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A Report Prepared for:

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REPORT
SITE CHARACTERIZATION AND INTERIM REMEDIAL ACTIONS FORMER COX CADILLAC FACILITY 230 BAY PLACE OAKLAND, CALIFORNIA

SEPTEMBER 30, 1999

By:

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Project Geologist

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167.0201.006

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

1.0 INTRODUCTION

This report presents the results of site characterization, soil and groundwater remediation, and baseline groundwater monitoring associated with a former 10,000-gallon gasoline underground storage tank (UST) operated by Bill Cox Cadillac at 230 Bay Place, Oakland, California. PES Environmental, Inc. (PES) has prepared this report to document work conducted as part of implementation of soil and groundwater remedial actions at the site in accordance with PES' *Revised Interim Remedial Action Plan* (IRAP) dated October 31, 1996 and *Addendum, Revised Interim Remedial Action Plan* dated November 26, 1996 (collectively referred to as Remedial Plan). The location of the site is shown on Plate 1. The work was performed on behalf of Wells Fargo Bank (Wells Fargo), former trustee for the property owner, and Hanson, Bridgett, Marcus, Vlahos and Rudy, legal counsel to the Shepard Trust (Hanson, Bridgett) in accordance with the agreement with Bill Cox Cadillac, the former tenant.

The soil and groundwater remediation was requested by Mr. Dale Klettke of Alameda County Environmental Health Services (ACEHS) in a letter to Ms. Leah Goldberg of Hanson, Bridgett dated October 24, 1996. In the letter, ACEHS approved a program consisting of excavation of hydrocarbon-affected soil, and groundwater remediation consisting of oxygen introduction. The remedial plan was developed in response to that request.

1.1 Background Information

The nearly 2-acre Bill Cox Cadillac facility is bounded on the northwest by Harrison Street, the southwest by Bay Street, and on the southeast by Vernon Street (Plate 2). The facility has most recently been used for automobile sales and service, consisting of maintenance, repair, and painting. These activities also included use and storage of associated chemicals including fuels, oils, greases, paint, thinners, and petroleum solvents. The facility containing approximately 30,000 square feet is currently vacant. Approximately 6,500 square feet of the building was used for a sales showroom and offices, while the remainder of the building was used for automobile storage, body work and painting and an indoor service area. The exterior portion of the site is asphalt covered and was used for parking.

1.2 Previous Findings

In December 1988, a 3,000-gallon waste oil storage tank was removed from the south side of the building by R.S. Eagan & Company ("Eagan") of Concord, California. The former location of this tank is shown on Plate 2. Soil and excavation water were sampled at the time of tank removal; however, analytical data were inconclusive as to the presence of petroleum hydrocarbon compounds.

In a December 15, 1992 letter to Mr. Bill Theuringer of Bill Cox Cadillac, Mr. Thomas Peacock of ACEHS requested that a work plan for a soil and groundwater investigation relating to the former waste oil tank be submitted to ACEHS.

PES was retained by Wells Fargo and Hanson Bridgett in January 1993 to prepare a workplan, and install one groundwater monitoring well down gradient of the former waste oil tank and obtain groundwater samples from the well for laboratory analyses. In February and March 1993, one monitoring well (Well MW-1) was installed and sampled. The results of the groundwater sample analyses indicated that Total Petroleum Hydrocarbons quantified as gasoline (TPHg) was present at a concentration of 110 micrograms per liter (μg/L). Gasoline detected in groundwater was characterized as "fresh" and no waste oil constituents were detected. Consequently, an additional phase of investigation was conducted to investigate the degree and extent, and the likely source of the gasoline contamination. In October 1993, seven temporary monitoring wells (Wells TW-1 through TW-7) were installed at locations shown on Plate 2. Groundwater samples were collected and analyzed and the groundwater gradient was determined. Results of the additional investigation indicated petroleum hydrocarbon related compounds were detected in four of the temporary wells and in well MW-1. TPHg was detected at concentrations up to 140,000 μg/L. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected at concentrations up to 48,000 μg/L, 25,000 μg/L, 4,400 μg/L, and 23,000 μg/L, respectively. The highest concentrations of petroleum hydrocarbon constituents were detected in groundwater samples from two wells (TW-5 and TW-7) closest to a 10,000-gallon gasoline tank and product piping located to the west of the former waste oil tank. The general groundwater flow direction was determined to be west-southwest, toward Bay Place, at a gradient of approximately 0.04 foot per foot. The methods and results of the March and October 1993 soil and groundwater investigations were presented in a December 23, 1993 PES report.

