G-70	6	A	6/17/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-70	12	B	6/17/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-71	13	B	6/17/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-72	10	B	6/17/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-73	1	A	6/17/99	**5.5**	<1.0	**71**	<5.0	<5.0	**33**	**8.5**	**19**	**20**	na	na	<0.10	<5.0	**44**	<5.0	<5.0	<5.0	**30**	**63**
G-73	6.5	A	6/17/99	na	na	na	na	na	na	na	na	**19**	na	na	na	na	na	na	na	na	na	na
G-73	13	B	6/17/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-74	2	A	6/17/99	<5.0	<1.0	**71**	<5.0	<5.0	**35**	**7.8**	**35**	**42**	na	na	<0.10	<5.0	**44**	<5.0	<5.0	-5.0	**30**	**100**
G-75	0.5	A	6/17/99	na	<1.0	na	na	na	na	na	na	**41**	na	na	na	na	na	na	na	na	na	na
G-75	2	A	6/17/99	na	<0.5	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-75	4	A	6/17/99	na	<1.0	na	na	na	na	na	na	**20**	na	na	na	na	na	na	na	na	na	na
G-76	0.5	A	6/18/99	<5.0	<0.5	**32**	<5.0	<5.0	**30**	**6.7**	**6.1**	**5.8**	na	na	<0.10	<5.0	**36**	<5.0	<5.0	<5.0	**27**	**28**
G-77	0.5	A	6/18/99	na	na	na	na	<5.0	**36**	na	na	**7.7**	na	na	na	na	**44**	na	na	na	na	**34**
G-78	4.5	A	6/18/99	na	na	na	na	na	na	na	na	**19**	na	na	na	na	na	na	na	na	na	na
G-79	0.5	A	6/18/99	<5.0	<0.5	**98**	<5.0	<5.0	**32**	**8.1**	**33**	**11**	na	na	<0.10	<5.0	**34**	<5.0	<5.0	<5.0	**33**	**64**
G-79	4.5	A	6/18/99	na	na	na	na	na	na	na	na	**7.2**	na	na	na	na	na	na	na	na	na	na
G-80	6	A	6/18/99	na	na	na	na	na	na	na	na	**12**	na	na	na	na	na	na	na	na	na	na
G-81	4.5	A	6/21/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-82	0.5	A	6/21/99	na	na	na	na	na	na	na	na	**46**	**0.54**	<0.015	na	na	na	na	na	na	na	na
G-82	2	A	6/21/99	na	na	na	na	na	na	na	na	<5.0	<0.25	<0.015	na	na	na	na	na	na	na	na
G-82	4	A	6/21/99	na	na	na	na	na	na	na	na	<5.0	<0.25	<0.015	na	na	na	na	na	na	na	na
G-83	4.5	A	6/21/99	na	na	na	na	na	na	na	na	**13**	na	na	na	na	na	na	na	na	na	na
G-84	4.5	A	6/21/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na
G-85	4.5	A	6/21/99	na	na	na	na	na	na	na	na	**12**	na	na	na	na	na	na	na	na	na	na
G-86	0.5	A	6/21/99	na	<0.5	na	na	na	na	na	na	**49**	na	na	na	na	na	na	na	na	na	na
G-86	2	A	6/21/99	na	<0.5	na	na	na	na	na	na	**29**	na	na	na	na	na	na	na	na	na	na
G-86	4	A	6/21/99	na	<0.5	na	na	na	na	na	na	**26**	na	na	na	na	na	na	na	na	na	na
G-89	5	A	6/21/99	na	na	na	na	na	na	na	na	**12**	na	na	na	na	na	na	na	na	na	na
G-89	10	B	6/21/99	na	na	na	na	na	na	na	na	<5.0	na	na	na	na	na	na	na	na	na	na

Notes:

Detections shown in bold.

Sb = Antimony; As = Arsenic; BA = Barium; BE = Beryllium; Cd = Cadmium; Cr = Chromium Total; Co = Cobalt; Cu = Copper; Pb = Lead; Hg = Mercury; Mo = Molybdenum; Ni = Nickle; Se = Selenium; Ag = Silver; Th = Thallium

na = not analyzed

Data reported in milligram per kilogram (mg/kg) with the exception of Soluble and Leachable Lead, which is reported in milligrams per liter (mg/l).

1. Metals analyzed in accordance with EPA Method Series 6000/7000.
2. Acid leachable lead analyzed in accordance with EPA Method 6010 after the California WET (Code of Regulations Title 22, Section 66261.24. Appendix II). Water soluble lead analyzed in accordance with EPA Method 6010 after the California WET where the extraction solution was deionized water adjusted to a pH that is representative of local rainwater (California Regional Water Quality Control Board, Central Valley Region document entitled "The designated level methodology for waste classification and clean-up level determination," June 1989).

GEOMATRIX

SUMMARY OF ANALYTICAL DATA FOR GRAB GROUNDWATER SAMPLES

Former General Petroleum Company

Eureka, California

all values are reported in milligrams per liter (mg/l)

Boring ID	Date	Benzene[1]	TEX and Substituted Benzenes[1]	VOCs			PNAs[5]	PNAs (Filtered)[5,6]	Organic Lead[7]	Dissolved Lead[8]	Dissolved Arsenic[8]	TPHg[9]	TPHd/mo[10]	TPHd/mo (Filtered)[7,10]
				MTBE and Oxygenates[2]	EDB/ EDC[3]	Other 8260[4]								
A-Zone Samples														
G-74A	6/16/99	<0.005	**0.0012**[J] T	ND	<0.005	na	na	na	na	na	na	na	na	na
B-Zone Samples														
G-69B	6/16/99	<0.005	**0.0022**[J] T	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	na	**0.075**[11]	<0.050[12] / <0.250	<0.050 / <0.250
G-70B	6/16/99	<0.005	**0.0011**[J] T	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	na	**0.070**[11]	<0.050 / <0.250	<0.050 / <0.250
G-71B	6/16/99	**0.0044**[J]	**0.0011**[J] E **0.0011**[J] T	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	na	**0.160**[11]	<0.050 / <0.250	<0.050 / <0.250
G-72B	6/16/99	<0.005	**0.0021**[J] T	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	<0.005	**0.065**[11]	<0.050 / <0.250	<0.050 / <0.250
G-73B	6/16/99	<0.005	*	*	*	*	*	*	*	*	*	*	*	*
G-74B	6/16/99	<0.005	<0.005	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	<0.005	<0.050	**0.079** /<0.250	<0.050 / <0.250
G-75B	6/16/99	<0.005	<0.005	ND	<0.005	ND	<0.0002	<0.0002	<0.10	<0.015	<0.005	<0.050	<0.050 / <0.250	<0.050 / <0.250

Notes

Detections shown in bold.

J = estimated value below practical quantitation limit but above method detection limit.

T = Toluene, E = ethylbenzene

ND = not detected; see laboratory sheets for reporting limits.

na = not analyzed; insufficient sample volume.

* = Sample not analyzed because of sheen on sample.

1. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and other substituted benzenes (e.g. 1,3,5-trimethylbenzene) analyzed in accordance with EPA Method 8260.
2. Methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE); di-isopropyl ether (DIPE); tertiary amyl ether (TAME); and tertiary butyl alcohol (TBA) analyzed in accordance with EPA Method 8260. ND = No detections; the detection limit for MTBE and Oxygenates is 0.005 mg/l, with the exception of TBA at 0.02 mg/l.
3. Ethylene dichloride (EDC; 1,2-dichloroethane) and ethylene dibromide (EDB) analyzed in accordance with EPA Method 8260.
4. Halogenated and other volatile organic compunds analyzed in accordance with EPA Method 8260. ND = No detections; detection limits range from 0.005 mg/l to 0.100 mg/l.
5. Polynuclear aromatic hydrocarbons (PNAs) analyzed in accordance with EPA Method 8270 selected ion monitoring.
6. Samples passed through a 0.7-micron glass fiber filter to minimize potential interferences associated with the presence of non-dissolved separate-phase petroleum hydrocarbon, petroleum hydrocarbons adhered to particulate material (sediment), and emulsified petroleum hydrocarbons.
7. Organic lead analyzed in accordance with DHS Method.
8. Arsenic and lead analyzed in accordance with EPA Method 200.7. Samples passed through a 0.45-micron filter before transfer into sample containers containing nitric acid preservative.
9. Total Petroleum hydrocarbons (TPH) as Gasoline (TPHg) analyzed in accordance with EPA Method 8015M.
10. TPH as Diesel (TPHd) and TPH as Motor Oil (TPHmo) analyzed in accordance with EPA Method 8015M after silica gel cleanup (EPA Method 3630M).
11. It should be noted that the Trip Blank contained 0.075 mg/l TPHg; the equipment blank contained 0.055 mg/l TPHg, 0.0071 mg/l carbon disulfide, and 0.015 mg/l chloroform.
12. The unfiltered sample G-69B-0699 was extracted outside of holding time. The corresponding filtered sample was extracted within holding time.

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Appendix F
Soil Analytical Results for Metals

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
PL-2	0.3	8/17/88	---[1]	---	---	---	---	---	---	---	---	54.2	---	---	---	---	---	---	---	---	---
PL-2	1.25	8/17/88	0.27	0.41	17.5	<2[2]	<1	31	---	6.5	19.2	---	---	<0.08	<5	40.1	<0.5	<2	<0.5	<20	73.2
PL-3	0.3	8/17/88	---	---	---	---	---	---	---	---	---	75	---	---	---	---	---	---	---	---	---
PL-3	0.66	8/17/88	<0.1	30.6	56.1	<2	<1	29	---	8.42	29.7	---	---	<0.08	<5	44	<0.5	<2	<0.5	32.3	112
PL-5	0.75	8/17/88	0.24	12.8	99.6	<2	<1	35.7	---	10.3	37.1	---	---	<0.08	<5	45.8	<0.5	<2	<0.5	38.8	155
PL-5	0.8	8/17/88	---	---	---	---	---	---	---	---	---	192	---	---	---	---	---	---	---	---	---
PL-6	0.4	8/17/88	---	---	---	---	---	---	---	---	---	48.6	---	---	---	---	---	---	---	---	---
PL-6	0.75	8/17/88	0.15	15.6	92.4	<2	<1	41.1	---	10.3	25.6	---	---	<0.08	<5	55.5	<0.5	<2	<0.5	31.4	72.6
PL-9	0.4	8/17/88	---	---	---	---	---	---	---	---	---	31.6	---	---	---	---	---	---	---	---	---
PL-9	0.75	8/17/88	0.19	8.86	102	<2	<1	32.9	---	9.1	22	---	---	<0.08	<5	48.1	<0.5	<2	<0.5	<20	77.4
PL-10	0.4	8/17/88	---	---	---	---	---	---	---	---	---	40.8	---	---	---	---	---	---	---	---	---
PL-10	0.83	8/17/88	0.15	21.9	111	<2	<1	40.3	---	11.3	121	---	---	<0.08	<5	58.9	<0.5	<2	<0.5	39.8	163
PL-11	0.5	8/17/88	0.11	7.02	57.6	<2	<1	14.5	---	4.03	7.62	15.2	---	<0.08	<5	19	<0.5	<2	<0.5	<20	24.7
B-1	2	9/1/92	<0.2	0.18	<3	<0.2	<0.3	27	---	7.9	1.8	7	---	0.061	<3	36	<0.03	0.2	<3	16	33
B-5	2	9/1/92	<0.2	0.9	44	<0.2	<0.3	40	---	13	42	4	---	0.17	<3	78	0.13	0.6	<3	38	69
B-7	2	9/1/92	<0.2	0.16	1.1	<0.2	<0.3	38	---	11	15	10	---	0.11	<3	64	0.27	0.5	<3	34	47
B-14	2	9/1/92	<0.2	1.6	31	<0.2	<0.3	30	---	7.5	23	19	---	0.14	<3	42	0.46	0.2	<3	30	89
G-1	0	9/19/95	2	18	100	0.2	0.2	54	<2	13	150	49	---	<0.06	0.8	76	<1	<0.1	<1	35	180
G-2	0	9/19/95	<1	17	53	0.3	<0.2	70	<2	11	29	16	---	0.06	1.5	74	<1	<0.1	<1	42	69
G-4	0	9/20/95	1	4.8	100	0.2	0.5	31	---	7.5	35	150	---	0.11	<0.2	35	<1	<0.1	<1	24	230
G-5	0	9/20/95	<1	2.9	98	0.2	0.3	35	---	5.3	23	200	---	0.11	<0.2	30	<1	0.1	<1	28	240
G-6	0	9/20/95	<1	9.6	84	0.2	0.2	50	---	9.9	41	93	---	<0.06	0.4	64	<1	0.1	<1	33	120
G-7	0	9/20/95	15	6.8	62	<0.1	0.2	23	<5	7.7	1300[3]	810	---	0.13	1.1	60	<1	0.6	9	26	360
G-8	0	9/20/95	1	5.5	80	0.1	<0.2	42	---	8.9	78	96	---	0.1	2.6	70	<1	<0.1	<1	29	92
G-9	0	9/20/95	1	42	65	<0.1	0.4	32	<2	10	97	110	---	0.18	<0.2	40	<1	0.1	4	47	260
G-10	0	9/20/95	<1	2.9	61	0.2	<0.2	48	---	6.2	16	40	---	<0.06	1.1	34	<1	<0.1	<1	34	63
G-11	0	9/20/95	1	5.9	100	0.1	<0.2	41	---	9.7	70	150	---	<0.06	0.9	50	<1	0.1	<1	34	110
G-12	0	9/20/95	1	11	120	0.2	<0.2	58	---	12	54	150	---	<0.06	1.3	60	<1	0.1	<1	36	110
G-13	0	9/20/95	1	7.5	290	0.3	1.2	49	<2	8.4	81	150	---	0.12	1.8	48	<1	0.3	<1	27	360
G-14	0	9/19/95	2	<0.5	79	0.3	<0.2	49	---	10	45	85	---	0.24	<0.2	41	<1	<0.1	<1	49	100
G-15	0	9/19/95	<10	19	100	<1	<2	73	---	21	290	730	---	0.07	8	92	<1	<1	<10	37	380
G-16	0	9/20/95	5	93	260	0.2	1.4	71	---	13	230	420	---	0.35	11	70	<1	0.3	<1	35	290
G-17	0	9/21/95	1	<0.5	110	0.1	0.6	35	---	8.6	34	60	---	<0.06	0.3	45	<1	<0.1	<1	27	110
G-18	0	9/19/95	2	2.8	120	<0.1	1.1	33	---	12	110	270	---	0.09	1.1	32	<1	<0.1	<1	58	280
G-19	0	9/19/95	2	8.5	100	0.2	0.3	50	<2	9.3	80	110	---	<0.06	0.9	49	<1	<0.1	<1	37	170
G-20	0	9/20/95	3	20	200	0.2	7.5	67	---	12	220	410	---	0.25	6.6	74	<1	0.6	<1	31	
G-21	0	9/19/95	<10	34	170	<1	<2	90	---	20	220	480	---	1.2	6	96	<1	<1	<10	55	410
G-22	4	9/18/95	---	---	---	---	---	64	<2	---	---	---	---	---	---	---	---	---	---	---	---
G-23	4	9/18/95	---	---	---	---	---	54	<2	---	---	---	---	---	---	---	---	---	---	---	---
G-28	4	9/18/95	---	---	---	---	---	5.7	<2	---	---	---	---	---	---	---	---	---	---	---	---
G-34	4	9/18/95	---	---	---	---	---	36	<2	---	---	---	---	---	---	---	---	---	---	---	---
G-38	4	9/19/95	2	<0.5	19	<0.1	<0.2	42	---	6.6	15	51	---	0.06	<0.2	36	1	<0.1	<1	23	36
G-40	4	9/18/95	---	---	---	---	---	32	<2	---	---	---	---	---	---	---	---	---	---	---	---
G-43	4	9/18/95	---	---	---	---	---	---	---	---	11	10	---	---	---	---	---	---	---	---	---

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
G-44	4	9/18/95	---	---	---	---	---	---	---	---	13	5	---	---	---	---	---	---	---	---	---
G-45	2	9/18/95	---	---	---	---	---	---	---	---	17	25	---	---	---	---	---	---	---	---	---
G-45	4	9/18/95	---	---	---	---	---	---	---	---	110	98	---	---	---	---	---	---	---	---	---
G-46	2	9/18/95	---	---	---	---	---	---	---	---	3900	510	---	---	---	---	---	---	---	---	---
G-46	4	9/18/95	---	---	---	---	---	---	---	---	120	59	---	---	---	---	---	---	---	---	---
G-47	2	9/18/95	---	---	---	---	---	---	---	---	8.9	6	---	---	---	---	---	---	---	---	---
G-48	2	9/18/95	---	---	---	---	---	---	---	---	310	270	---	---	---	---	---	---	---	---	---
G-49	4	9/19/95	---	---	---	---	---	---	---	---	62	62	---	---	---	---	---	---	---	---	---
T1E-S01	1.5	7/31/90	<6	13.2	96.1	0.23	<0.5	32	---	6.6	46.4	121	---	<0.1	<2	41.8	<0.5	<1	<0.5	19.4	52.6
T1E-S02	3.5	7/31/90	<6	2.2	13.1	<0.2	<0.5	30.4	---	6.1	13.7	3.8	---	<0.1	<4	35.6	<1	<1	<0.5	16.9	32.7
T1E-S03	2	7/31/90	<6	2.1	17	0.26	<0.5	37.3	---	6.2	8.5	3.5	---	<0.1	<2	38.1	<1	<1	<1	20.2	27.4
T1E-S04	3.5	7/31/90	<6	1.5	12.4	0.21	<0.5	29.3	---	5.6	6.4	2.2	---	<0.1	<2	34.5	<0.5	<1	<0.5	15.8	22.6
T1W-S05	1.5	8/3/90	<6	2.7	68.6	0.44	<0.5	71.9	---	9.8	9.5	3.2	---	<0.1	<2	45.8	<1	<1	<1	56.5	34.9
T1W-S06	4	8/3/90	<6	1.8	12.2	<0.2	<0.5	19.6	---	4.5	6.5	2	---	<0.1	<2	23.2	<1	<1	<0.5	12.7	19.4
T3E-S01	1.5	8/3/90	<6	2.9	20.6	<0.2	<0.5	34.1	---	6.6	22	12.7	---	<0.1	<2	38.3	<1	<1	<0.5	22.5	80.1
T3E-S02	4	8/3/90	<6	2.6	12.7	<0.2	<0.5	29.2	---	5.3	9.2	2.4	---	<0.1	<2	30.8	<0.5	<1	<0.5	17.6	23.6
T3E-S07	2.5	8/3/90	<6	4.9	82.5	<0.2	<0.5	39.1	---	6.8	10.6	5	---	<0.1	<2	41.2	<1	<1	<0.5	24.2	29.1
T3E-S08	4	8/3/90	<6	3	11.5	<0.2	<0.5	28.8	---	4.9	6.9	2.4	---	<0.1	<2	31.2	<0.5	<1	<0.5	17.2	21.5
T3W-S25	1.5	7/31/90	<6	9.8	57.2	0.27	<0.5	33	---	6.6	15	11.6	---	<0.1	<2	29.1	<1	<1	<0.5	29.8	28.9
T3W-S26	4	7/31/90	<6	1.9	15	<0.2	<0.5	27.7	---	5.7	5.6	3.2	---	<0.1	<2	30.1	<1	<1	<1	14.5	20.1
T3W-S28	2	7/31/90	<6	2.5	82.6	0.65	<0.5	56	---	20.6	15.7	4.2	---	<0.1	<2	32.1	<1	<1	<0.5	67.7	36.7
T3W-S29	4	7/31/90	<6	2.1	15.2	<0.2	<0.5	35.1	---	5.7	5.8	3	---	<0.1	<2	35.7	<0.5	<1	<0.5	20.6	24.2
T5-S01	2.5	8/3/90	<6	2.7	13.2	0.23	<0.5	40.1	---	5.2	7.2	3.2	---	<0.1	<2	31.1	<0.5	<1	<0.5	20.4	24.6
T5-S02	3.5	8/3/90	<6	<0.5	20.4	0.22	<0.5	38.5	---	5.5	9.2	2.4	---	<0.1	<2	35.4	<1	<1	<0.5	20.9	27.6
T5-S10	3	8/3/90	<6	2	22.4	0.2	<0.5	39.8	---	5.8	10.1	2.7	---	<0.1	<2	35.3	<0.5	<1	<0.5	24.4	24.3
T5-S11	4	8/3/90	<6	2.1	13.5	<0.2	<0.5	34.9	---	5	6.2	2.7	---	<0.1	<2	31.4	<1	<1	<0.5	17.8	28.8
T5-S24	3.5	8/3/90	<6	2.7	88.6	0.4	<0.5	56.7	---	8.7	21.7	3.7	---	<0.1	<2	38.6	<0.5	<1	<0.5	41.3	43.9
T5-S25	5	8/3/90	<6	1.3	34	0.22	<0.5	44.3	---	5.5	12.2	2.1	---	<0.1	<2	38.5	<0.5	<1	<0.5	23.3	33.5
T7E-S01	1.6	8/8/90	<6	5.9	86.3	0.33	<0.5	68.7	---	7.4	46.3	15.8	---	<0.1	2.1	61.1	<1	<1	<0.5	43.4	63.7
T7E-S02	3.5	8/8/90	<6	10.8	199	0.35	0.58	42.4	---	10.1	124	222	---	<0.1	<2	52.6	<1	<1	<0.5	42.7	133
T7-S05	2.5	8/8/90	<6	3.5	185	<0.2	<0.5	26	---	4.9	259	374	---	0.16	<2	49.7	<1	<1	<0.5	34.4	160
T7W-S02	3.8	8/8/90	<6	3.1	59.6	0.31	<0.5	55.1	---	5.2	15.7	3.7	---	<0.1	<2	38.1	<1	<1	<0.5	41.5	36.9
T7W-S03	5.5	8/8/90	<6	1.4	61.8	0.34	<0.5	43.7	---	4.8	15.3	2.7	---	<0.1	<2	31.6	<1	<1	<0.5	35.5	30.9
T13-S08	2	9/2/92	0.4	0.07	540	<0.2	3.7	32	---	12	160	1800	---	0.41	<3	52	<0.03	0.7	<3	34	1800
T15-S01	2	9/2/92	0.2	0.12	530	<0.2	<0.3	33	---	12	100	210	---	0.14	<3	53	<0.03	0.7	<3	36	15
T17-S01	1.5	9/2/92	<0.2	0.17	26	<0.2	0.9	15	---	6.8	83	600	---	0.091	<3	61	0.17	0.3	<3	45	96
T19-S01	4	9/2/92	<0.2	0.52	14	<0.2	<0.3	16	---	7.5	14	25	---	<0.004	<3	33	0.03	0.3	<3	21	53
T20-S05	3	9/2/92	<0.2	3.2	<3	<0.2	<0.3	27	---	7.4	8.5	14	---	0.044	<3	29	0.18	0.4	<3	29	30
T21-S02	3.5	9/2/92	1	<0.03	17	<0.2	<0.3	4.4	---	3.1	520	590	---	0.054	<3	47	<0.03	0.3	<3	45	45
Samples Collected in 1999																					
Lead Leachability Evaluation																					
G-54	0	2/24/99	---	---	---	---	---	---	---	---	---	22	---	---	---	---	---	---	---	---	---
G-54	2	2/24/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
G-54	4	2/24/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
G-55	0	2/24/99	---	---	---	---	---	---	---	---	---	190	---	---	---	---	---	---	---	---	---
G-55	2	2/24/99	---	---	---	---	---	---	---	---	---	77	---	---	---	---	---	---	---	---	---
G-55	4	2/24/99	---	---	---	---	---	---	---	---	---	83	---	---	---	---	---	---	---	---	---
G-56	0	2/25/99	---	---	---	---	---	---	---	---	---	65	---	---	---	---	---	---	---	---	---
G-56	2	2/25/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
G-56	4	2/25/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
G-57	0	2/25/99	---	---	---	---	---	---	---	---	---	72	---	---	---	---	---	---	---	---	---
G-58	0	2/25/99	---	---	---	---	---	---	---	---	---	79	---	---	---	---	---	---	---	---	---
G-59	0	2/25/99	---	---	---	---	---	---	---	---	---	83	---	---	---	---	---	---	---	---	---
G-60	0	2/25/99	---	---	---	---	---	---	---	---	---	50	---	---	---	---	---	---	---	---	---
G-61	0	2/25/99	---	---	---	---	---	---	---	---	---	96	---	---	---	---	---	---	---	---	---
UST Investigation																					
G-62	13	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-62	8.5	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-63	13	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-63	4.5	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-64	13.5	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-64	2.5	6/15/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-65	12.5	6/16/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-65	3	6/16/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-66	12.5	6/16/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-66	4	6/16/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-67	11.5	6/16/99	---	---	---	---	---	---	---	---	---	<5	<0.5	---	---	---	---	---	---	---	---
G-67	3	6/16/99	---	---	---	---	---	---	---	---	---	30	<0.5	---	---	---	---	---	---	---	---
G-68	4	6/16/99	---	---	---	---	---	---	---	---	---	56	<0.5	---	---	---	---	---	---	---	---
Samples for Leachability Evaluation																					
T-33	4.5	---	---	---	---	---	---	---	---	---	---	41	---	---	---	---	---	---	---	---	---
T-34	4.5	---	---	---	---	---	---	---	---	---	---	1700	---	---	---	---	---	---	---	---	---
T-35	4.5	---	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
T-36	3	---	---	---	---	---	---	---	---	---	---	12-	---	---	---	---	---	---	---	---	---
T-37	4	---	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
T-38	4	---	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
SHN Investigation																					
SHN-S-01[4]	1	8/3/99	---	52	---	---	---	---	---	---	---	92	---	---	---	---	---	---	---	---	---
SHN-S-02	1	8/3/99	---	31	---	---	---	---	---	---	---	100	---	---	---	---	---	---	---	---	---
SHN-S-03	1	8/3/99	---	15	---	---	---	---	---	---	---	54	---	---	---	---	---	---	---	---	---
SHN-S-03	6	8/9/99	---	---	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---
SHN-S-04	1	8/3/99	---	<1	---	---	---	---	---	---	---	140	---	---	---	---	---	---	---	---	---
SHN-S-05	1	8/3/99	---	7.8	---	---	---	---	---	---	---	77	---	---	---	---	---	---	---	---	---
SHN-S-06	1	8/3/99	---	130	---	---	---	---	---	---	---	100	---	---	---	---	---	---	---	---	---
SHN-S-07	1	8/3/99	---	490	---	---	---	---	---	---	---	180	---	---	---	---	---	---	---	---	---
SHN-S-08	1	8/3/99	---	27	---	---	---	---	---	---	---	6.5	---	---	---	---	---	---	---	---	---
SHN-S-09	1	8/3/99	---	<1	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SHN-S-10	1	8/3/99	---	370	---	---	---	---	---	---	---	100	---	---	---	---	---	---	---	---	---
SHN-S-11	1	8/3/99	---	<1	---	---	---	---	---	---	---	16	---	---	---	---	---	---	---	---	---
SHN-S-11	6	8/9/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
SHN-S-12	1	8/3/99	---	<1	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
SHN-S-13	1	8/3/99	---	7.4	---	---	---	---	---	---	---	260	---	---	---	---	---	---	---	---	---
SHN-S-14	1	8/3/99	---	7.4	---	---	---	---	---	---	---	43	---	---	---	---	---	---	---	---	---
SHN-S-15	1	8/3/99	---	4.4	---	---	---	---	---	---	---	10	---	---	---	---	---	---	---	---	---
SHN-S-16	1	8/3/99	---	10	---	---	---	---	---	---	---	200	---	---	---	---	---	---	---	---	---
SHN-S-17	1	8/3/99	---	520	---	---	---	---	---	---	---	140	---	---	---	---	---	---	---	---	---
SHN-S-17	6	8/9/99	---	---	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
SHN-S-18	1	8/3/99	---	6.1	---	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---
SHN-S-19	1	8/3/99	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-20	1	8/5/99	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-21	1	8/5/99	---	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-22	1	8/4/99	---	6.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-23	1	8/4/99	---	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-24	1	8/4/99	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-25	1	8/4/99	---	9.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-26	1	8/5/99	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-27	1	8/5/99	---	2.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-S-28	1	8/5/99	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-WP-1	4	8/9/99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-WP-1	15.5	8/9/99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-WP-2	4	8/10/99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-WP-2	14	8/10/99	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SHN-WP-3	4	8/10/99	---	---	---	---	---	35	---	---	---	<5	---	---	---	34	---	---	---	---	26
SHN-WP-4	5	8/10/99	---	---	---	---	---	38	---	---	---	<5	---	---	---	36	---	---	---	---	25
SHN-WP-5	5	8/10/99	---	---	---	---	---	34	---	---	---	<5	---	---	---	33	---	---	---	---	25
Stockpiles Samples																					
SHN-SP-4	0	8/5/99	---	---	---	---	---	---	---	---	---	71	---	---	---	---	---	---	---	---	---
SHN-SP-5	0	8/5/99	---	---	---	---	---	---	---	---	---	63	---	---	---	---	---	---	---	---	---
SHN-SP-6	0	8/5/99	---	---	---	---	---	---	---	---	---	80	---	---	---	---	---	---	---	---	---
SHN-SP-7	0	8/5/99	---	---	---	---	---	---	---	---	---	44	---	---	---	---	---	---	---	---	---
SHN-SP-8	0	8/5/99	---	---	---	---	---	---	---	---	---	120	---	---	---	---	---	---	---	---	---
SHN-SP-9	0	8/5/99	---	---	---	---	---	---	---	---	---	210	---	---	---	---	---	---	---	---	---
SHN-SP-10	0	8/5/99	---	---	---	---	---	---	---	---	---	94	---	---	---	---	---	---	---	---	---
SHN-SP-11	0	8/5/99	---	---	---	---	---	---	---	---	---	31	---	---	---	---	---	---	---	---	---
SHN-SP-12	0	8/5/99	---	---	---	---	---	---	---	---	---	47	---	---	---	---	---	---	---	---	---
SHN-SP-13	0	8/5/99	---	---	---	---	---	---	---	---	---	120	---	---	---	---	---	---	---	---	---
SHN-SP-14	0	8/5/99	---	---	---	---	---	---	---	---	---	81	---	---	---	---	---	---	---	---	---
SHN-SP-15	0	8/5/99	---	---	---	---	---	---	---	---	---	63	---	---	---	---	---	---	---	---	---
SHN-SP-16	0	8/5/99	---	---	---	---	---	---	---	---	---	33	---	---	---	---	---	---	---	---	---
SHN-SP-17	0	8/5/99	---	---	---	---	---	---	---	---	---	12	---	---	---	---	---	---	---	---	---
SHN-SP-18	0	8/5/99	---	---	---	---	---	---	---	---	---	42	---	---	---	---	---	---	---	---	---

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SHN-SP-19	0	8/5/99	---	---	---	---	---	---	---	---	---	130	---	---	---	---	---	---	---	---	---
SHN-SP-20	0	8/5/99	---	---	---	---	---	---	---	---	---	99	---	---	---	---	---	---	---	---	---
SHN-SP-21	0	8/5/99	---	---	---	---	---	---	---	---	---	10	---	---	---	---	---	---	---	---	---
SHN-SP-22	0	8/5/99	---	---	---	---	---	---	---	---	---	32	---	---	---	---	---	---	---	---	---
SHN-SP-23	0	8/5/99	---	---	---	---	---	---	---	---	---	67	---	---	---	---	---	---	---	---	---
SHN-SP-24	0	8/5/99	---	---	---	---	---	---	---	---	---	3600	---	---	---	---	---	---	---	---	---
SHN-SP-25	0	8/5/99	---	---	---	---	---	---	---	---	---	220	---	---	---	---	---	---	---	---	---
SHN-SP-26	0	8/5/99	---	---	---	---	---	---	---	---	---	130	---	---	---	---	---	---	---	---	---
SHN-SP-27	0	8/5/99	---	---	---	---	---	---	---	---	---	33	---	---	---	---	---	---	---	---	---
Samples Collected in 2001																					
Samples for Leachability Evaluation																					
A-01-1.0	1	3/16/01	---	63	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-01-2.0	2	3/16/01	---	240	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-02-1.0	1	3/16/01	---	57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-02-2.0	2	3/16/01	---	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-03-1.0	1	3/16/01	---	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-03-2.0	2	3/16/01	---	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-04-1.0	1	3/16/01	---	93	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-04-2.0	2	3/16/01	---	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-05-1.0	1	3/16/01	---	250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-05-2.0	2	3/16/01	---	310	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-06-1.0	1	3/16/01	---	60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-06-2.0	2	3/16/01	---	100	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-07-1.0	1	3/16/01	---	140	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-07-2.0	2	3/16/01	---	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-08-1.0	1	3/16/01	---	340	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-08-2.0	2	3/16/01	---	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-09-1.0	1	3/16/01	---	230	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-09-2.0	2	3/16/01	---	88	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-10-1.0	1	3/16/01	---	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A-10-2.0	2	3/16/01	---	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SS-1-1.0	1	9/27/01	---	19	---	---	---	---	---	---	87	40	---	---	---	---	---	---	---	---	---
SS-1-2.0	2	9/27/01	---	81	---	---	---	---	---	---	56	130	---	---	---	---	---	---	---	---	---
SS-2-1.0	1	9/27/01	---	250	---	---	---	---	---	---	21	28	---	---	---	---	---	---	---	---	---
SS-2-2.0	2	9/27/01	---	12	---	---	---	---	---	---	4	3.3	---	---	---	---	---	---	---	---	---
SS-3-1.0	1	9/27/01	---	25	---	---	---	---	---	---	10	4	---	---	---	---	---	---	---	---	---
SS-3-2.0	2	9/27/01	---	8.8	---	---	---	---	---	---	3.9	3.4	---	---	---	---	---	---	---	---	---
SS-4-1.0	1	9/27/01	---	1.7	---	---	---	---	---	---	54	78	---	---	---	---	---	---	---	---	---
SS-4-2.0	2	9/27/01	---	7.5	---	---	---	---	---	---	83	790	---	---	---	---	---	---	---	---	---
SS-5-1.0	1	9/27/01	---	1.4	---	---	---	---	---	---	160	170	---	---	---	---	---	---	---	---	---
SS-5-2.0	2	9/27/01	---	3.5	---	---	---	---	---	---	200	320	---	---	---	---	---	---	---	---	---
SS-6-1.0	1	9/27/01	---	6.6	---	---	---	---	---	---	8.4	7.4	---	---	---	---	---	---	---	---	---
SS-6-2.0	2	9/27/01	---	2.6	---	---	---	---	---	---	3.8	3.5	---	---	---	---	---	---	---	---	---
SS-7-1.0	1	9/27/01	---	23	---	---	---	---	---	---	32	70	---	---	---	---	---	---	---	---	---

SOIL ANALYTICAL RESULTS FOR METALS

Former Rail Yard

Eureka, California

Concentrations in milligrams per kilogram (mg/kg) unless otherwise noted

Sample Location	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Hexavalent Chromium	Cobalt	Copper	Lead	Organic Lead	Mercury	Molyb-denum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SS-7-2.0	2	9/27/01	---	1.4	---	---	---	---	---	---	7.7	4.2	---	---	---	---	---	---	---	---	---
SS-8-1.0	1	9/27/01	---	210	---	---	---	---	---	---	44	100	---	---	---	---	---	---	---	---	---
SS-8-2.0	2	9/27/01	---	1.4	---	---	---	---	---	---	13	20	---	---	---	---	---	---	---	---	---
SS-9-1.0	1	9/27/01	---	1.7	---	---	---	---	---	---	6.6	3.5	---	---	---	---	---	---	---	---	---
SS-9-2.0	2	9/27/01	---	1.7	---	---	---	---	---	---	4.8	2.9	---	---	---	---	---	---	---	---	---
SS-10-1.0	1	9/27/01	---	<1	---	---	---	---	---	---	3.5	2.7	---	---	---	---	---	---	---	---	---
SS-10-2.0	2	9/27/01	---	4.2	---	---	---	---	---	---	3.2	2.8	---	---	---	---	---	---	---	---	---
TTLC[2]			*500*	*500*	*10000*	*75*	*100*	*2500*	*500*	*8000*	*2500*	*1000*	*---*	*20*	*3500*	*2000*	*100*	*500*	*700*	*2400*	*5000*

Notes:

1. --- = not analyzed.
2. "<" indicates compound not detected above the laboratory limit shown
3. Shaded results are greater than the Total Threshold Limit Concentration (TTLC)
4. Soil samples designated as "SHN" were collected by SHN Consulting Engineers and Geoloigsts of Eureka, California.