Based on the detection of fresh gasoline in groundwater in the vicinity of the 10,000-gallon gasoline tank, the tank and product piping were removed by DECON Environmental Services of Hayward, California and observed and documented by Eisenberg, Olivieri & Associates (EOA) of Oakland, California in January 1994. Additionally, backfill soil within the tank excavation was excavated and disposed offsite by EOA. During removal, a hole was observed in the product piping between the tank and dispenser. Floating free-phase product was observed on the groundwater surface in the tank excavation. According to EOA, in their February 1994 UST Closure Report, some affected soils were left in place because of geotechnical stability concerns for the adjacent building. In June 1994 additional affected soil was excavated from the product piping trench and disposed offsite by EOA. Results of the additional excavation were presented in an EOA report dated September 1994.

EOA, on behalf of Bill Cox, subsequently performed limited investigations to evaluate the offsite extent of gasoline contamination. EOA performed quarterly groundwater monitoring on site between December 1994 and February 1996 using well MW-1, TW-2, TW-6 and TW-7. Before conducting the quarterly sampling, EOA converted temporary wells TW-2, TW-6 and TW-7 to permanent wells by removing the surface cover of pea gravel and asphalt patch and retrofitting the top of each well casing with water-tight, traffic-rated utility boxes set in concrete at the ground surface.

2.0 REMEDIAL APPROACH

EOA prepared portions of a Corrective Action Plan (CAP) dated April 1, July 25 and September 5, 1996 that included recommendations for active in-situ bioremediation and passive enhanced bioremediation. The remedial approaches by EOA were approved by ACEHS. However, the anticipated timeliness and effectiveness of the proposed interim groundwater remedy was not sufficient to meet the redevelopment schedule for the property. PES reviewed potentially applicable alternative groundwater remedial methods and recommended a human health risk-based remedial approach to obtain regulatory closure of the former 10,000-gallon UST and permit redevelopment of the property. A summary of the remedial methods reviewed and a recommended remedial approach were presented in the Remedial Plan. The ACEHS approved the Remedial Plan in a letter dated November 27, 1996.

The approved remedial approach was designed to reduce concentrations of petroleum hydrocarbons in soil and groundwater associated with the former 10,000-gallon underground gasoline tank concurrently with completing the characterization of the lateral extent of contamination. Remediation of soil would consist of excavation and offsite disposal. Remediation of groundwater would consist of applying a combination of passive in-situ bioremediation methods to introduce oxygen and nutrients into groundwater at the site to enhance biodegradation rates of petroleum hydrocarbons. The methods include: (1) adding a nutrient- and hydrogen peroxide-enriched water (hereinafter referred to as enriched water); and (2) placement of Oxygen Releasing Compound (ORC) in selected wells at the site.

3.0 SCOPE OF WORK

The scope of work consisted of the following tasks: (1) conducting additional site characterization, and installing and developing a down-gradient monitoring well; (2) implementing interim soil and groundwater remediation; (3) conducting quarterly groundwater monitoring; and (4) preparing this site characterization report and quarterly groundwater monitoring and bio-remediation progress evaluation reports.