Appendix G
Soil Analytical Results for Halogenated Volatile Organic Compounds

SOIL ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANIC COMPOUNDS[1]

Former Rail Yard
Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	1,1,1-Trichloro-ethane	1,1,2,2-Tetra-chloroethane	1,1,2-Trichloro-2,2,2-Trifluoro-ethane	1,1,2-Trichloro-ethane	1,1-Dichloro-ethane	1,1-Dichloro-ethene	1,2-Dibromo-ethane (EDB)	1,2-Dichloro-benzene	1,2-Dichloro-ethane	1,2-Dichloro-ethene	1,2-Dichloro-propane	1,3-Dichloro-benzene	1,4-Dichloro-benzene	2-Chloroethyl Vinyl Ether	Bromodi-chloro-methane	Bromoform
B-1	2	9/1/92	<0.005[2]	<0.005	<0.02	<0.005	<0.005	<0.005	---[3]	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
B-14	2	9/1/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
B-5	2	9/1/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
B-7	2	9/1/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
PL-2	1.25	11/16/88	<0.0005	<0.0005	---	<0.0005	<0.0005	<0.0005	---	<0.0005	<0.0005	---	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005
PL-5	0.75	11/16/88	<0.0005	<0.0005	---	<0.0005	<0.0005	<0.0005	---	<0.0002	<0.0005	---	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
T13-S08	2	9/2/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
T15-S01	2	9/2/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
T17-S01	1.5	9/2/92	<0.2	<0.2	<2	<0.2	<0.2	<0.2	---	<0.2	<0.2	---	<0.2	<0.2	<0.2	<2	<0.2	<0.5
T19-S01	4	9/2/92	<0.2	<0.2	<2	<0.2	<0.2	<0.2	---	<0.2	<0.2	---	<0.2	<0.2	<0.2	<2	<0.2	<0.5
T1E-S01	1.5	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<1	<0.1	<0.05	<0.1	<1	<1	---	<0.1	<0.5
T1E-S02	3.5	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	---	<0.1	<0.05	<0.1	---	---	---	<0.1	<0.5
T1E-S03	2	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T1E-S04	3.5	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T1W-S05	1.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T1W-S06	4	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T20-S05	3	9/2/92	<0.2	<0.2	<2	<0.2	<0.2	<0.2	---	<0.5	<0.2	---	<0.2	<0.2	<0.2	<2	<0.2	<0.5
T21-S02	3.5	9/2/92	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005	---	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
T23-S01	4	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S02	2	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S05	4	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S06	2.5	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S13	3	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S14	2	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T23-S17	3	4/29/96	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T3E-S01	1.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3E-S02	4	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3E-S07	2.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3E-S08	4	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3W-S25	1.5	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<1	<0.1	<0.05	<0.1	<1	<1	---	<0.1	<0.5
T3W-S26	4	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3W-S28	2	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T3W-S29	4	7/31/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S01	2.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S02	3.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S10	3	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S11	4	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S24	3.5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T5-S25	5	8/3/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T7-S05	2.5	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T7E-S01	1.6	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T7E-S02	3.5	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T7W-S02	3.8	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T7W-S03	5.5	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T8-S01	2	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5
T8-S02	3	8/8/90	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	---	<0.1	<0.5

SOIL ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANIC COMPOUNDS[1]

Former Rail Yard
Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Depth (feet)	Date	1,1,1-Trichloro-ethane	1,1,2,2-Tetra-chloroethane	1,1,2-Trichloro-2,2,2-Trifluoro-ethane	1,1,2-Trichloro-ethane	1,1-Dichloro-ethane	1,1-Dichloro-ethene	1,2-Dibromo-ethane (EDB)	1,2-Dichloro-benzene	1,2-Dichloro-ethane	1,2-Dichloro-ethene	1,2-Dichloro-propane	1,3-Dichloro-benzene	1,4-Dichloro-benzene	2-Chloroethyl Vinyl Ether	Bromodi-chloro-methane	Bromoform
Samples Collected in 1999																		
UST Investigation																		
G-62	13	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-62	8.5	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-63	13	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-63	4.5	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-64	13.5	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-64	2.5	6/15/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-65	12.5	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-65	3	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-66	12.5	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-66	4	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-67	11.5	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-67	3	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
G-68	4	6/16/99	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---
SHN Investigation																		
SHN-WP-3	4	8/10/99	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SHN-WP-4	5	8/10/99	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SHN-WP-5	5	8/10/99	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

SOIL ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANIC COMPOUNDS[1]

Former Rail Yard
Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Bromo-methane	Carbon Tetrachloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	cis-1,2-D dichloro-ethene	cis-1,3-Dichloro-propene	Dibromo-chloro-methane	Dichloro-difluoro-methane (Freon 12)	Methylene Chloride	tert-Butyl ethyl Ether	Tetra-chloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloro-propene	Trichloro-ethene	Trichloro fluoromethane	Vinyl Chloride
B-1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
B-14	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
B-5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
B-7	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
PL-2	<0.002	<0.0005	<0.0002	<0.002	**0.0013**	<0.002	---	<0.0005	<0.0005	<0.002	**0.0011**	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002
PL-5	<0.002	<0.0005	<0.0002	<0.002	<0.0005	<0.002	---	<0.0005	<0.0005	<0.002	<0.0005	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002
T13-S08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
T15-S01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
T17-S01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<2	---	<0.2	<0.2	<0.2	<0.2	<1	<0.2
T19-S01	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<1	<2	---	<0.2	<0.2	<0.2	<0.2	<1	<0.2
T1E-S01	<0.5	<0.05	<0.5	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T1E-S02	<0.5	<0.05	<0.2	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T1E-S03	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T1E-S04	<0.5	<0.05	<0.2	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T1W-S05	<0.5	<0.05	<0.2	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T1W-S06	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T20-S05	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<2	---	<0.2	<0.2	<0.2	<0.2	<1	<0.2
T21-S02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.005	<0.02	<0.05	---	<0.005	<0.005	<0.005	<0.005	<0.02	<0.005
T23-S01	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S02	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S05	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S06	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S13	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S14	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T23-S17	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---
T3E-S01	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3E-S02	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3E-S07	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3E-S08	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3W-S25	<0.5	<0.05	<0.2	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3W-S26	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3W-S28	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T3W-S29	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T5-S01	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T5-S02	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	**0.12**	---	<0.1	<0.05	---	<0.1
T5-S10	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T5-S11	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T5-S24	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T5-S25	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T7-S05	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T7E-S01	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T7E-S02	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T7W-S02	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T7W-S03	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T8-S01	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1
T8-S02	<0.5	<0.05	<0.05	<0.5	<0.05	<0.5	---	<0.2	<0.1	---	<0.5	---	<0.05	---	<0.1	<0.05	---	<0.1

SOIL ANALYTICAL RESULTS FOR HALOGENATED VOLATILE ORGANIC COMPOUNDS[1]

Former Rail Yard
Eureka, California

Results in milligrams per kilogram (mg/kg)

Sample Location	Bromo-methane	Carbon Tetrachloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	cis-1,2-D dichloro-ethene	cis-1,3-Dichloro-propene	Dibromo-chloro-methane	Dichloro-difluoro-methane (Freon 12)	Methylene Chloride	tert-Butyl ethyl Ether	Tetra-chloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloro-propene	Trichloro-ethene	Trichloro fluoromethane	Vinyl Chloride
Samples Collected in 1999																		
UST Investigation																		
G-62	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-62	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-63	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-63	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-64	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-64	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-65	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-65	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-66	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-66	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-67	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-67	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
G-68	---	---	---	---	---	---	---	<0.005	---	---	---	---	---	---	---	---	---	---
SHN Investigation																		
SHN-WP-3	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---
SHN-WP-4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---
SHN-WP-5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---

Notes:

1. All compounds were analyzed in accordance with EPA Methods 8010, 8020, or 8240. See Attachment C for a complete listing of analytical methods and results.
2. "<" indicates compound not detected above the laboratory limit shown.
3. --- = not analyzed

Bold results indicate the analyte was detected.

Appendix H
Humboldt Baykeeper Site
Inspection Data

Humboldt Baykeeper Site Inspection Data

Sediment Samples July 30, 2007
former Eureka Railyard

Sample ID	S-1 (EASTERN DITCH)		S-4 (STATION C)		S-5 (STATION D)		S-6 (STATION B)		S-7 (WESTERN DITCH)	
	HB	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**
Metals - mg/kg										
Antimony	2.3	<2.5	3.9	<2.5	3.9	<2.5	1.8	<2.5	2.9	<2.5
Arsenic	19.1	13.0	30.1	9.5	695.0	160	37.5	14	107	30
Barium	90.7	68.0	296.0	120	460.0	100	140.0	77	106	46
Beryllium	0.25	<0.50	0.48	<0.50	0.41	<0.50	0.3	<0.50	0.5	<0.50
Cadmium	2.3	2.2	4.7	2.8	1.2	1.1	0.89	<0.50	1	0.55
Chromium	114.0	41	81.0	42	54.8	14	64.1	35	73.9	35
Cobalt	NA	48	NA	8	NA	13	NA	5.3	NA	7.3
Copper	57.1	48	154.0	71	61.6	12	64.7	37	84.2	38
Lead	149.0	150	145.0	93	97.2	24	154.0	82	111	47
Mercury	0.22	0.22	0.21	0.17	0.21	<0.10	0.17	0.13	0.24	0.12
Molybdenum	1	1.3	5.90	3.1	6.4	2.2	3.20	2.2	2	1
Nickel	62.9	44	81.5	43	101.0	28	64.3	35	85.1	36
Selenium	0.4	<1.0	1.1	<1.0	0.9	<1.0	0.37	<1.0	0.63	<1.0
Silver	0.14	<0.50	0.36	<0.50	0.25 **B**	<0.50	0.18	<0.50	0.26	<0.50
Thallium	0.94 **B**	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	0.13 **B**	<1.0
Vanadium	31	32	62.6	31	58.7	13	47.7	28	66.3	33
Zinc	393.0	440	1030.0	710	319.0	99	206.0	120	236	110
PCBs - ug/kg										
Total PCBs	120	Aroclor=90	ND	ND	ND	ND	63.0	ND	NA	NA
Pesticides - ug/kg										
4-4'- DDT	6.7	ND	NA	ND	5.2 **JPG**	ND	17 **J**	ND	NA	NA
4,4'-DDE	ND	ND	NA	ND	ND	ND	200.0	ND	NA	NA

Humboldt Baykeeper Site Inspection Data

Sediment Samples July 30, 2007
former Eureka Railyard

Sample ID	S-1 (EASTERN DITCH)		S-4 (STATION C)		S-5 (STATION D)		S-6 (STATION B)		S-7 (WESTERN DITCH)	
	HB	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**	**HB**	**CUE VI**
Dioxins/Furans, pg/g										
2,3,7,8-TCDD as TEQs	216.6	195	NA	NA	593	140.00	402.3	212	NA	NA
Total Petroleum Hydrocarbons - mg/kg										
TPH - MO	ND **B**	690.0	3700 **G**	180.0	380 **G**	43.0	ND	1400.0	110 **G**	19
Volatile Organic Compounds - ug/kg										
Tetrachloroethene	11.00	ND	ND	NA	ND	ND	ND	ND	ND	NA
Toluene	43.00	ND	ND	NA	240.0	ND	ND	ND	ND	NA
Semi Volatile Organic Compounds, ug/kg										
Benzaldehyde	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
4-Methylphenol	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Napthalene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Caprolactam	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Carbazole	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND

Humboldt Baykeeper Site Inspection Data

Sediment Samples July 30, 2007
former Eureka Railyard

Sample ID	S-1 (EASTERN DITCH)		S-4 (STATION C)		S-5 (STATION D)		S-6 (STATION B)		S-7 (WESTERN DITCH)	
	HB	CUE VI	HB	CUE VI	HB	CUE VI	HB	CUE VI	HB	CUE VI
Di-n-octylphthalate	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Benzo(b)fluroanthene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND

Humboldt Baykeeper Site Inspection Data

Sediment Samples January 10, 2008
Former Eureka Railyard

Sample ID	Sed-1		Sed-2		Sed-3		Sed-4	
	HB	CUE VI	HB	CUE VI	HB	CUE VI	HB	CUE VI
Metals - mg/kg								
Antimony	0.13 **B**	<0.273	0.57	0.41	ND	<0.37	ND	<0.28
Arsenic	5.50	5.60	16.60	11.9	7.20	6.1	4.60	5.1
Barium	40.40	38.60	80.10	66.9	61.30	58.4	27.00	29.5
Beryllium	0.24	0.25	0.34	0.25	0.38	0.36	0.23	0.25
Cadmium	0.31	0.32	1.00	0.79	0.28	0.28	.099 **B**	<0.14
Chromium	47.30	45.60	66.80	52.2	68.10	61.4	35.20	40
Cobalt	8.50	8.70	9.90	8.2	10.30	9.2	4.30	4.6
Copper	17.70	18.30	77.00	58	36.00	33.4	13.60	15.6
Lead	21.60	21.20	170.00	114	33.10	33.9	42.10	49.5
Mercury	0.39	0.08	0.18	0.12	0.11	0.19	.037 **B**	<0.056
Molybdenum	1.40	1.40	4.00	3.2	2.20	1.7	0.42	0.46
Nickel	54.30	54.60	60.80	47.3	70.30	64.6	27.50	30.6
Selenium	0.35	0.36	0.58	0.5	0.53	0.51	0.25 **B**	<0.28
Silver	0.095 **B**	<0.14	0.35	0.24	0.17 **B**	<0.18	.045 **B**	<0.14
Thallium	0.081 **B**	<0.14	ND	<0.17	0.097 **B**	<0.18	ND	<0.14
Vanadium	29.40	31.70	43.60	35.1	44.50	41	27.30	28.5
Zinc	105.00	120.00	304.00	244	118.00	110	64.90	74.1

Humboldt Baykeeper Site Inspection Data

Sediment Samples January 10, 2008
Former Eureka Railyard

Sample ID	Sed-1		Sed-2		Sed-3		Sed-4	
	HB	CUE VI	HB	CUE VI	HB	CUE VI	HB	CUE VI
Dioxins/Furans, pg/g								
2,3,7,8-TCDD as TEQs	20.78	16.08	1027.44	106.40	40.20	26.09	28.26	17.80

Humboldt Baykeeper Site Inspection Data

Water Samples January 10, 2008
former Eureka Railyard

Sample ID	WTR-2			WTR-3		
	HB TOTAL	CUE VI TOTAL	CUE VI Dissolved	HB TOTAL	CUE VI TOTAL	CUE VI Dissolved
Metals - µg/L						
Antimony	0.5 **J**	<5.0	<5.0	0.55 **J**	<5.0	<5.0
Arsenic	5.6	<5.0	6.2	2.9000	<5.0	<5.0
Barium	56	60	51	90.000	92	85
Beryllium	ND	<1.0	<1.0	ND	<1.0	<1.0
Cadmium	ND	<5.0	<5.0	ND	<5.0	<5.0
Calcium (mg/L)	44.8	45	<5.0	46	48	NA
Chromium	ND	<5.0	<5.0	2.0	<5.0	<5.0
Cobalt	0.83 **J**	<5.0	<5.0	0.95 **J**	<5.0	<5.0
Copper	6.4	8.1	5.7	9.8	11	9.8
Hardness (mg/L)	132	130.0	NA	152	160	NA
Lead	0.7 **J**	<5.0	<5.0	1.6	<5.0	<5.0
Magnesium (mg/L)	4.8	4.6	<5.0	9.1	8.6	NA
Mercury	ND	<1.0	NA	ND	<1.0	NA
Molybdenum	ND	<5.0	<5.0	1.4 **J**	<5.0	<5.0
Nickel	2.8	<5.0	100	12	14	22
Selenium	ND	<10	<10	ND	<10	<10
Silver	ND	<5.0	<5.0	ND	<5.0	<5.0
Thallium	ND	<5.0	<5.0	ND	<5.0	<5.0
Vanadium	ND	<5.0	<5.0	ND	<5.0	<5.0
Zinc	24	26	59	4.1 **J**	<10	<10
Other - µg/L						
TSS	NA	2.0	NA	NA	2.4	NA

NOTE: Adapted from table prepared by Humboldt Baykeeper
B - Analyte found in associated blank and sample
NA - Not Analyzed
ND - Not Detected
J - Estimated result, Result is less than the Reporting Limit
PG - The percent difference between the original and confirmation analyses is greater than 40%
G - Undefined in original

Appendix I
Historic Ground Water
Analytical Results

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-1A	9/3/92	ND[8]	---[9]	<0.05	<0.5	—	—	—	—	<0.02	<0.005	<0.02
MW-1A	5/20/93	ND	—	<0.05	**0.22**	—	—	—	—	<0.025	<0.04	<0.02
MW-1A	6/29/93	—	—	—	**0.14**	—	—	—	—	—	—	—
MW-1A	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-1A	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-1A	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-1A	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-1A	03/05/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-1A	11/19/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-1A	05/19/99	ND	—	<0.005	<0.05	—	—	—	—	**0.028**	<0.015	**0.02**
MW-1A	06/27/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.007**	<0.005	<0.005	**0.008**
MW-1A	09/25/01	<0.0005	<0.001	<0.05	<0.05	<0.250	—	<0.005	**0.01**	<0.005	<0.015	0.01U
MW-1A	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-1A	01/15/02	—	—	—	<0.05	<0.300	<0.300	<0.001	**0.0079**	**0.001**	<0.001	<0.01
MW-1A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	<0.001	**0.0078**	**<0.001**	<0.001	<0.01
MW-1A	08/27/02	—	—	—	<0.05	<0.150	—	<0.005	—	—	—	—
MW-1A	03/12/03	—	—	—	<0.05	<0.5	<0.05	**0.00352J+**	—	—	—	—
MW-1A	08/27/03	—	—	—	**0.064**[10]	<0.5	0.05UJ	0.0010UJ	—	—	—	—
MW-2A	9/3/92	ND	—	<0.05	**0.53**	—	—	—	—	<0.02	**0.18**	<0.02
MW-2A Dup	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	<0.02
MW-2A	5/20/93	ND	—	<0.05	**0.42**	—	—	—	—	<0.025	<0.04	<0.02
MW-2A	6/29/93	—	—	—	**0.31**[11]	—	—	—	—	—	—	—
MW-2A	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-2A	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2A	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-2A	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2A	07/29/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-2A	3/5/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2A	11/19/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2A	05/19/99	ND	—	<0.05	<0.05	—	—	—	—	<0.005	<0.015	<0.005
MW-2A	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.011**	<0.005	<0.005	<0.005

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-2A	09/26/01	—	<0.001	<0.05	<0.057	<0.284	—	<0.005	**0.019**	0.008U	<0.015	0.02U
MW-2A	12/17/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-2A	01/15/02	—	—	—	<0.05	<0.300	<0.300	**0.0024**	**0.014**	<0.001	<0.001	**0.011J**
MW-2A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0015**	**0.015**	<0.001	<0.001	<0.01
MW-2A	08/27/02	—	—	—	<0.05	<0.150	—	<0.005	—	—	—	—
MW-2A	03/12/03	—	—	—	0.05UJ	<0.5	<0.05	0.001U	—	—	—	—
MW-2A	08/27/03	—	—	—	<0.05	<0.5	**0.240J[12]**	**0.0031J-**	—	—	—	—
MW-3A	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	**0.17**
MW-3A	5/20/93	ND	—	<0.05	**0.31**	—	—	—	—	<0.025	<0.04	<0.02
MW-3A	6/29/93	—	—	—	**0.21**	—	—	—	—	—	—	—
MW-3A Dup	6/29/93	—	—	—	**0.24**	—	—	—	—	—	—	—
MW-3A	9/20/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-3A Dup	9/20/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-3A	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-3A	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-3A Dup	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-3A	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-3A	3/5/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-3A	11/20/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-3A	05/20/99	ND	—	<0.005	**0.05**	—	—	—	—	<0.005	<0.015	<0.005
MW-3A	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.023**	<0.005	<0.005	<0.005
MW-3A	09/26/01	—	<0.001	<0.05	<0.05	<0.250	—	<0.005	**0.025**	<0.005	<0.015	0.008U
MW-3A	01/15/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.015**	**0.025**	**0.0032**	<0.001	<0.01
MW-3A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.021**	**0.015**	<0.001	<0.001	**0.011**
MW-3A	08/27/02	—	—	—	<0.05	<0.150	—	<0.005	—	—	—	—
MW-3A Dup	08/27/02	—	—	—	—	—	—	<0.005	—	—	—	—
MW-3A	03/12/03	—	—	—	0.05UJ	<0.5	<0.05	**0.0226**	—	—	—	—
MW-3A Dup	03/12/03	—	—	—	—	—	—	**0.0207**	—	—	—	—
MW-3A	08/27/03	—	—	—	<0.05	<0.5	0.05UJ	**0.011J-**	—	—	—	—
MW-3A Dup	08/27/03	—	—	—	—	—	—	**0.009J-**	—	—	—	—

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-4A	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	**0.006**	<0.02
MW-4A	5/20/93	ND	—	<0.05	**0.16**	—	—	—	—	<0.025	<0.04	<0.02
MW-4A	6/29/93	—	—	—	**0.13**	—	—	—	—	---	---	---
MW-4A	9/20/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-4A	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-4A	4/26/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-4A	07/29/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-4A	3/5/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-4A	11/20/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-4A	05/19/99	ND	—	<0.05	<0.05	—	—	—	—	<0.005	<0.015	**0.007**
MW-4A	06/28/01	0.0016U[13]	ND	<0.05	<0.05	<0.175	—	<0.005	**0.014**	<0.005	<0.005	**0.010**
MW-4A	09/25/01	<0.0005	<0.001	<0.05	**0.066**	<0.250	—	<0.005	**0.015**	<0.005	<0.015	0.009U
MW-4A	01/14/02	<0.0005	**0.0021**[14]	<0.05	<0.05	<0.300	<0.300	<0.001	**0.011**	**0.0054**	<0.001	**0.043J**
MW-4A	03/12/02	<0.0005	**0.0015**[14]	<0.05	<0.05	<0.300	<0.300	<0.001	**0.014**	<0.001	<0.001	<0.01
MW-4A	08/27/02	—	—	—	<0.056	<0.170	—	<0.005	—	—	—	—
MW-4A	03/12/03	—	—	—	0.05UJ	<0.5	<0.05	0.001U	—	—	—	—
MW-4A	08/27/03	—	—	—	<0.05	<0.5	0.05UJ	**0.0028J-**	—	—	—	—
MW-5A	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	**0.05**
MW-5A	5/20/93	ND	—	<0.05	**0.092**	—	—	—	—	<0.025	<0.04	<0.02
MW-5A	6/29/93	—	—	—	**0.06**	—	—	—	—	—	—	—
MW-5A	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.03**
MW-5A	07/29/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-5A	3/5/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-5A	11/20/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-5A	12/17/01	<0.0005	ND	<0.05	—	—	—	—	—	---	---	---
MW-5A	01/14/02	—	—	—	<0.05	<0.300	<0.300	**0.0013**	**0.043**	**0.0063**	<0.001	**0.034J**
MW-5A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	0.001U	**0.031**	**0.0028**	<0.001	**0.015**
MW-6A	5/20/93	ND	—	<0.05	**0.091**	—	—	—	—	<0.025	<0.04	<0.02
MW-6A	6/29/93	—	—	—	<0.05	—	—	—	—	—	—	—
MW-6A	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.03**
MW-6A	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-6A	05/19/99	ND	—	<0.05	<0.05	—	—	—	—	<0.005	<0.015	**0.008**
MW-6A	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-6A	01/15/02	—	—	—	<0.05	<0.300	<0.300	**0.002**	**0.02**	**0.0018**	<0.001	<0.01
MW-6A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.021**	**0.016**	<0.001	<0.001	**0.010**
MW-7A	5/20/93	ND	—	<0.05	**0.83**	—	—	—	—	<0.025	<0.04	<0.02
MW-7A Dup	5/20/93	ND	—	**0.06**	**1**	—	—	—	—	<0.025	<0.04	<0.02
MW-7A	6/29/93	—	—	---	**3.9**[11]	—	—	—	—	—	—	—
MW-7A	9/20/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-7A	11/14/95	ND	—	<0.05	**0.94**	—	—	—	—	<0.01	<0.04	<0.01
MW-7A Dup	11/14/95	ND	—	<0.05	**1.80**	—	—	—	—	<0.01	<0.04	**0.01**
MW-7A	4/26/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-7A	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-7A Dup	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-7A	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-7A Dup	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-7A	11/20/97	ND	—	**0.06**	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-7A Dup	11/20/97	ND	—	<0.05	**0.08**	—	—	—	—	<0.01	<0.04	**0.03**
MW-7A	05/20/99	ND	—	<0.05	**0.110**	—	—	—	—	<0.005	<0.015	<0.005
MW-7A Dup	05/20/99	ND	—	<0.05	**0.100**	—	—	—	—	<0.005	<0.015	**0.009**
MW-7A	06/28/01	0.0014U[13]	ND	<0.05	**0.078**	<0.175	—	<0.005	<0.005	<0.005	<0.005	<0.005
MW-7A Dup	06/28/01	0.0015U[13]	ND	<0.05	**0.093**	<0.175	—	<0.005	<0.005	<0.005	<0.005	<0.005
MW-7A	09/25/01	<0.0005	<0.001	**0.057**	**0.34**	**0.47**	—	<0.005	**0.027**	<0.005	<0.015	0.012U
MW-7A	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-7A Dup	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-7A	01/15/02	—	—	—	<0.05	<0.300	<0.300	<0.001	**0.018**	<0.001	<0.001	<0.01
MW-7A Dup	01/15/02	—	—	—	<0.05	<0.300	<0.300	<0.001	**0.022**	**0.0011**	<0.001	**0.032J**
MW-7A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	<0.001	**0.020**	<0.001	<0.001	<0.01
MW-7A Dup	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	<0.001	**0.019**	<0.001	<0.001	<0.01
MW-7A	08/27/02	—	—	—	<0.05	<0.150	—	<0.005	—	—	—	—
MW-7A	03/12/03	—	—	—	<0.05	<0.5	<0.05	0.001U	—	—	—	—
MW-7A	08/27/03	—	—	—	<0.05	<0.5	**0.660J**[12]	**0.0015J-**	—	—	—	—

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
P-8A	05/19/99	ND	—	**0.16**	**0.280**	—	—	—	—	<0.005	<0.015	**0.009**
P-8A	06/28/01	<0.00035	ND	**0.057**[10]	**0.150**	<0.175	—	<0.005	**0.028**	<0.005	<0.005	**0.009**
P-8A Dup	09/25/01	<0.0005	<0.001	<0.05	**0.16**	<0.250	—	<0.005	**0.017**	<0.005	<0.015	0.009U
P-8A	12/18/01	<0.0005	ND	<0.05	**0.17**	<0.250	—	<0.005	**0.015**	<0.005	<0.015	0.013U
P-8A Dup	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
P-8A	01/15/02	—	—	—	—	—	—	—	—	—	—	—
P-8A Dup	01/15/02	—	—	—	<0.05	<0.300	<0.300	**0.0035**	**0.023**	<0.001	<0.001	**0.029J**
P-8A	3/12/02	<0.0005	ND	<0.05	**0.065**[10]	<0.300	<0.300	**0.0039**	**0.021**	**0.0031**	<0.001	**0.013J**
P-8A Dup	3/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0020**	**0.018**	<0.001	<0.001	<0.01
P-8A	08/27/02	—	—	—	**0.078**[10]	<0.300	<0.300	**0.0022**	**0.023**	<0.001	<0.001	<0.01
P-8A Dup	08/27/02	—	—	—	<0.05	<0.150	---	<0.005	—	—	—	—
P-8A	03/12/03	—	—	—	<0.05	<0.150	---	<0.005	—	—	—	—
P-8A Dup	03/12/03	—	—	—	**0.053J**[10]	<0.5	<0.05	0.001U	—	—	—	—
P-8A	08/27/03	—	—	—	**0.120J**[10]	<0.5	<0.05	0.001U	—	—	—	—
P-8A Dup	08/27/03	—	—	—	<0.05	<0.5	**0.170J**	0.0010UJ[12]	—	—	—	—
P-9A	05/19/99	ND	---	<0.05	<0.05	<0.5	**0.410J**	0.0010UJ[12]	—	—	—	—
P-9A	06/28/01	<0.00035	ND	<0.05	**0.07**	—	—	—	—	<0.005	<0.015	**0.022**
P-9A	09/26/01	—	<0.001	<0.05	**0.130**[10]	<0.175	—	<0.005	**0.12**	<0.005	<0.005	**0.012**
P-9A Dup	09/26/01	—	<0.001	<0.05	**0.071**	<0.284	—	<0.005	**0.19**	0.012U/<0.005[15]	<0.015	0.12U
P-9A	12/18/01	<0.0005	ND	<0.05	**0.069**	<0.284	—	<0.005	**0.19**	0.13R/<0.005[15]	<0.015	0.11U
P-9A	01/15/02	—	—	—	—	—	—	—	—	—	—	—
P-9A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0018**	**0.079**	**0.008**	<0.001	**0.076J**
P-9A	08/27/02	—	—	—	<0.05	<0.300	<0.300	<0.001	**0.014**	<0.001	<0.001	<0.01
P-9A	03/12/03	—	—	—	**0.085**[10]	**0.19**	—	<0.005	—	—	—	—
MW-10A	4/26/96	ND	—	<0.05	**0.130J**[10]	**<0.5**	<0.05	0.001U	—	—	—	—
MW-10A Dup	4/26/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.05**
MW-10A	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-10A	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
										<0.01	<0.04	<0.01

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-10A	11/20/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.03**
MW-10A	05/20/99	ND	—	<0.05	**0.06**	—	—	—	—	<0.005	<0.015	**0.006**
MW-10A	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.016**	<0.005	<0.005	<0.005
MW-10A	09/25/01	<0.0005	<0.001	<0.05	**0.10**	<0.250	—	<0.005	**0.018**	<0.005	<0.015	0.008U
MW-10A	01/15/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0012**	**0.015**	<0.001	<0.001	<0.01
MW-10A	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	<0.001	**0.01**	<0.001	<0.001	<0.01
MW-10A	08/27/02	—	—	—	<0.05	<0.150	—	<0.005	—	—	—	—
MW-10A	03/12/03	—	—	—	0.05UJ	<0.5	<0.05	0.001U	—	—	—	—
MW-10A	08/27/03	—	—	—	<0.05	<0.5	**0.220J**[12]	**0.0037J-**	—	—	—	—
MW-11A	07/29/00	<0.0005	ND	**0.071**	<0.05	<0.250	—	—	—	—	—	—
MW-11A	11/14/00	<0.0005	ND	<0.05	**0.170**	<0.250	—	—	—	—	—	—
MW-11A Dup	11/14/00	<0.0005	ND	<0.05	**0.140**	<0.250	—	—	—	—	—	—
MW-11A	03/06/01	<0.0005	ND	<0.05	**0.021**	<0.250	—	—	—	—	—	—
MW-11A	05/30/01	<0.0005	ND	<0.05	<0.05	<0.250	—	—	—	—	—	—
MW-11A	06/27/01	<0.00035	ND	<0.05	**0.073**	<0.175	—	<0.005	**0.020**	<0.005	<0.005	<0.005
MW-11A	09/25/01	<0.0005	<0.001	<0.05	**0.084**	<0.250	—	<0.005	**0.013**	<0.005	<0.015	0.024U
MW-11A	12/18/01	—	—	<0.05	---	—	—	—	—	—	—	—
MW-11A	01/15/02	—	—	—	**0.13**[10]	—	—	—	—	—	—	—
MW-11A	08/27/02	—	—	—	**0.15**[10]	—	—	—	—	—	—	—
MW-11A Dup	08/27/02	—	—	—	**0.10**[10]	—	—	—	—	—	—	—
MW-11A	03/12/03	—	—	—	**0.073**[10]	—	—	—	—	—	—	—
MW-11A Dup	03/12/03	—	—	—	**0.200J**[10]	—	—	—	—	—	—	—
MW-11A	08/27/03	—	—	—	<0.05	<0.05	0.05UJ	—	—	—	—	—
MW-11A Dup	08/27/03	—	—	—	<0.05	<0.5	0.05UJ	—	—	—	—	—
MW-12A	07/31/00	—	—	—	—	—	—	<0.005	—	—	—	—
MW-12A	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	<0.005	<0.005	<0.005	<0.005
MW-12A	09/25/01	<0.0005	<0.001	<0.05	**0.110**	<0.250	—	<0.005	**0.014**	0.006U	<0.015	0.012U
MW-12A	01/15/02	<0.0005	ND	<0.05	**<0.05**	<0.300	<0.300	0.0021	**0.021**	<0.001	<0.001	**0.014J**
MW-12A	03/12/02	<0.0005	ND	<0.05	**<0.05**	<0.300	<0.300	0.0029	**0.022**	<0.001	<0.001	**0.012**

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-12A	08/27/03	—	—	—	<0.05	<0.5	0.05UJ	**0.0018J-**	—	—	—	—
MW-12A Dup	08/27/03	---	---	---	—	—	—	0.0010UJ	—	—	—	—
MW-1B	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	**0.05**
MW-1B	5/20/93	ND	—	<0.05	**0.16**	—	—	—	—	<0.025	<0.04	**0.0702**
MW-1B	6/29/93	—	—	—	**0.08**	—	—	—	—	—	—	—
MW-1B	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	**0.02**	<0.04	**0.02**
MW-1B Dup	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	**0.01**	<0.04	**0.02**
MW-1B	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-1B	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.03**
MW-1B	07/30/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-1B[16]	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-1B	11/19/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.03**
MW-1B	05/19/99	ND	—	<0.05	<0.05	—	—	—	—	<0.005	<0.015	<0.005
MW-1B	06/27/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	<0.005	<0.005	<0.005	**0.008**
MW-1B	09/25/01	<0.0005	<0.001	<0.05	<0.05	<0.250	—	<0.005	**0.006**	<0.005	<0.015	0.01U
MW-1B	12/18/01	<0.0005	ND	<0.05	—	—	—	—	—	—	—	—
MW-1B	01/15/02	—	—	—	<0.05	<0.300	<0.300	**0.0086**	**0.0099**	**0.0058**	<0.001	<0.01
MW-1B	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0082**	**0.0076**	**0.0027**	<0.001	<0.01
MW-1B	03/12/03	—	—	—	<0.05	<0.5	<0.05	**0.00711J+**	—	—	—	—
MW-2B	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	<0.02
MW-2B	5/20/93	ND	—	<0.05	**0.078**	—	—	—	—	<0.025	<0.04	<0.02
MW-2B	6/29/93	—	—	—	<0.05	—	—	—	—	—	—	—
MW-2B	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2B Dup	9/19/95	ND	—	—	—	—	—	—	—	—	—	—
MW-2B	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-2B	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-2B	07/29/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-2B[16]	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-2B	11/19/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well I.D.	Date	Total BTEX[1]	PNAs[2]	TPHg[3]	TPHd[4]	TPHmo[5]	TPHb[6]	Dissolved Metals[7]				
								Arsenic	Barium	Copper	Lead	Zinc
MW-2B	05/19/99	ND	—	<0.05	<0.05	—	—	—	—	<0.005	<0.015	<0.005
MW-2B	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.032**	<0.005	<0.005	<0.005
MW-2B	09/26/01	—	<0.001	<0.05	<0.05	<0.250	—	<0.005	**0.021**	0.79R	<0.015	0.02U
MW-2B	12/17/01	—	ND	—	—	—	—	—	—	---	---	---
MW-2B	01/15/02	<0.0005	—	<0.05	<0.05	<0.300	<0.300	**0.003**	**0.0029**	**0.0028**	<0.001	<0.01
MW-2B	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0027**	**0.027**	**0.0012**	<0.001	**0.011**
MW-2B	03/12/03	—	—	—	0.05UJ	<0.5	<0.05	**0.00395J+**	—	—	—	—
MW-3B	9/3/92	ND	—	<0.05	<0.5	—	—	—	—	<0.02	<0.005	<0.02
MW-3B	5/20/93	ND	—	<0.05	**0.15**	—	—	—	—	<0.025	<0.04	<0.02
MW-3B	06/29/93	—	—	---	<0.05	—	—	—	—	—	—	—
MW-3B	9/19/95	ND	—	<0.05	<0.05	—	—	—	—	**0.01**	<0.04	**0.02**
MW-3B	11/14/95	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	<0.01
MW-3B	4/25/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-3B	07/29/96	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.02**
MW-3B[16]	3/6/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-3B	11/19/97	ND	—	<0.05	<0.05	—	—	—	—	<0.01	<0.04	**0.01**
MW-3B	05/20/99	ND	—	<0.05	<0.05	—	—	—	—	**0.009**	<0.015	**0.019**
MW-3B	06/28/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	**0.006**	<0.005	<0.005	**0.006**
MW-3B	09/26/01	—	<0.001	<0.05	<0.05	<0.250	—	<0.005	**0.008**	0.015U	<0.015	0.013U
MW-3B	12/17/01	<0.0005	ND	—	—	—	—	—	—	—	—	—
MW-3B	01/15/02	—	—	<0.05	<0.05	<0.300	<0.300	**0.0044**	**0.009**	**0.0014**	<0.001	<0.01
MW-3B	03/12/02	<0.0005	ND	<0.05	<0.05	<0.300	<0.300	**0.0044**	**0.0085**	<0.001	<0.001	**0.011**
MW-3B	03/12/03	—	—	—	<0.05	<0.5	<0.05	**0.00606J+**	—	—	—	—
MW-11B	07/29/00	<0.0005	ND	<0.05	<0.05	<0.250	—	—	—	—	—	—
MW-11B	11/14/00	<0.0005	ND	<0.05	<0.05	<0.250	—	—	—	—	—	—
MW-11B	03/06/01	<0.0005	ND	<0.05	<0.05	<0.250	—	—	—	—	—	—
MW-11B	05/30/01	<0.0005	ND	<0.05	<0.05	<0.250	—	—	—	—	—	—
MW-11B	06/27/01	<0.00035	ND	<0.05	<0.05	<0.175	—	<0.005	<0.005	<0.005	<0.005	<0.005
MW-11B	09/25/01	<0.0005	<0.001	<0.05	<0.05	<0.250	—	<0.005	<0.005	<0.005	<0.015	0.012U