The objective of the remediation was to reduce the concentrations of petroleum hydrocarbons, specifically benzene, in soil and groundwater to achieve acceptable risk levels. The remedial goals for the site were based on risk analyses conducted by EOA. As stated in a June 25, 1996 ACEHS letter, the remedial goals for benzene are 69 micrograms per liter (μg/L; equivalent to parts per billion) of benzene in groundwater and 16 micrograms per kilogram (μg/kg; equivalent to parts per billion) of benzene in soil.

PES has conducted the additional site characterization, down-gradient monitoring well installation and development, soil remediation, and baseline groundwater monitoring, and has initiated the groundwater remediation program. Results of these activities are discussed below.

4.0 SITE CHARACTERIZATION AND MONITORING WELL INSTALLATION

PES conducted a subsurface investigation beneath the building and adjacent sidewalk to characterize the lateral extent of gasoline hydrocarbons in the southwest portion of the site. The additional site characterization consisted of advancing three borings for soil and grab groundwater sampling. One boring, B-1, was advanced outside the building in the sidewalk along Bay Place and two borings, B-2 and B-3, were advanced inside the building near the southwest corner. In addition, one new groundwater monitoring well, MW-2 was installed in the sidewalk downgradient of the existing site wells. The well was installed to assist in monitoring the effectiveness of the bioremediation program. The soil boring and well locations are shown on Plate 2.

As presented in the Remedial Plan, one groundwater monitoring well had been proposed for installation inside the south end of the building and adjacent to the former gasoline UST. However, no groundwater was encountered in boring B-3 and no well was installed.

4.1 Preliminary Activities

PES prepared a site-specific Health and Safety Plan prior to conducting the investigations and implementing the remedial program. PES also obtained permits for the boring and well installation activities. Drilling permits were obtained from Alameda County for the borings and well installation. A Minor Encroachment Permit and an Excavation Permit were also obtained from the City of Oakland because the well location is within the sidewalk and the City right-of-way. Copies of the permits are presented in Appendix A.

Prior to conducting the work, PES contacted Underground Service Alert to identify the locations of underground utilities. In addition PES contracted a private utility locator to provide clearance for the boring and well locations.

4.2 Soil and Grab Groundwater Investigation Methods and Results

Drilling and sampling activities were performed by Gregg Drilling and Testing, Inc. (Gregg Drilling) of Martinez, California under the supervision of PES. Boring B-1 was drilled outside the building on June 9, 1997. Attempts to complete both borings B-2 and B-3 inside the building were initially unsuccessful because a buried concrete slab was encountered at a depth of approximately 1.5 feet. On July 1, 1997, PES revisited the building interior to core the 1.5-foot thick buried slab and expose the soil. Borings B-2 and B-3 were completed on July 3, 1997.

The three borings were drilled to depths between 7.5 feet below ground surface (bgs) and 10 feet bgs by direct-push sampling using a portable drill rig equipped with 2-inch outside-diameter drive rods. Groundwater was first encountered at a depth of approximately 7.5 feet bgs in B-1 and 4.25 feet bgs in B-2. No groundwater was encountered in B-3.

4.2.1 Soil and Grab Groundwater Sampling and Analyses

Drilling and sampling equipment was steam cleaned prior to each use on site. Sampling equipment was cleaned with Alconox soap and deionized water solution and then double rinsed with deionized water.

Soil samples were collected from the borings by driving a 1.5-inch outside-diameter split-spoon sampler into the undisturbed soil. The split-spoon sampler was lined with three 6-inch long stainless-steel tubes. The first (lead) liner of each sample was field screened for VOCs in the sample headspace using a photoionization detector (PID). Soil cuttings were also screened for VOCs with the PID. The PID measurements were recorded on soil boring logs. Soil samples and auger cuttings were logged in the field by a PES geologist under the supervision of a California State-registered geologist. Soil classification was conducted in accordance with the Unified Soil Classification System (USCS). The USCS chart and soil boring logs are presented in Appendix B.

One soil sample from each boring was selected for laboratory analyses. The soil samples were sealed with Teflon-lined plastic caps, labeled with project name and number, sample identification number, sampling date and time, and requested laboratory analyses and placed in a chilled thermally-insulated chest for storage before being transported to Superior Analytical Laboratory of Martinez, California, a California Department of Health Services-certified laboratory. At the time of sampling, each sample was logged on a chain-of-custody record that accompanied the samples to the laboratory.

After soil sampling and drilling to a depth of at least 2 feet below the first encountered groundwater, a clean 1-inch diameter Schedule 40 PVC casing with 5 feet of 0.020-inch machine slotted screen was placed in the boring for groundwater sampling. Groundwater samples were collected from borings B-1 and B-2 through the PVC casing using a clean disposable teflon bailer. No groundwater was encountered in boring B-3 after drilling to a depth of 10 feet bgs. The water samples were transferred to the appropriate laboratory sample containers by filling slowly to minimize sample volatilization and to ensure that the sample was free of bubbles. Sample containers were labeled with project name and number, sample identification number, sampling date and time, and requested laboratory analyses, placed in a chilled thermally-insulated chest for storage before being transported to the project laboratory. Each sample was logged on a chain-of-custody record that accompanied the samples to the laboratory.

The samples were analyzed for TPHg using EPA Test Method 8015, Modified and methyl tert-butyl ether (MTBE) and BTEX using EPA Test Method 8020. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix C.

After completing soil and grab groundwater sampling, the PVC casing was removed and the borings backfilled with a neat cement grout from the bottom of the borehole to within 6 inches of the ground surface. After allowing the grout to set, the boreholes were capped with concrete to the ground surface.

4.2.3 Soil and Grab Groundwater Sample Analytical Results

The analytical results for the soil and grab groundwater samples collected on June 9 and July 3, 1997 from borings B-1, B-2, and B-3 are presented in Table 1 and shown on Plate 3. Results of soil sample analyses indicate total xylenes were detected in the sample from boring B-2 at a concentration of 0.005 milligrams per kilogram (mg/kg). Benzene, total xylenes, and MTBE were detected in the soil sample from boring B-3 at concentrations of 0.038 mg/kg, 0.0051 mg/kg, and 0.18 mg/kg, respectively. No gasoline petroleum hydrocarbons were detected in the soil sample collected from boring B-1.

Analytical results of the grab groundwater sample from boring B-1 indicate TPHg was present at a concentration of 360 μg/L, benzene at a concentration of 150 μg/L, toluene at 2.1 μg/L, ethylbenzene at 3.6 μg/L, and total xylenes at 6.9 μg/L. Results of the grab groundwater sample from boring B-2 indicate MTBE was present at a concentration of 15 μg/L. As described above, no groundwater was encountered in boring B-3 for sample collection. Copies of laboratory reports and chain-of-custody documentation are presented in Appendix C.

4.3 Groundwater Monitoring Well Installation Activities

4.3.1 Monitoring Well Installation

One groundwater monitoring well, MW-2, was installed in the sidewalk approximately 20 feet southwest and down-gradient of existing well TW-7 (Plate 2). Borehole drilling and well installation was performed on December 29, 1998 by Gregg Drilling under the supervision of PES. The boring was drilled to a depth of approximately 20 feet bgs using a portable drill rig equipped with 8-inch outside-diameter hollow-stem augers. Groundwater was first encountered at a depth of approximately 7 feet bgs. Soil samples were collected from the boring at intervals of approximately 5 feet for lithologic logging. The samples were collected by driving a 2-inch outside-diameter California-modified split-spoon sampler lined with three 6-inch long stainless steel liners into the undisturbed soil. Soil classification was conducted in accordance with the USCS under the supervision of a California-registered geologist.