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former Railroad Yard

Eureka, California

Notes:

1. Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed in accordance with EPA Methods 8020, 8240, or 8260.
2. Polynuclear aromatic hydrocarbons (PNAs) analyzed in accordance with EPA 8270.
3. Total Petroleum Hydrocarbons (TPH) quantified against a gasoline standard (TPHg) in accordance with Modified EPA Method 8015.
4. TPH quantified against a diesel standard (TPHd) in accordance with Modified EPA Method 8015. All samples collected for TPHd analysis since September 1994 have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
5. TPH quantified against a motor oil standard (TPHmo) in accordance with Modified EPA Method 8015. All samples collected for TPHd analysis since September 1995 have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
6. TPH quantified against a Bunker C standard (TPHb) in accordance with Modified EPA Method 8015 following a silica gel cleanup by EPA Method 3630.
7. Dissolved metals (passed through a 0.45-micron filter in the field) analyzed in accordance with EPA Method Series 6010B.
8. ND = none of these compounds were detected above the laboratory reporting limits.
9. --- = not analyzed.
10. Results within quantitation range; chromatographic pattern not typical of fuel.
11. In June 1993, TPHd samples from wells MW-2A and MW-7A were split between three laboratories (Friedman and Bruya, Anametrix, and Clayton Environmental). Only Friedman and Bruya results are presented here. TPHd results from Anametrix and Clayton for MW-2A and 7A were 0.34 and 2, and 1.3 and 5.2 mg/l, respectively.
12. Aged Bunker C. Quantitation for this analyte is based on the response factor of diesel.
13. Value indicated is for toluene. Benzene, ethylbenzene, and xylenes were not detected above their respective reporting limits.
14. Acenaphthalene detected at the concentration sown. All other compounds below laboratory reporting limit of 0.00096 mg/L.
15. Copper was re-analyzed due to discrepancies in value between primary and duplicate samples. The initial detection value was likely due to laboratory error.
16. In March 1997, samples from wells MW-1B, MW-2B, and MW-3B were also analyzed for hexavalent chromium in accordance with EPA Method 7196. Hexavalent chromium was not detected above the laboratory reporting limit of 0.010 mg/L in any of the three samples.

Bold results indicate the analyte was detected.

DATA QUALIFIER DEFINITION

"U" indicates compound was not detected above the quantitation limit shown.
"J" indicates the reported concentration is an estimate only.
"R" indicates the sample results are rejected according to quality control criteria.
"UJ" indicates that the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
"J+" indicates that the result is an estimated quantity, but the result may be biased high.
"J-" indicates that the result is an estimated quantity, but the result may be biased low.

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Former General Petroleum Site

Eureka, California

Concentrations in milligrams per liter (mg/L)

Well ID	Date Sampled	TPHg[1]	TPHd[1,2]	TPHmo[1,2]	TPHb[1,2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]	Fuel Oxygenates[4]	PNAs[5]
MW-13A	03/08/01	0.410	0.130[6]	<0.250[7]	--[8]	0.031	0.0012	0.022	0.017	<0.005 - <0.020	<0.005
	05/31/01	1.100	0.810[6]	<0.250	--	0.043	0.0083	0.057	0.037	<0.005 - <0.020	Note 9
	01/14/02	0.150	0.067[6]	--	--	0.0032	<0.0005	0.0075	0.0033	--	--
	3/13/02	0.110	<0.050	--	--	0.0039	<0.0005	0.0048	<0.0005	--	<0.00097
	08/28/02	2.800	0.540	--	--	0.050	<0.0050	0.062	0.019	--	--
	03/12/03	0.1806	<0.05	<0.5	<0.05	0.0069	<0.0005	0.0057	<0.0005	--	--
	08/28/03	1.900	0.510U[6]	<0.5	<0.05	0.066	0.018	0.064	0.030	--	--
	08/28/03	1.700	0.510U[6]	<0.5	<0.05	0.059	0.015	0.062	0.025	--	--
MW-13B	07/31/00	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.010
	11/14/00	0.400	0.290[6]	<0.250	--	0.0053	0.00070	0.0012	0.0025	<0.005 - <0.020	<0.010
	12/18/00	0.170	0.160[6]	<0.250	--	0.0024	0.00098	0.00087	0.0032	<0.005 - <0.020	<0.010
	03/07/01	0.380	0.120[6]	<0.250	--	0.0044	0.00085	0.00067	0.0025	<0.005 - <0.020	<0.005
	3/7/01[10]	0.410	0.120[6]	<0.250	--	0.0046	0.00082	0.00078	0.0023	<0.005 - <0.020	<0.005
	05/30/01	0.180[6]	0.088[6]	<0.250	--	0.0019	<0.0005	0.00070	<0.0005	<0.005 - <0.020	<0.005
	5/30/01[10]	0.180	0.088[6]	<0.250	--	0.0019	<0.0005	0.00099	0.00056	<0.005 - <0.020	<0.005
	12/17/01	0.720	0.065	--	--	0.0035J[11]	<0.0005	0.0026	0.0023	--	<0.00096
	01/14/02	0.340	0.052	--	--	0.0053J	0.0069	0.0045	0.0042	--	--
	3/13/02	0.430J	<0.050	--	--	0.0077J	0.0083J	<0.0005	0.0054J	--	<0.00097
	08/28/02	<0.050	<0.050	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--
	03/12/03	0.3706	<0.05	<0.5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	--	--
	08/28/03	<0.05	<0.050	<0.5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	--	--
MW-14B	07/31/00	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.010
	11/14/00	<0.050	<0.050	<0.250	--	<0.005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.010
	03/07/01	<0.050	<0.050	<0.250	--	<0.005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.005
	05/30/01	<0.050	<0.050	<0.250	--	<0.005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.005
	12/17/01	<0.050	<0.050	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	<0.00096
	3/13/02	<0.050	<0.050	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	<0.00097
	08/28/02	<0.050	<0.050	--	--	<0.0005	0.0005	<0.0005	<0.0005	--	--
	03/12/03	--	<0.05	<0.5	<0.05	<0.0005	0.0005	<0.0005	<0.0005	--	--
	08/28/03	<0.050	0.059U[6]	<0.5	<0.5	<0.0005	0.0005	<0.0005	<0.0005	--	--
MW-15B	07/31/00	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.010
	11/14/00	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.010
	03/07/01	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.005
	05/30/01	<0.050	<0.050	<0.250	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.005 - <0.020	<0.005
	12/17/01	<0.050	0.050UJ	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	<0.00096
	3/13/02	<0.050	<0.050	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	<0.00099
	08/28/02	<0.050	<0.050	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--
	03/12/03	--	<0.05	<0.5	<0.05	<0.0005	0.0005	<0.0005	<0.0005	--	--
	08/28/03	<0.050	0.050UJ	0.5UJ	0.05UJ	<0.0005	0.0005	<0.0005	<0.0005	--	--

Notes:

1. TPH analyzed by EPA Method 8015M.
2. Analyzed following a silica gel cleanup (EPA Method 3630B modified).
3. BTEX analyzed by EPA Method 8020 or 8021B.
4. Fuel oxygenates by EPA Method 8260B include di-isopropyl ether, ethyl-t-butyl ether, methyl-t-butyl ether, tert-amyl methyl ether, and tert-butanol.
5. PNAs by EPA Method 8270C.
6. Chromatographic pattern not typical of fuel.
7. "<" indicates analyte not detected above the laboratory reporting limit shown.
8. "--" indicates not analyzed.
9. All PNAs <5 mg/L, except naphthalene at 15 mg/L.
10. Duplicate sample dates represent a blind duplicate sample.

DATA QUALIFIER DEFINITION

"J" indicates the reported concentration is an estimate only.
"U" indicates compound was not detected above the quantitation limit shown.
"UJ" indicates that the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Abbreviations:

TPHg = Total petroleum hydrocarbons quantified as gasoline.
TPHd = Total petroleum hydrocarbons quantified as diesel.
TPHmo = Total petroleum hydrocarbons quantified as motor oil.
TPHb = Total petroleum hydrocarbons quantified as bunker-C.
BTEX = Benzene, toluene, ethylbenzene, and xylenes.
PNAs = Polynuclear aromatics.

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SHN CONSULTING ENGINEERS AND GEOLOGISTS PHASE II INVESTIGATION
SUMMARY OF ANALYTICAL RESULTS FOR GRAB GROUNDWATER SAMPLES

Former Rail Yard
Eureka, California

all values are reported in milligrams per liter (mg/l)

				Detected P'---s3										Dissolved Metals[4]							
Boring ID	Date	BTEX[1]	HVOCs[2]	Acena-phthene	Acenaph-thylene	Anthracene	Benzo(a) Anthracene	Benzo(a) Pyrene	Chrysene	Fluorene	2-Methyl naphthalene	Phenan-threne	Pyrene	Total Cr	Cu	Ni	Pb	Zn	TPHg[5]	TPHd[6]	TPHmo[6]
A-ZONE SAMPLES																					
SHN-WP-01	8/9/99	<0.0005[7]	---[8]	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-02	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-03	8/10/99	<0.0005	<0.0005	**0.0007**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	---	<0.0002	<0.0002	**0.035**	**0.01**	**0.031**	<0.015	**0.02**	**0.14**	<0.05	<0.25
SHN-WP-04	8/10/99	<0.0005	<0.0005	---	---	---	---	---	---	---	---	---	---	**0.06**	**0.018**	**0.054**	**0.027**	**0.041**	<0.05	<0.05	<0.25
SHN-WP-05	8/10/99	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	---	<0.0002	<0.0002	**0.032**	**0.009**	**0.023**	<0.015	**0.019**	<0.05	<0.05	<0.25
SHN-WP-06	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-07	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-08	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-09	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-15	8/12/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-16	8/6/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-17	8/6/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-18	8/6/99	<0.0025	<0.0005	**0.001**	<0.0002	**0.0011**	**0.001**	**0.0004**	**0.0011**	<0.0002	**0.0006**	**0.0019**	<0.0002	**0.02**	<0.005	<0.005	<0.015	**0.016**	**6.8**	**0.26**	**0.34**
SHN-WP-19	8/7/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-20	8/7/99	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.009**	<0.005	<0.005	**0.035**	<0.005	<0.05	<0.05	<0.25
SHN-WP-21	8/7/99	<0.005	<0.0005	**0.0049**	**0.0013**	<0.0008	<0.0008	<0.0008	<0.0008	**0.012**	<0.0008	**0.019**	<0.0008	**0.026**	**0.005**	<0.005	<0.015	**0.011**	**1.4**	**0.72**	<0.25
SHN-WP-22	8/7/99	<0.005	<0.0005	**0.0012**	**0.0003**	**0.0003**	<0.0002	<0.0002	<0.0002	**0.0019**	<0.0002	**0.0031**	<0.0002	**0.016**	**0.008**	**0.007**	<0.015	<0.005	**2.2**	**2.8**	<0.25
SHN-WP-23	8/9/99	<0.0005	<0.0005	**0.002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.0006**	<0.0002	<0.0002	<0.0002	**0.012**	**0.006**	<0.005	<0.015	<0.005	**0.083**	<0.05	<0.25
SHN-WP-24	8/12/99	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	---	<0.0002	<0.0002	**0.037**	<0.005	**0.019**	<0.015	**0.014**	<0.05	<0.05	<0.25
B- ZONE SAMPLES																					
SHN-WP-01	8/9/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-02	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-03	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-04	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-05	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-06	8/10/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-07	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-08	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-09	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-10	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-11	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-12	8/12/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-13	8/12/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-14	8/11/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-15	8/12/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-16	8/6/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-17	8/6/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-18	8/6/99	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**	**0.0003**	**0.014**	**0.012**	<0.005	<0.015	**0.019**	**0.067**	<0.05	<0.25
SHN-WP-19	8/7/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	**0.058**	<0.25
SHN-WP-20	8/7/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25
SHN-WP-21	8/7/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	**0.15**	<0.25
SHN-WP-22	8/7/99	<0.0025	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.25	<0.05	<0.25
SHN-WP-23	8/9/99	<0.0025	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.25	<0.05	<0.25
SHN-WP-24	8/12/99	<0.0005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.05	<0.05	<0.25

SHN CONSULTING ENGINEERS AND GEOLOGISTS PHASE II INVESTIGATION
SUMMARY OF ANALYTICAL RESULTS FOR GRAB GROUNDWATER SAMPLES
Former Rail Yard
Eureka, California

Notes:
1. Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed in accordance with EPA Method 8020.
2. HVOCs analyzed in accordance with EPA Method 8010.
3. Polynuclear aromatic hydrocarbons (P'---s) analyzed in accordance with EPA Method 8270 selected ion monitoring.
4. Metals (Cr = Chromium, Cu = Copper, Ni = Nickel, Pb = Lead, Zn = Zinc) analyzed in accordance with EPA Method 6000/7000 series. Samples were shipped to the laboratory in unpreserved containers. The laboratory passed the samples through 0.45-micron filters and then transferred the samples into containers with nitric acid preservative.
5. Total Petroleum Hydrocarbons (TPH) as Gasoline (TPHg) analyzed in accordance with EPA Method 8015M.
6. TPH as Diesel (TPHd) and TPH as Motor Oil (TPHmo) analyzed in accordance with EPA Method 8015M after silica gel cleanup (EPA Method 3630M).
7. "<" indicates compound not detected above the laboratory limit shown.
8. --- = not analyzed; insufficient sample volume.

Bold results indicate the analyte was detected.

GEOMATRIX GRAB GROUNDWATER SAMPLE RESULTS

Former Rail Yard
Eureka, California

results in milligrams per liter (mg/l)

Boring ID	Date	BTEX[1]	Total HVOCs[2]	SVOCs[3]		MTBE and Oxygenates[4]	EDC/ EDB[5]	Organic Lead[6]	PNAs[7]	PNAs (filtered)[8]	Dissolved Lead[9]	TPHg[10]	TPHd/mo[11]	TRPH[12]	TPHd/mo (filtered)[8]	Dissolved Metals[13]					
				Acenaph-thalene	Phenol											Cadmium	Chromium Total	Copper	Lead	Nickel	Zinc
1999 Former UST Sample Program																					
A-Zone Samples																					
G-62A	6/15/99	<0.005[14]	ND[15]	---[16]	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	**0.05** / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-63A	6/15/99	**0.012** Xylenes	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**1.1**	**0.14** / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-64A	6/15/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**0.11**	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-65A	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-66A	6/16/99	<0.005	ND	---	---	ND	<0.005	---	---	---	---	---	---	---	---	---	---	---	---	---	---
G-67A	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-68A	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
B-Zone Samples																					
G-62B	6/15/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	**0.058** / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-63B	6/15/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**0.84**	**0.68** / <0.25	---	**0.17** / <0.25	---	---	---	---	---	---
G-64B	6/15/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**0.057**	**0.058** / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-65B	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**0.061**	**0.055** / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-66B	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	**0.054**	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
G-67B	6/16/99	<0.005	ND	---	---	ND	<0.005	<0.1	ND	<0.0002	<0.015	<0.005	<0.05 / <0.25	---	<0.05 / <0.25	---	---	---	---	---	---
2001 Shallow Soil and Grab Groundwater Sample Program																					
SS-1-0901	9/28/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.006**	<0.015	---	---
SS-2-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-3-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-4-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-5-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-6-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-7-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-8-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-9-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-10-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---
SS-11-0901	9/27/01	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.005	<0.015	---	---

Notes:

Detections shown in bold.

1. Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed in accordance with EPA Method 8260.
2. Halogenated Volatile Organic Compounds (HVOCs) analyzed in accordance with EPA Methods 8010, 8240, or 8260.
3. Semivolatile Organic Compounds (SVOCs) analyzed in accordance with EPA Method 8270. Only detected SVOCs shown here.
4. Methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE); di-isopropyl ether (DIPE); tertiary amyl ether (TAME); and tertiary butyl alcohol (TBA) analyzed in accordance with EPA Method 8260. The detection limit for MTBE and Oxygenates is 0.005 mg/l, with the exception of TBA at 0.02 mg/l.
5. Ethylene dichloride (EDC; 1,2-dichloroethane) and ethylene dibromide (EDB) analyzed in accordance with EPA Method 8260.
6. Organic lead analyzed in accordance with DHS Method.
7. Polynuclear aromatic hydrocarbons (PNAs) analyzed in accordance with EPA Method 8270 selected ion monitoring. The detection limits for PNAs range from 0.0002 to 0.001 mg/l.
8. Samples passed through a 0.7-micron glass fiber filter to minimize potential interferences associated with the presence of non-dissolved separate-phase petroleum hydrocarbon, petroleum hydrocarbons adhered to particulate material (sediment), and emulsified petroleum hydrocarbons.
9. Lead analyzed in accordance with EPA Method 6010. Samples passed through a 0.45-micron filter before transfer into sample containers containing nitric acid preservative.
10. Total Petroleum Hydrocarbons (TPH) as Gasoline (TPHg) analyzed in accordance with EPA Method 8015M.
11. TPH as Diesel (TPHd) and TPH as Motor Oil (TPHmo) analyzed in accordance with EPA Method 8015M after silica gel cleanup (EPA Method 3630M).
12. Total Recoverable Petroleum Hydrocarbons (TRPH) analyzed in accordance with Method 418.1.
13. Dissolved metals (passed through 0.45-micron filter in the field) analyzed in accordance with EPA Method Series 6000/7000.
14. "<" indicates compound not detected above the laboratory limit shown.
15. ND = Not detected.
16. --- = Not analyzed

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
Former Eureka Railroad Yard										
MW-1A	02/04/04	--[6]	<50 [7,8]	<500[8]	<50[8]	--	--	--	--	<2.0
	08/24/04	--	**73.5** [9, 10]	<175 [10]	<175 [10]	--	--	--	--	<2.0
	03/01/05	--	<50	<175	--	--	--	--	--	<2.0
	08/23/05	--	<50	<500	<50	--	--	--	--	**0.8**
	02/28/06	--	**54**[11]	<230	<230	--	--	--	--	<2.0
	08/23/06	--	**21** [11,12]	<230	<230	--	--	--	--	<2.0
	02/20/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/05/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/26/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-1B	02/04/04	--	**130**[9]	<500	<50	--	--	--	--	**6.4**
	03/01/05	--	<50	<175	--	--	--	--	--	**10**
	08/23/05	--	--	--	--	--	--	--	--	--
	02/28/06	--	**37** [11,12]	<230	<230	--	--	--	--	**5.6**
	08/22/06	--	--	--	--	--	--	--	--	--
	02/20/07	--	<50	<170	<250	--	--	--	--	**7.9**
	08/22/07	--	--	--	--	--	--	--	--	NS
	02/05/08	--	<50	<170	<250	--	--	--	--	7.7
	08/26/08	--	--	--	--	--	--	--	--	--
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
MW-2A	02/05/04	--	**150**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	**3,420** [9,10]	**330** [10]	**6,820** [10]	--	--	--	--	**2.8**
	08/24/04 [13]	--	**5,430** [9,13]	<7,500 [13]	**11,300** [13]	--	--	--	--	--
	03/01/05	--	**220**[9]	<175	--	--	--	--	--	**3.0**
	08/23/05	--	**160**	<500	<50	--	--	--	--	**1.5**
	02/27/06	--	**130**[11]	<230	<230	--	--	--	--	**1.9**[12]
	08/22/06	--	**260** [11,14]	<230	<290 [12,14]	--	--	--	--	<2.0
	02/20/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	<50	<170	<250	--	--	--	--	<5.0
	2/5/2008	--	<50	<170	<250	--	--	--	--	<2.0
	8/26/2008	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<260	--	--	--	--	<5.0
MW-2B	02/05/04	--	<50[8]	<500[8]	<50[8]	--	--	--	--	**2.2**
	03/01/05	--	**62**[9]	<175	--	--	--	--	--	**2.8**
	08/23/05	--	--	--	--	--	--	--	--	--
	02/27/06	--	**72**[11]	**310**[12]	<230	--	--	--	--	**3.8**
	08/22/06	--	--	--	--	--	--	--	--	--
	02/20/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	--	--	--	--	--	--	--	NS
	02/06/08	--	<50	<170	<250	--	--	--	--	4
	08/26/08	--	--	--	--	--	--	--	--	--
	02/23/09	--	<50	<170	<260	--	--	--	--	<5.0
MW-3A	02/05/04	--	**100**[9]	<500	<50	--	--	--	--	**9.3**
	08/24/04	--	**207** [9,10]	<175 [10]	**476** [10]	--	--	--	--	**7.7**
	03/01/05	--	<50	<175	--	--	--	--	--	**9.9**
	08/23/05	--	<50	<500	<50	--	--	--	--	**3.8**
	02/27/06	--	**35** [11,12]	<230	<230	--	--	--	--	**7.5**
	08/22/06	--	**24** [11,12]	<230	<230	--	--	--	--	<2.0
	02/19/07	--	<50	<170	<250	--	--	--	--	**6.1**
	08/21/07	--	<50	<170	<250	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
	02/05/08	--	<50	<170	<250	--	--	--	--	**2.6**
	08/25/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-23A (duplicate of MW-3A)	02/05/04	--	--	--	--	--	--	--	--	**8.0**[15]
	08/24/04	--	--	--	--	--	--	--	--	**7.6**
	03/01/05	--	--	--	--	--	--	--	--	**16.0**
	08/23/05	--	--	--	--	--	--	--	--	**3.2**
	02/27/06	--	--	--	--	--	--	--	--	**7.9**
	08/22/06	--	--	--	--	--	--	--	--	**2.6**
	02/19/07	--	--	--	--	--	--	--	--	**6.6**
	08/21/07	--	--	--	--	--	--	--	--	<5.0
	02/05/08	--	--	--	--	--	--	--	--	--
	08/25/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	--	--	--	--	--	--	--	<5.0
MW-3B	02/05/04	--	**58** [9,16]	<500[8]	<50[8]	--	--	--	--	<2.0
	03/01/05	--	<50	<175	--	--	--	--	--	**6.1**
	08/23/05	--	--	--	--	--	--	--	--	--
	02/27/06	--	**38** [11,12]	<230	<230	--	--	--	--	**5.0**
	08/22/06	--	--	--	--	--	--	--	--	--
	02/20/07	--	<50	<170	<250	--	--	--	--	**5.5**
	08/22/07	--	NS	NS	NS	--	--	--	--	NS
	02/05/08	--	<50	<170	<250	--	--	--	--	7.5
	02/05/08	--	--	--	--	--	--	--	--	--
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-4A	02/05/04	--	**86**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	**58** [9,10]	<175 [10]	<175 [10]	--	--	--	--	**2.4**
	03/01/05	--	**73**[9]	<175	--	--	--	--	--	<2.0
	08/23/05	--	<50	<500	<50	--	--	--	--	**1.1**
	02/27/06	--	**34** [11,12]	<230	<230	--	--	--	--	**1.9**[12]
	08/22/06	--	**28** [11,12]	<230	<230	--	--	--	--	<2.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
	02/19/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/21/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/05/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/25/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<260	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
MW-5A	02/05/04	--	**74** [12,17]	<500[8]	<50[8]	--	--	--	--	<2.0
	08/24/04	--	NS[18]	NS	NS	--	--	--	--	NS
	03/01/05	--	<50	<175	--	--	--	--	--	<2.0
	08/23/05	--	<50	<500	<50	--	--	--	--	**1.0**
	02/27/06	--	**25** [11,12]	<230	<230	--	--	--	--	<2.0
	08/22/06	--	NS	NS	NS	--	--	--	--	NS
	02/19/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	NS	NS	NS	--	--	--	--	NS
	02/05/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/26/08	--	--	--	--	--	--	--	--	--
	02/23/09	--	<50	<170	<260	--	--	--	--	<5.0
MW-6A	02/05/04	--	**74**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	NS	NS	NS	--	--	--	--	NS
	03/02/05	--	<50	<175	--	--	--	--	--	**2.8**
	08/23/05	--	NS	NS	NS	--	--	--	--	NS
	Well MW-6A was abandoned and replaced on March 7, 2006 and renamed well MW-6AR.									
MW-6AR	03/10/06	--	**99**[11]	**300**[12]	<230	--	--	--	--	**10**
	08/22/06	--	NS	NS	NS	--	--	--	--	NS
	02/19/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	NS	NS	NS	--	--	--	--	NS
	Well MW-6AR was abandoned and replaced on 11/02/07 and renamed well MW-16A.									
MW-7A	02/04/04	--	**150**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	**3,110** [9, 10]	**258** [10]	**6,180** [10]	--	--	--	--	<2.0
	03/01/05	--	**160**[9]	<175	--	--	--	--	--	<2.0
	08/23/05	--	**2,800**	<500	<50	--	--	--	--	**1.1**
	02/28/06	--	**310** [11,14]	<230	**320** [11,14]	--	--	--	--	<2.0
	08/22/06	--	**890** [11,14]	<230	**910** [14]	--	--	--	--	<2.0
	02/20/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/22/07	--	<50	<170	**480**	--	--	--	--	<5.0
	02/06/08	--	<50	<170	<250	--	--	--	--	<2.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
	08/26/08	--	<50	<170	**420**	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
P-8A	02/05/04	--	**670**[9]	<500	<50	--	--	--	--	**2.4**
	08/24/04	--	<50 [19]	<175 [19]	<175 [19]	--	--	--	--	<2.0
	08/24/04 [13]	--	**3,570** [9,13]	<1,500 [13]	**7,310** [13]	--	--	--	--	--
	03/02/05	--	**1,500**[9]	<175	--	--	--	--	--	**3.1**
	08/23/05	--	**950**	<500	<50	--	--	--	--	**2.3**
	02/28/06	--	**16,000** [11,14]	<2,300	**17,000** [14]	--	--	--	--	**2.0**
	08/22/06	--	**460** [11,14]	<230	**480** [14]	--	--	--	--	<2.0
	02/20/07	--	**84**	<170	**370**	--	--	--	--	<5.0
	08/23/07	--	**58**	<170	**320**	--	--	--	--	<5.0
	02/06/08	--	<50	<170	**370**	--	--	--	--	<2.0
	08/26/08	--	**89**	<170	**570**	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
P-18A (duplicate of P-8A)	02/05/04	--	**660**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	**3,030** [9,10]	**260** [10]	**6,230** [10]	--	--	--	--	**0.0030**
	08/24/04 [13]	--	**2,270** [9,13]	<1,500 [13]	**4,680** [13]	--	--	--	--	--
	03/02/05	--	**450**[9]	<175	--	--	--	--	--	<2.0
	08/23/05	--	**1,100**	<500	<50	--	--	--	--	**2.3**
	02/28/06	--	**13,000** [11,14]	<1,200	**13,000** [14]	--	--	--	--	**2.5**
	08/22/06	--	**350** [11,14]	<230	**360** [12,14]	--	--	--	--	<2.0
	02/20/07	--	**67**	<170	**390**	--	--	--	--	<5.0
	08/23/07	--	**58**	<170	**740**	--	--	--	--	<5.0
	08/26/08	--	**85**	<170	**390**	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
MW-10A	02/04/04	--	**270**[9]	<500	<50	--	--	--	--	<2.0
	08/24/04	--	**3,390** [9,10]	**279** [10]	**6,940** [10]	--	--	--	--	**3.3**
	03/01/05	--	<50	<175	--	--	--	--	--	**2.3**
	08/23/05	--	**170**	<500	<50	--	--	--	--	**4.4**
	02/28/06	--	**1,300** [11,14]	**240**[12]	**1,300** [14]	--	--	--	--	<2.0
	08/22/06	--	**350** [11,14]	<230	**370** [12,14]	--	--	--	--	<2.0
	02/20/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/23/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/06/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/26/08	--	<50	<170	<260	--	--	--	--	**3.2**
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-11A	02/04/04	--	**130**[9]	--	--	--	--	--	--	--
	08/24/04	--	**115**[9, 10]	--	--	--	--	--	--	--
	03/02/05	--	<50	<175	--	--	--	--	--	--
	08/23/05	--	**94**	<500	<50	--	--	--	--	--
	02/28/06	--	**77** [11]	<230	<230	--	--	--	--	--
	08/22/06	--	**20** [11,12]	<230	<230	--	--	--	--	--
	02/20/07	--	<50	<170	<250	--	--	--	--	--
	08/22/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/06/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/26/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-11B	02/06/08	--	<50	<170	<250	--	--	--	--	15
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
MW-12A	02/04/04	--	**170** [9,16]	<500[8]	<50[8]	--	--	--	--	<2.0
	08/24/04	--	**277** [9,10]	<175 [10]	**589** [10]	--	--	--	--	<2.0
	03/02/05	--	**53**[9]	<175	--	--	--	--	--	<2.0
	08/23/05	--	**50**	<500	<50	--	--	--	--	**1.2**
	02/28/06	--	**180**[11]	<230	<230	--	--	--	--	<2.0
	08/22/06	--	**33** [11,12]	<230	<230	--	--	--	--	<2.0
	02/20/07	--	**76**	<170	<250	--	--	--	--	<5.0
	08/22/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/06/08	--	<50	<170	<250	--	--	--	--	<2.0
	08/26/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0
MW-16A	02/07/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	58
	02/06/08	--	<50	<170	<250	--	--	--	--	<2.0
	02/23/09	--	<50	<170	<250	--	--	--	--	<5.0

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
Former General Petroleum Site										
MW-13A	02/05/04	**76** [20]	**92** [9]	<500	<50	**1.9**	<0.50	**0.78**	<0.50	--
	08/24/04	**1,700**	**1,160** [6, 10]	<175 [10]	**1,530** [10]	**59**	**15**	**3.2**	**41**	--
	03/02/05	**130** [20]	<50	<175	--	**4.0**	<0.50	<0.50	<0.50	--
	08/23/05	**1,300**	**250**	<500	<50	**25**	**4.2**	**1.9**	**6.9**	--
	02/28/06	**16** [11, 12]	NA [21]	NA	NA	<0.50	<0.50	<0.50	<0.50	--
	08/23/06	**1,800**	**530** [9,11]	<230	<600 [9]	**28**	**8.3**	**4.8**	**11**	--
	02/19/07	**1,100**	**120**	<170	**700**	**14**	<25	<15	<6.0	--
	08/21/07	**2,800**	<50	<170	<980	**46**	**28**	<20	<30	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/25/08	**2,300**	**97**	<170	**1,300**	**48**	<60	<20	<25	**14**
	02/23/09	**310**	<50	<170	<250	<4.0	<7.0	<2.0	<3.5	--
MW-33A (duplicate of MW-13A)	02/05/04	**83** [20]	**120** [9]	<500	<50	**2.4** [15]	<0.50	**0.87**	<0.50	--
	08/24/04	**1,800**	**2,060** [6, 10]	<175 [10]	**3,140** [10]	**55**	**14**	**3.4**	**39**	--
	03/02/05	**140** [20]	<50	<175	--	**4.1**	<0.50	<0.50	<0.50	--
	08/23/05	**1,300**	**260**	<500	<50	**25**	**4.3**	**1.8**	**6.8**	--
	02/28/06	**15** [11, 12]	**40** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<0.50	--
	08/23/06	**1,700**	**430** [9,11]	<230	<500 [9]	**29**	**7.1**	**5.1**	**11**	--
	02/19/07	**1,200**	**120**	<170	**690**	**15**	<25	<16	<6.0	--
	08/21/07	**2,600**	<50	<170	**1,500**	**45**	**27**	<20	<30	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/25/08	**2,600**	**88**	<170	**1,300**	**53**	<70	<20	<28	**14**
	02/23/09	**320**	<50	<170	260	<4.0	<7.0	<2.0	<3.5	--
MW-13B	02/05/04	**300** [20]	<50 [8]	<500 [8]	<50 [8]	<0.50	<0.50	<0.50	<0.50	--
	08/24/04	<50	<50 [10]	<175 [10]	<175 [10]	<0.50	<0.50	<0.50	<0.50	--
	03/02/05	**230** [20]	<50	<175	--	**3.9**	<0.50	**0.94**	**1.7**	--
	08/23/05	**73** [20]	<50	<500	<50	<0.50	<0.50	<0.50	<1.0	--
	02/28/06	**240** [11]	**120** [11]	<230	<230	<0.50	<0.50	<0.50	<0.50	--
	08/23/06	<50	**20** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<1.0	--
	02/19/07	**240**	<50	<170	**350**	**1.5**	<0.50	<1.0	<0.50	--
	08/22/07	--	NS	NS	NS	--	--	--	--	--

Summary of Analytical Results
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Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
	02/05/08	**430**	<50	<170	<250	**1.3**	<6.0	<2.0	<2.5	--
	08/25/08	--	--	--	--	--	--	--	--	--
	02/23/09	**260**	<50	<170	<260	<1.0	<5.0	<2.5	<4.0	--
MW-14B	02/05/04	<50	<50 [8]	<500 [8]	<50 [8]	<0.50	<0.50	<0.50	<0.50	--
	08/24/04	<50	<50 [10]	<175 [10]	<175 [10]	<0.50	<0.50	<0.50	<0.50	--
	03/02/05	<50	<50	<175	--	<0.50	<0.50	<0.50	<0.50	--
	08/23/05	<50	<50	<500	<50	<0.50	<0.50	<0.50	<1.0	--
	02/28/06	**11** [11, 12]	**42** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<0.50	--
	08/23/06	<50	**17** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<1.0	--
	02/19/07	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/22/07	--	NS	NS	NS	--	--	--	--	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/25/08	--	--	--	--	--	--	--	--	--
	02/23/09	<50	<50	<170	<260	<0.50	<0.50	<0.50	<0.50	--
MW-15B	02/05/04	<50	<50 [8]	<500 [8]	<50 [8]	<0.50	<0.50	<0.50	<0.50	--
	08/24/04	<50	**4,670** [9, 19]	**492** [19]	**9,500** [19]	<0.50	<0.50	<0.50	<0.50	--
	8/24/04 17	--	<250 [13]	<750 [13]	<250 [13]	--	--	--	--	--
	03/02/05	<50	<50	<175	--	<0.50	<0.50	<0.50	<0.50	--
	08/23/05	<50	<50	<500	<50	<0.50	<0.50	<0.50	<1.0	--
	02/28/06	**18** [11, 12]	**34** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<0.50	--
	08/23/06	<50	**18** [11, 12]	<230	<230	<0.50	<0.50	<0.50	<1.0	--
	02/19/07	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/22/07	--	NS	NS	NS	--	--	--	--	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/25/08	--	--	--	--	--	--	--	--	--
	02/23/09	<50	<50	<170	<260	<0.50	<0.50	<0.50	<0.50	--

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]
QA/QC Samples										
EQB-1	02/28/06	--	36 [11, 12]	<230	<230	--	--	--	--	<2.0
	02/19/07	--	<50	<170	<250	--	--	--	--	<5.0
	08/21/07	--	<50	<170	<250	--	--	--	--	<5.0
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/25/08	--	<50	<170	--	--	--	--	--	<2.0
	02/23/09	--	<50	<170	--	--	--	--	--	<5.0
EQB-2	02/28/06	10 [11,12]	26 [11, 12]	<230	<230	<0.50	<0.50	<0.50	<0.50	--
	02/19/07	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/21/07	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	02/05/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	08/26/08	<50	<50	<170	<250	<0.50	<0.50	<0.50	<0.50	--
	02/23/09	<50	<50	<170	<260	<0.50	<0.50	<0.50	<0.50	--
FIELD BLANK	02/28/06	14 [11, 12]	--	--	--	<0.50	<0.50	<0.50	<0.50	--

Summary of Analytical Results
Former Eureka Railroad Yard
Eureka, California

Well ID	Sample Date	TPPH[1] as Gasoline (µg/l)[2]	TEPH[3] as Diesel (µg/l)	TEPH as Motor Oil (µg/l)	TEPH as Bunker Oil (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	Dissolved Arsenic[4] (ug/l)[5]

1. TPPH: Total Purgeable Petroleum Hydrocarbons
2. µg/l: micrograms per liter
3. TEPH: Total Extractable Petroleum Hydrocarbons analyzed by EPA Method 8015M with silica gel column
4. Dissolved arsenic analyzed by EPA Method 6020
5. mg/l: milligrams per liter
6. --: not analyzed
7. <: lLess than" the stated laboratory reporting limit
8. Value indicated is an estimate of the reporting limit due to matrix interference.
9. Hydrocarbon reported in diesel range does not match the laboratory standard for diesel
10. Result considered suspect due to quality control issues
11. Analyte was detected in the Method Blank at a concentration less than the laboratory Reporting Limit but greater than the Method Detection Limit.
12. Value estimated due to result being less than the laboratory Reporting Limit but greater than the Method Detection Limit
13. Sample re-analyzed out of hold time; results presented for data quality evaluation purposes only
14. Concentration consists of TEPH in both the diesel range (C10 to C28) and bunker oil range (C9 to C36), which have an overlapping carbon range.
15. Results of blind duplicate samples
16. Value is estimated due to matrix interfence.
17. Hydrocarbon reported is in the early diesel range and does not match the laboratory standard for diesel.
18. Not sampled
19. Result considered invalid; sample likely switched accidentally or misidentified by the laboratory prior to analysis
20. Hydrocarbon reported in gasoline range does not match the laboratory standard for gasoline.
21. NA: Not Analyzed; sample was broken upon receipt at the laboratory.