The monitoring well was installed through the hollow-stem augers within the soil boring using 2-inch diameter, flush-threaded, schedule 40 PVC casing and 0.020-inch machine-slotted well screen. The well screen extends from approximately 2.5 to 20 feet bgs and blank casing from approximately 0.25 to 2.5 feet bgs. A threaded PVC cap was placed on the bottom of the casing. The annular space between each casing and borehole was filled from the bottom of the borehole to approximately 0.5 feet above the top of the screen with RMC Lonestar 2/12 sand. A 0.5-foot-thick bentonite pellet seal was placed above the sand pack and bentonite-cement grout was placed above the bentonite pellet seal to near the top of well casing. The wellhead was completed with a locking water-tight cap within a traffic-rated well vault set in concrete. The soil boring log and well construction details for monitoring well MW-2 are presented in Appendix B.

Soil cuttings were placed in DOT-approved 55-gallon steel drums, labeled, and temporarily stored at the site until disposal arrangements are completed.

4.3.2 Monitoring Well Development

Following installation, monitoring well MW-2 was developed to sort the sand pack and remove fines from the well borehole. Additionally, existing wells MW-1, TW-2, TW-5, TW-6, and TW-7 were redeveloped because the wells had not been in use since 1996. Well development activities were conducted on December 29, 1998 for wells MW-1, TW-2, TW-6, and TW-7, and on January 12, 1999 for wells MW-2 and TW-5. Development was performed by surging and bailing, and continued until the wells were purged dry or 10 well volumes were removed. Slow recharge rates were observed during development. Wells MW-1, TW-2, TW-5, TW-6, and TW-7 were purged dry before 10 well volumes were removed. Development water was collected in a DOT-approved 55-gallon steel drum and stored at the site. During development, the pH, temperature, conductivity, turbidity, and salinity of the purge water were monitored and the data recorded. A strong hydrocarbon odor was noted in purge water from wells MW-1, TW-5, and TW-6 during development. A slight hydrocarbon odor was noted in well TW-7 purge water. A hydrocarbon sheen was also observed in well MW-1 and TW-5 purge water. Well development forms are presented in Appendix D.

4.3.3 Well Surveying

The newly installed monitoring well MW-2 was surveyed for relative top-of-casing reference elevation. The elevation was measured to an accuracy of 0.01 foot. The previously assigned top of casing elevation of 100 feet for monitoring well MW-1 was used as the reference datum.

5.0 SOIL REMEDIATION ACTIVITIES

As proposed in the Remedial Plan, hydrocarbon-affected soil beneath the former product piping between the former 10,000-gallon gasoline UST excavation and the former dispenser was excavated. The objective of the soil remediation was to reduce the concentrations of petroleum hydrocarbons to the ACEHS-approved remedial goal of 16 μg/kg benzene in soil.

5.1 Soil Excavation

Soil remediation activities were conducted by VCI of California (VCI) of San Lorenzo under the supervision of PES. On July 17, 1997, approximately 30 cubic yards (cy) of clean overburden soil and 50 cy of petroleum hydrocarbon-affected soil was excavated and temporarily stockpiled at the site by VCI using a backhoe and dump truck. Soil was excavated from an area measuring approximately 17 feet by 27 feet just east of the location of the former UST. The limits of the July 17, 1997 excavation, as well as the limits of the previous excavations performed by EOA in 1994, are shown on Plate 4. The clean overburden soil was excavated between the ground surface and a depth of approximately 2.0 feet. PES observed discolored soil at a depth of 3.0 feet and the water table was encountered at approximately 4.8 feet bgs. The petroleum hydrocarbon-affected soil was excavated vertically to depths ranging from 2.5 to 4.5 feet bgs. Soil was evaluated for the presence of hydrocarbons at the

time of excavation based on visual indicators such as soil discoloration and field screening using a photoionization detector (PID). Based on the field evaluation, the excavated soil was segregated into two material types: clean overburden and hydrocarbon-affected soil. The overburden was placed on plastic sheeting and temporarily stockpiled onsite for subsequent use as fill. The hydrocarbon-affected soil was placed on plastic sheeting and temporarily stockpiled onsite until disposal arrangements were completed.