Appendix J
Leachability Testing Results for Soil Samples

PETROLEUM LEACHABILITY TESTING RESULTS FOR SOIL SAMPLES[1]

Former Rail Yard

Eureka, California

Total concentrations in milligrams per kilogram; soluble concentrations in milligrams per liter

Location	Depth (feet)	Date	Total TPHg[2,3]	Water Soluble TPHg[2,3,4]	Total TPHd[2,5]	Water Soluble TPHd[2,4,5]	Total TPHmo[2,6]	Water Soluble TPHmo[2,4,6]
T-33	4.5	6/28/99	750	<2[7]	18,000	<0.05	15,000	<0.25
T-34	4.5	6/28/99	<1	<2	530	<0.05	1700	<0.25
T-35	4.0	6/28/99	450	<2	19,000	<0.05	16,000	<0.25
T-36	3.0	6/28/99	<1	<2	4100	<0.05	18,000	<0.25
T-37	4.0	6/28/99	360	<2	6400	0.120	1200	<0.25
T-38	4.0	6/28/99	350	<2	3100	0.110	<260	<0.25

Location	Depth (feet)	Date	Total BTEX[2,8]	Water Soluble BTEX[2,4,8]	Total PNAs[2]	Water Soluble PNAs[2,4]
T-33	4.5	6/28/99	<2.5	<0.050	86.47	0.00246
T-34	4.5	6/28/99	<0.005	<0.050	<4.0	0.00038
T-35	4.0	6/28/99	<1.25	<0.050	25.6	<0.0002
T-36	3.0	6/28/99	<0.005	<0.050	<1.0	0.00025
T-37	4.0	6/28/99	<2.5	<0.050	22.094	0.0023
T-38	4.0	6/28/99	<0.005	<0.050	23.88	0.0148

PETROLEUM LEACHABILITY TESTING RESULTS FOR SOIL SAMPLES[1]

Former Rail Yard

Eureka, California

Notes:

1. Soil samples were analyzed by Entech Analytical Labs, Inc. (Entech) in Sunnyvale, California; PNA analysis was performed by its subcontract laboratory, Advanced Technology Laboratories of Signal Hill, California.
2. Total petroleum hydrocarbons (TPH) were analyzed using EPA Method 8015M; BTEX was analyzed using EPA Method 8260, and PNAs were analyzed using EPA Method 8270.
3. Total Petroleum Hydrocarbons (TPH) quantified against a gasoline standard (TPHg) in accordance with modified EPA Method 8015.
4. Solubility was evaluated using the California Waste Extraction Procedure, modified using site groundwater as the extractant.
5. TPH quantified against a diesel standard (TPHd) in accordance with Modified EPA Method 8015. All samples collected for TPHd analysis since September 1995 have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
6. TPH quantified against a motor oil standard (TPHmo) in accordance with Modified EPA Method 8015. All samples collected for TPHd analysis since September 1995. TPH have been cleaned up using silica gel (EPA Method 3630) to remove interferences caused by polar biogenic compounds.
7. "<" indicates compound not detected above the laboratory limit shown.
8. Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed in accordance with EPA Methods 8020, 8240, or 8260.

METALS LEACHABILITY TESTING RESULTS FOR SOIL SAMPLES

Former Railroad Yard
Eureka, California

Concentrations in mg/kg for total metals, and in mg/l for soluble metals

Sample ID	Date	Sample Depth	pH	Arsenic			Copper			Lead		
				Total	Standard WET[1]	Rainwater WET[2]	Total	Standard WET	Rainwater WET	Total	Standard WET	Rainwater WET
G-7	9/20/95	0	---[3]	---	---	---	---	---	---	**810**	---	**0.2**
G-15	9/20/95	0	---	---	---	---	---	---	---	**730**	---	<0.1[4]
G-20	9/20/95	0	---	---	---	---	---	---	---	**410**	---	<0.1
G-46	9/20/95	2	---	---	---	---	---	---	---	**510**	---	<0.1
G-54	2/24/99	0	7.4	---	---	---	---	---	---	**22**	**0.78**	<0.015
		2	7.0	---	---	---	---	---	---	<5	<0.25	<0.015
		4	7.4	---	---	---	---	---	---	<5	<0.25	<0.015
G-55	2/24/99	0	7.3	---	---	---	---	---	---	**190**	**16**	<0.015
		2	7.9	---	---	---	---	---	---	**77**	**1.8**	**0.041**
		4	7.4	---	---	---	---	---	---	**83**	**4.6**	**0.034**
G-56	2/24/99	0	6.9	---	---	---	---	---	---	**65**	**2.0**	**0.016**
		2	7.7	---	---	---	---	---	---	<5	<0.25	<0.015
		4	8.3	---	---	---	---	---	---	<5	<0.25	<0.015
G-57	2/25/99	0	7.0	---	---	---	---	---	---	**72**	**2.2**	<0.015
G-58	2/25/99	0	7.5	---	---	---	---	---	---	**79**	<0.25	<0.015
G-59	2/25/99	0	7.2	---	---	---	---	---	---	**83**	**2.1**	**0.099**
G-60	2/25/99	0	6.5	---	---	---	---	---	---	**50**	**3.0**	**0.027**
G-61	2/25/99	0	7.2	---	---	---	---	---	---	**96**	**3.4**	<0.015
A-1	3/6/01	1.0	7.0	**63**	---	**0.14**	---	---	---	---	---	---
	3/6/01	2.0	6.7	**240**	---	**0.60**	---	---	---	---	---	---
A-2	3/6/01	1.0	7.1	**57**	---	**0.13**	---	---	---	---	---	---
	3/6/01	2.0	7.0	**10**	---	<0.006	---	---	---	---	---	---
A-3	3/6/01	1.0	6.9	**62**	---	**0.18**	---	---	---	---	---	---
	3/6/01	2.0	7.0	**12**	---	<0.006	---	---	---	---	---	---
A-4	3/6/01	1.0	7.2	**93**	---	**0.084**	---	---	---	---	---	---
	3/6/01	2.0	7.2	**35**	---	<0.006	---	---	---	---	---	---

METALS LEACHABILITY TESTING RESULTS FOR SOIL SAMPLES

Former Railroad Yard
Eureka, California

Concentrations in mg/kg for total metals, and in mg/l for soluble metals

Sample ID	Date	Sample Depth	pH	Arsenic			Copper			Lead		
				Total	Standard WET[1]	Rainwater WET[2]	Total	Standard WET	Rainwater WET	Total	Standard WET	Rainwater WET
A-5	3/6/01	1.0	6.7	250	---	0.17	---	---	---	---	---	---
	3/6/01	2.0	6.7	310	---	0.30	---	---	---	---	---	---
A-6	3/6/01	1.0	7.0	60	---	0.014	---	---	---	---	---	---
	3/6/01	2.0	7.0	100	---	0.44	---	---	---	---	---	---
A-7	3/6/01	1.0	7.2	140	---	0.44	---	---	---	---	---	---
	3/6/01	2.0	7.6	47	---	0.11	---	---	---	---	---	---
A-8	3/6/01	1.0	6.8	340	---	1.1	---	---	---	---	---	---
	3/6/01	2.0	6.6	19	---	<0.006	---	---	---	---	---	---
A-9	3/6/01	1.0	6.8	230	---	<0.006	---	---	---	---	---	---
	3/6/01	2.0	7.2	88	---	0.41	---	---	---	---	---	---
A-10	3/6/01	1.0	6.7	14	---	0.13	---	---	---	---	---	---
	3/6/01	2.0	6.8	27	---	0.078	---	---	---	---	---	---
SS-1	9/27/01	1.0	8.7	19	0.2	<0.005	87	1.5	<0.005	40	0.52	0.016
	9/27/01	2.0	7.9	81	1.3	<0.005	56	2.5	<0.005	130	2.9	0.02
SS-2	9/27/01	1.0	8.6	250	4.1	1.6	21	0.2	<0.005	28	0.12	<0.006
	9/27/01	2.0	9.6	12	0.29	<0.005	4.0	0.033	<0.005	3.3	<0.05	<0.006
SS-3	9/27/01	1.0	7.5	25	3.3	0.26	10	0.27	<0.005	4.0	0.073	<0.006
	9/27/01	2.0	9.2	8.8	0.65	<0.005	3.9	0.045	0.05	3.4	<0.05	0.008 J[5]
SS-4	9/27/01	1.0	7	1.7	0.19	<0.02	54	<0.02	0.053	78	2.0	0.025
	9/27/01	2.0	6	7.5	0.26	<0.005	83	0.24	<0.005	790	74	0.012 J
SS-5	9/27/01	1.0	9	1.4	0.39	<0.005	160	15	0.1	170	1.4	0.28
	9/27/01	2.0	7.3	3.5	<0.02	<0.005	200	1.6	0.052	320	0.35	0.066
SS-6	9/27/01	1.0	9	6.6	0.16	<0.005	8.4	0.061	<0.005	7.4	<0.05	0.006 J
	9/27/01	2.0	9.1	2.6	0.15	<0.005	3.8	0.098	<0.005	3.5	<0.05	<0.006
SS-7	9/27/01	1.0	6.9	23	1.9	<0.005	32	3.6	<0.005	70	3.5	0.032
	9/27/01	2.0	8.8	1.4	0.17	<0.005	7.7	0.21	0.11	4.2	0.078	0.014 J

METALS LEACHABILITY TESTING RESULTS FOR SOIL SAMPLES

Former Railroad Yard
Eureka, California

Concentrations in mg/kg for total metals, and in mg/l for soluble metals

Sample ID	Date	Sample Depth	pH	Arsenic			Copper			Lead		
				Total	Standard WET[1]	Rainwater WET[2]	Total	Standard WET	Rainwater WET	Total	Standard WET	Rainwater WET
SS-8	9/27/01	1.0	7.8	**210**	**4**	**0.029**	**44**	**2.4**	**0.022**	**100**	**3.3**	**0.023**
	9/27/01	2.0	7.8	**1.4**	**0.69**	<0.005	**13**	**0.25**	<0.005	**20**	**0.15**	**0.01 J**
SS-9	9/27/01	1.0	8.9	**1.7**	**0.29**	<0.005	**6.6**	**0.37**	<0.005	**3.5**	**0.16**	<0.006
	9/27/01	2.0	8.1	**1.7**	**0.29**	<0.005	**4.8**	**0.27**	<0.005	**2.9**	**0.11**	<0.006
SS-10	9/27/01	1.0	9.4	<1.0	**0.092**	<0.005	**3.5**	**0.042**	<0.005	**2.7**	<0.05	<0.006
	9/27/01	2.0	9.1	**4.2**	**0.5**	**0.039**	**3.2**	<0.02	<0.005	**2.8**	<0.05	<0.006

Notes:

1. Soluble metals by the standard Waste Extraction Test (WET) and EPA Method 6010B.
2. Soluble metals by the rainwater WET and EPA Method 6010B.
3. --- = Not analyzed.
4. "<" indicates compound not detected above the detection limit shown.
5. J = compound present at the estimated concentration shown.

Bold indicates compound detected.

Appendix K
Summary of Surface Water Analytical Results

Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station A (fresh water wetland)	28-Nov-01	<5[9]	16	17	<15	55	--[10]	--	--	--	--	<50	<175	--	<1	--	31
	17-Dec-01	6.5	13	18	9.4	72	5.0	5.7	11	2.4	32	<50	<300	<300	<1	32[11]	16
	8-Jan-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7-Feb-02	1.9	21	8.8	7.4	27	<1	11	5.2	<1	<10	<50	<300	<300	<1	--	26
	19-Dec-02	5.7	63	23	50	80	<2	59	3.7	<1	10	<50	<300	<300	<1	--	180[12, 13]
	13-Jan-03	9.07	80.6	27.5	58.8	92.6	1.06[14, 15]	99.9	2.34	1.27	11.3	<50	<500	<500	<1	--	92
	19-Feb-03	5.38	72	23.8	42.3	75.6	<1	7.67[14,16]	4.24	<1	<10	<60	<360	<360	<1	--	170
	26-Mar-03	1.42	37.9	12.4	12.3	33.7	1.31	7.68	6.65[14,16]	1.56	<10	<50	<300	<300	<1	--	53[14,16]
	2-Apr-03	1.2[14,17]	24.2	13	13.4	25.6	1.28	12.3	10.1	1.49	16	<50	<300	<300	<1	--	42
	8-May-03	3.75	20.2	18.4	14	24.9	1.78	11.5	8.65	3.33	<10	<58	<350	<350	<1	--	32
	29-Dec-03	--	--	<10	<10	<20	--	--	<5.0	<5.0	<10	76 ndp[18]	--	--	--	--	9.5
	9-Jan-04	--	--	<10	<5.0	<10	--	--	<5.0	<5.0	<10	68 ndp	--	--	--	--	34[19]
	2-Feb-04	--	--	48	40	540	--	--	9.0	17	18	<50	--	--	--	--	45
	26-Mar-04	--	--	13	<5.0	14	--	--	9.8	<5.0	<10	<50	--	--	--	--	8.7[19]
	19-Oct-04	--	--	21	17	37	--	--	16	5.4	13	<50	--	--	--	--	23[19]
	8-Dec-04	--	--	5.3	<5.0	16	--	--	<5.0	<5.0	<10	67 ndp	--	--	--	--	9.9
	7-Jan-05	--	--	6.9	9.9	21	--	--	<5.0	<5.0	10	140 ndp	--	--	--	--	23.9[19]
	28-Feb-05	--	--	8.7	5.9	19	--	--	5.9	2.2	9.8	<50	--	--	--	--	15
	23-Mar-05	--	--	7.2	<5.0	11	--	--	7.5	<5.0	10	50 ndp	--	--	--	--	2.3
	7-Apr-05	--	--	7.3	<5.0	15	--	--	<5.0	<5.0	<10	<50	--	--	--	--	13
	9-May-05	--	--	15	<5.0	14	--	--	14	<5.0	<10	<50	--	--	--	--	3.6
	3-Nov-05	--	--	17	<5.0	14	--	--	21	<5.0	16	<500	--	--	--	--	9.9[13]
	1-Dec-05	--	--	7.9	<5.0	13	--	--	7.2	<5.0	13	<500	--	--	--	--	10
	3-Jan-06	--	--	6.4	7.4	13	--	--	<5.0	<5.0	15	<50	--	--	--	--	22
	16-Mar-06	--	--	6.1	8.3	14	--	--	<5.0	<3.0	15	<50	--	--	--	--	24
	21-Nov-06	--	--	12	13	23	--	--	7.9	<5.0	<10	<50	--	--	--	--	30
	12-Dec-06	--	--	8.0	<5.0	12	--	--	6.9	<5.0	14	<50	--	--	--	--	5.5
	21-Feb-07	--	--	8.7	6.4	13	--	--	6.0	<5.0	<10	<50	<170	--	--	--	12
	27-Mar-07	--	--	30	6.0	21	--	--	27	<5.0	37	<50	--	--	--	--	79
	3-Dec-07	--	--	21	8.7	22	--	--	12	<5.0	18	--	--	--	--	--	110
	8-Jan-08	5.1	32	11	<5.0	<10	<5.0	25	9.6	<5.0	<10	<50	--	--	--	--	9.5
	14-Mar-08	--	--	13	<5.0	15	--	--	10	<5.0	30	<50	--	--	--	--	22
	29-Dec-08	--	--	9.5	<5.0	10	--	--	8.9	<5.0	<10	<50	--	--	--	--	8.4
	23-Feb-09	--	--	12	<5.0	<10	--	--	10	<5.0	<10	<50	--	--	--	--	9.3

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station B (fresh water wetland)	28-Nov-01	27	1,000	400	790	1,100	--	--	--	--	--	<150 [20, 21]	610	--	<1	--	1,200
	17-Dec-01	5.7	48	21	3.2	40	5.1	37	14	1.5	29	<50	<300	<300	<1	--	8.6
	8-Jan-02	14	160	55	110	120	5.9	52	9.5	3.3	22	<50	<300	--	<0.96	--	440
	7-Feb-02	11	78	26	32	54	5.9	47	9.6	<1	<10	<50	<300	<300	<1	--	180
	19-Dec-02	<2	67	16	19	45	<2	88	13	1.3	32	<50	<300	<300	<1	--	23 [12,13]
	13-Jan-03	5.34 / 4.37[22]	95.9 / 95.3	33.7 / 35.3	160 / 176	179 / 197	1.6[14,15] / 2.26[14,15]	139 / 132	8.23 / 7.48	7.29 / 7.35	36.3 / 36.9	<50 / <50[20,23]	<500 / <500[20,21]	<500 / <500[20,23]	<1 / <1	--	95 / 85
	19-Feb-03	<1 / 1.25	112 / 130	24.4 / 26.4	66.8 / 74.2	85.7 / 95.9	2.28 / 2.11	51.3[14,16] / 48.5[14,16]	7.84 / 7.61	3.45 / 3.25	<10 / <10	<50 / <57	<300 / <340	<300 / <340	<1 / --	--	81 / 96
	26-Mar-03	3.49 / 4.16	107 / 109	19.6 / 20	31.9 / 30.3	53.6 / 53.2	2.67 / 2.77	49.4 / 50.2	9.68 [14,16] / 13.6[14,16]	7.81 / 8.09	13.5 / 15.1	<50 / <50	<300 / <300	<300 / <300	<1 / <1	--	29 [14,16] / 22 [14,16]
	2-Apr-03	6.43[14,17] / 4.65[14,17]	113 / 107	38 / 34	106 / 107	123 / 120	3.84 / 3.82	68.4 / 66.9	13.6 / 13	10.6 / 9.93	17.2 / 15.6	<50 / <50	<300 / <300	<300 / <300	<1 / --	--	63 / 65
	8-May-03	6.62 / 5.99	83.1 / 81.8	25.4 / 25.1	81.9 / 81.6	70.3 / 69.8	4.07 / 3.84	65.9 / 65	12.5 / 12.8	10.6 / 10.1	<10 / 11.2	<50 / <57	<300 / <340	<300 / <340	<1 [20,24] / --	--	49 / 46
	29-Dec-03	--	--	29 / 19	5.9 / 5.1	16 / 17	--	--	8.7 / 8.4	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	49 / 51
	9-Jan-04	--	--	10 / <10	<5.0 / 5.2	<10 / <10	--	--	11 / <5.0	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	25 [19] / 25 [19]
	2-Feb-04	--	--	13 / 20	<5.0 / 18	18 / 35	--	--	<5.0 / <5.0	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	47 / 38
	26-Mar-04	--	--	11 / 15	<5.0 / <5.0	16 / 21	--	--	7.7 / 7.2	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	8.4 [19] / 8.3 [19]
	19-Oct-04	--	--	12 / 10	5.4 / 5.6	18 / 11	--	--	9.9 / 9.0	<5.0 / <5.0	10 / <10	<50 / <50	--	--	--	--	34 [19] / 44 [19]
	8-Dec-04	--	--	8.5 / 8.7	<5.0 / <5.0	16 / 25	--	--	5.2 / 5.0	<5.0 / <5.0	<10 / <10	<50 / 56 ndp	--	--	--	--	44 / 45
	7-Jan-05	--	--	<5.0 / <5.0	5.3 / 6.1	<10 / 11	--	--	<5.0 / <5.0	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	40 [19] / 41 [19]
	28-Feb-05	--	--	5.1 / 4.8	1.6 / 1.4	6.5 / 8.3	--	--	7.2 / 7.2	<1.0 / 1.2	10 / 5.9	<50 / <50	--	--	--	--	5.1 / 5.4
	23-Mar-05	--	--	10 / 9.5	<5.0 / <5.0	<10 / <10	--	--	12 / 10	<5.0 / <5.0	<10 / <10	61 ndp/ <50	--	--	--	--	9.9 /10
	7-Apr-05	--	--	7.5 / 6.7	<5.0 / <5.0	12 / <10	--	--	8.0 / 7.1	<5.0 / <5.0	<10 / <10	140 ndp / 68 npd	--	--	--	--	20 / 21
	9-May-05	--	--	7.3 / 7.6	<5.0 / <5.0	<10 / <10	--	--	5.9 / 5.7	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	19 / 18
	3-Nov-05	--	--	9.2 / 7.4	6.1 / <5.0	18 / 15	--	--	5.2 / 5.1	<5.0 / <5.0	<10 / <10	<50 / <50	--	--	--	--	84 [13] / 81 [13]
	1-Dec-05	--	--	19 / 17	6.4 / 5.6	18 / 17	--	--	17 / 16	<5.0 / <5.0	13 / <10	<500 / <500	--	--	--	--	26 / 25
	3-Jan-06	--	--	7.4 / 7.4	7.4 / 7.7	<10 / <10	--	--	5.2 / <5.0	<5.0 / <5.0	24 / 15	<50 / <50	--	--	--	--	26 / 26
	16-Mar-06	--	--	6.6 / 6.1	9.5 / 9.1	14 / 25	--	--	<5.0 / <5.0	<3.0 / <3.0	16 / <10	<50 / <50	--	--	--	--	38 / 30
	21-Nov-06	--	--	25/19	33/21	67/48	--	--	6.9/7.2	<5.0/<5.0	31/36	<50/<50	--	--	--	--	240/220
	12-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	21-Feb-07	--	--	10	<5.0	<10	--	--	8.8	<5.0	11	<50	<170	--	--	--	2.4
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Dec-07	--	--	11	<5.0	10	--	--	9.2	<5.0	13	<50	--	--	--	--	22

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station C (fresh water wetland receiving water)	28-Nov-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63	--
	17-Dec-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	86	--
	8-Jan-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	75	--
	7-Feb-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	--
	19-Dec-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	140	--
	13-Jan-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	--
	19-Feb-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	--
	26-Mar-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160	--
	2-Apr-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	--
	8-May-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130	--
	29-Dec-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	69	--
	9-Jan-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	--
	2-Feb-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130	--
	26-Mar-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	--
	19-Oct-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	95	--
	8-Dec-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	47	--
	7-Jan-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100	--
	28-Feb-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	170	--
	23-Mar-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160	--
	7-Apr-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	140	--
	9-May-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	96	--
	3-Nov-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	--
	1-Dec-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55	--
	3-Jan-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	69	--
	16-Mar-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	--
	21-Nov-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	67	--
	12-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54	--
	21-Feb-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	74	--
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	66	--
	3-Dec-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	--
	8-Jan-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	53	--
	14-Mar-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30	--
	29-Dec-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	--
	23-Feb-09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	69	--

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station D (tidally influenced slough)	28-Nov-01 [25]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	17-Dec-01 [25]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8-Jan-02 [25]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7-Feb-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19-Dec-02 [26]	17	52	5.9	1	1.3	17	86	5.8	1.0	13	<50	<300	<300	<1	--	2.1 [12,13]
	13-Jan-03	28.1	44.4	3.56	1.22	14.3	27.6 [14,15]	102	2.2	<0.5	30.4	110 ndp	<500	<500	<1	--	46
	19-Feb-03	20.1	59.2	3.18	<1	15.9	10.4	34.5 [14,16]	1.62	<1	<10	<50	<300	<300	<1	--	4.5
	26-Mar-03	17.6	79.2	4.24	<1	19.9	12.3	43.3	2.33 [14,16]	<1	11.4	<50	<300	<300	<1	--	3.3 [14,16]
	2-Apr-03	56.8 [14,17]	38.9	24.3	2.77	27.2	9.57	25.2	2.68	<1	16.4	<50	<300	<300	<1	--	37
	8-May-03	9.78	25.2	1.87	<1	10.3	7.94	25.2	2.56	<1	12.1	<56	<340	<340	<1	--	3.3
	29-Dec-03	--	--	33	<5.0	24	--	--	14	<5.0	16	120 ndp	--	--	--	--	12
	9-Jan-04	--	--	<10	<5.0	<10	--	--	<5.0	<5.0	<10	51 ndp	--	--	--	--	20 [19]
	2-Feb-04	--	--	16	<5.0	27	--	--	<5.0	<5.0	<10	<50	--	--	--	--	3.4
	26-Mar-04	--	--	5.0	<5.0	26	--	--	<5.0	<5.0	<10	<50	--	--	--	--	1.5 [19]
	19-Oct-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8-Dec-04	--	--	<5.0	<5.0	27	--	--	<5.0	<5.0	<10	<50	--	--	--	--	14
	7-Jan-05	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	4.6 [19]
	28-Feb-05	--	--	2.4	<1.0	7.9	--	--	2.2	<1.0	8.6	<50	--	--	--	--	3.4
	23-Mar-05	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	<10	73 ndp	--	--	--	--	3.7
	7-Apr-05	--	--	<5.0	<5.0	10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	8.6
	9-May-05	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	13
	3-Nov-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1-Dec-05	--	--	9.5	<5.0	13	--	--	6.8	<5.0	13	<500	--	--	--	--	12
	10-Jan-06	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	17	<50	--	--	--	--	2.7
	16-Mar-06	--	--	<5.0	<3.0	<10	--	--	<5.0	<3.0	16	59	--	--	--	--	2.7
	21-Nov-06	--	--	160	<5.0	34	--	--	35	<5.0	36	<50	--	--	--	--	6.6
	12-Dec-06	--	--	19	<5.0	16	--	--	11	<5.0	<10	<50	--	--	--	--	7.8
	21-Feb-07	--	--	6.6	<5.0	<10	--	--	<5.0	<5.0	<10	<50	<170	--	--	--	5.4
	27-Mar-07	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	8
	3-Dec-07	--	--	6.6	<5.0	<10	--	--	5.8	<5.0	<10	<50	--	--	--	--	4.8
	8-Jan-08	14	52	6.2	<5.0	<10	13	46	<5.0	<5.0	<10	<50	--	--	--	--	5.6
	14-Mar-08	--	--	<5.0	<5.0	<10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	5.1
	29-Dec-08	--	--	11	<5.0	<10	--	--	9.2	<5.0	<10	<50	--	--	--	--	4.6
	23-Feb-09	--	--	5.8	<5.0	<10	--	--	<5.0	<5.0	<10	<50	--	--	--	--	3.1

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station E (tidally influenced slough receiving water)	28-Nov-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	--
	17-Dec-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	--
	8-Jan-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	81	--
	7-Feb-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	530	--
	19-Dec-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	430	--
	13-Jan-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	410	--
	19-Feb-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	--
	26-Mar-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	750	--
	2-Apr-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130	--
	8-May-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	190	--
	29-Dec-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9	--
	9-Jan-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	440	--
	2-Feb-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	88	--
	26-Mar-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100	--
	19-Oct-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310	--
	8-Dec-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	52	--
	7-Jan-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50	--
	28-Feb-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	610	--
	23-Mar-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	440	--
	7-Apr-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	--
	9-May-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	820	--
	3-Nov-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1-Dec-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	65	--
	10-Jan-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	220	--
	16-Mar-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	--
	21-Nov-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	760	--
	12-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54	--
	21-Feb-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	--
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	240	--
	3-Dec-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	--
	8-Jan-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46	--
	14-Mar-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110	--
	29-Dec-08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	87	--
	23-Feb-09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29	--

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station F (fresh water wetland)	28-Nov-01	<5	16	24	<15	190	--	--	--	--	--	100 [14]	198 [14,27]	--	<1	--	37
	17-Dec-01	13	17	17	29	300	11	4.4	6.0	6.0	110	<50	<300	<300	<1	--	45
	8-Jan-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7-Feb-02	21	54	27	87	560	11	9.0	23	11	260	<50	<300	<300	<2 [28]	--	120
	19-Dec-02	7.1	53	34	130	230	<2	68	4.5	1.0	24	<50	<300	<300	<2 [28]	--	180 [12,13]
	13-Jan-03	5.03	31.5	19.7	55.6	123	1.0 [14,15]	59.9	1.86	0.6	18.3	<50	<500	<500	<1	--	110
	19-Feb-03	2.33	53.7	25.7	71	140	<1	8.77 [14,16]	3.92	<1	12.2	<50	<300	<300	<1.1	--	82
	26-Mar-03	4.3	35.2	9.0	4.85	3.03	2.07	7.9	9.26 [14,16]	<1	<10	<50	<300	<300	<1	--	22 [14,16]
	2-Apr-03	<1 [20,17]	21.8	13.4	16.9	40.9	1.17	12.2	10	1.17	13.4	<50	<300	<300	<1	--	26
	8-May-03	3.01	18.2	19	10.7	37.3	2.37	14.5	15.8	1.05	19.8	<50	<300	<300	<1	--	17
	29-Dec-03	--	--	40	7.8	190	--	--	22	<5.0	81	150 ndp	--	--	--	--	8.2
	9-Jan-04	--	--	62	130	320	--	--	5.0	5.4	18	100 ndp	--	--	--	--	85 [19]
	2-Feb-04	--	--	22	39	110	--	--	<5.0	<5.0	16	<50	--	--	--	--	91
	26-Mar-04	--	--	25	<5.0	39	--	--	18	<5.0	28	<50	--	--	--	--	11 [19]
	19-Oct-04	--	--	13	18	37	--	--	9.2	<5.0	17	<50	--	--	--	--	14 [19]
	8-Dec-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7-Jan-05	--	--	8.3	21	46	--	--	<5.0	<5.0	15	<50	--	--	--	--	33 [19]
	28-Feb-05	--	--	14	6.3	47	--	--	12	2.5	35	<50	--	--	--	--	10
	23-Mar-05	--	--	12	< 5.0	32	--	--	11	<5.0	33	120 ndp	--	--	--	--	3.3
	7-Apr-05	--	--	5.9	7.4	47	--	--	<5.0	<5.0	16	52 ndp	--	--	--	--	17
	9-May-05	--	--	7.4	8.3	43	--	--	6.0	<5.0	23	56 ndp	--	--	--	--	12
	3-Nov-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1-Dec-05	--	--	7.4	5.9	34	--	--	6.9	<5.0	31	<500	--	--	--	--	8.2
	3-Jan-06	--	--	6.5	16	32	--	--	<5.0	<5.0	28	<50	--	--	--	--	25
	16-Mar-06	--	--	<5.0	11	28	--	--	<5.0	<3.0	23	<50	--	--	--	--	16
	21-Nov-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12-Dec-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	21-Feb-07	--	--	6.2	<5.0	63	--	--	5.2	<5.0	54	<50	<170	--	--	--	4.8
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8-Jan-08	<5.0	11	<5.0	5.2	63	<5.0	9.4	<5.0	<5.0	51	<50	--	--	--	--	8.0

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Summary of Chemical Analytical Results, Storm Water Runoff and Receiving Waters
Former Union Pacific Railroad Yard, Eureka, California

Sample Location	Sample Date	Total Metals[1]					Dissolved Metals[1]					TPHD[3]	TPHMO[3]	TPH as Bunker Oil[3]	PNA[4]	Hardness[5]	Turbidity[7]
		Arsenic (µg/L)[2]	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)[6]	(NTU)[8]
Station G (tidally influenced slough)[29]	28-Nov-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	17-Dec-01	4.0	130	7.1	<1	120	3.8	110	5.2	<1	100	<50	<300	<300	<1	320[11]	13
	8-Jan-02	3.8	140	7.1	1.7	190	4.1	130	3.5	<1	84	<50	<300	--	<0.96	--	6.6
	7-Feb-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	21-Nov-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Station H	21-Feb-07	--	--	9.6	<5.0	<10	--	--	9.4	<5.0	<10	<50	<170	--	--	--	2.7
	27-Mar-07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Dec-07	--	--	9.9	<5.0	11	--	--	8.0	<5.0	<10	<50	--	--	--	--	24

1. Total and Dissolved Metals analyzed by EPA Method 200.7, EPA Method 6020A, or EPA Method 6010B
2. µg/L: micrograms per Liter
3. Total Petroleum Hydrocarbons as Diesel (TPHD), as Motor Oil (TPHMO), and as Bunker Oil, analyzed by EPA Method 8015M with silica gel cleanup
4. PNA: Polynuclear Aromatics analyzed by Method 8270C (SIM)
5. Hardness (as calcium carbonate) analyzed by EPA Method 130.2 or Standard Methods 2340B/EPA Method 6010B
6. mg/L: milligrams per Liter
7. Turbidity analyzed by EPA Method 180.1 or Standard Methods 2130B (equivalent methods)
8. NTU: Nephelometric Turbidity Unit
9. <: "Less than" the stated method reporting limit
10. --: Not analyzed or not sampled
11. Analysis for hardness is not required for this station
12. Result is an estimated value with an expected low bias
13. Value is qualified as estimated with an expected low bias because holding time was exceeded
14. Result is an estimated value
15. Values are qualified as estimated because dissolved arsenic concentration in primary and duplicate samples collected from station B are less than ten times the RL and their absolute difference is greater than the RL.
16. Values are qualified as estimated because the RPD for laboratory duplicate analysis of this analyte was outside the advisory QC limits of 20 percent.
17. Values are qualified as estimated because the duplicate sample result for total arsenic (4.65 µg/L) was less than ten times the analytical RL (1 µg/L), and the absolute difference between the primary and duplicate results exceeds the RL.
18. ndp: Hydrocarbons reported do not match the laboratory diesel standard
19. Turbidity was measured in the field. Measurements were performed using a Hach 2100P Portable Turbidimeter, which meets U.S. EPA design criteria as specified in EPA Method 180.1.
20. Reporting limit is an estimated value
21. Reporting limit is approximate because the reported concentration of total petroleum hydrocarbons (TPH) as diesel was due to carry over from motor oil range into diesel quantitation range.
22. Results of samples B and H (B / H). H is a duplicate sample collected from station B.
23. Reporting limit is approximate because the surrogate recovery for o-terphenyl for the TPH as diesel, motor oil and Bunker C analysis with silica gel cleanup was reported at 44.3%, below the acceptable control limit range (60 - 130%).
24. Reporting limit is approximate because the surrogate recovery for 2-fluorobiphenyl for the PNA analysis of sample B was reported at 40.7%, below the acceptable control limit range (43 - 116%).
25. Station D was vandalized on this date and could not be sampled.
26. Station D has been moved to a new location at the entrance of the culvert emptying into the slough.
27. Value is qualified as estimated because the result is below the practical quantitation limit but above the method detection limit.
28. Results of PNAs associated with terphenyl-d14 (pyrene, benzo(a)anthracene, and chrysene) are qualified as unusable due to surrogate recovery limits below laboratory acceptance limits.
29. Station G was removed from this monitoring and reporting program based on a RWQCB site inspection on April 24, 2002.

Analytical results for sampling activities before December 29, 2003, are as reported by Geomatrix Consultants, Inc., in monitoring reports submitted to the RWQCB.

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