5.2 Confirmation and Characterization Soil Sampling and Analyses

After the limits of the excavation had been reached based upon field screening and visual observations, confirmation soil samples were collected July 17, 1997 by PES field personnel. PES collected three discrete confirmation soil samples (97071701, 97071702 and 97071703) from the walls of the excavation at approximately 2.5 feet bgs (Plate 4). The samples were collected just above the seasonal high groundwater level which is approximately 3 feet bgs. Sample 97071701 was collected from the north sidewall and samples 97071702 and 97071703 were collected from the south sidewall. In addition, one four-point composite sample (97071704) was collected from the hydrocarbon-affected soil stockpile for disposal characterization and one four-point composite sample (97071705) was collected from the clean overburden stockpile for characterization prior to reuse onsite as backfill material. The samples were collected using a hand-driven sampler lined with two 3-inch long stainless steel tubes. The bottom tube was then sealed with Teflon-lined plastic end caps, labeled with project name and number, sample identification number, sampling date and time, and requested laboratory analyses and placed in a chilled thermally-insulated chest for storage before being transported to the project laboratory. At the time of sampling, each sample was logged on a chain-of-custody record that accompanied the samples to the laboratory.

Samples were analyzed for TPHg using EPA Test Method 8015 modified, and MTBE and BTEX using EPA Test Method 8020. Analytical results for the soil samples are presented in Table 2.

5.3 Confirmation and Characterization Soil Sample Analytical Results

The analytical results of the excavation confirmation and stockpile characterization soil samples are presented in Table 2. Results of the confirmation soil sample analyses indicate benzene and total xylenes were detected in sample 97071702 at concentrations of 0.009 mg/kg and 0.013 mg/kg, respectively. TPHg, benzene, toluene, ethylbenzene, total xylenes and MTBE were not detected at or above the laboratory reporting limit in confirmation samples 97071701 and 97071703.

Analytical results of the composite characterization soil sample from the hydrocarbon-affected soil stockpile indicate TPHg, benzene, toluene, ethylbenzene and total xylenes were detected at concentrations of 32 mg/kg, 0.29 mg/kg, 1.2 mg/kg, 0.58 mg/kg and 3.1 mg/kg, respectively. MTBE was not detected at or above the laboratory reporting limit in this sample. TPHg, benzene, toluene, ethylbenzene, total xylenes and MTBE were not detected at or above the laboratory reporting limit in the sample from the clean overburden stockpile. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix C.

5.4 Excavation Backfilling

After receiving approval from Mr. Thomas Peacock at ACEHS in a letter dated October 1, 1997, PES arranged for the excavation to be backfilled. On October 8 and 9, 1997, the excavation was backfilled by Phillip Services Corporation (PSC) of Benicia, California. PSC used imported Class II aggregate baserock fill from Dutra Quarry of Richmond, California and the stockpiled clean overburden. The backfill material was placed in thin lifts (between 6 and 12 inches thick) using a backhoe and compacted using a vibrating plate and a drum roller. The excavation was backfilled to the level of the existing surrounding asphalt surface.

5.5 Soil Disposal

The excavated and stockpiled hydrocarbon-affected soil was characterized as non-hazardous soil waste based on analytical results of the characterization sample. The soil was transported offsite for recycling on October 8 and 9, 1997 to TPS Technologies, Inc. in Richmond, California, by PSC, a licensed waste transporter. The non-hazardous waste manifests and a certificate for the soil recycling are presented in Appendix E.

6.0 BASELINE GROUNDWATER MONITORING

Groundwater monitoring was conducted at the site to obtain baseline data to evaluate conditions prior to startup of the groundwater bioremediation program.

6.1 Groundwater Monitoring Activities

6.1.1 Depth to Groundwater Measurements

First quarter 1999 groundwater levels were measured by PES at monitoring wells MW-1, MW-2, TW-2, TW-6, and TW-7 on January 12, 1999. Depth-to-groundwater measurements were obtained using an electronic water-level indicator and recorded to the nearest 0.01-foot. The water-level indicator was cleaned with a solution of non-phosphate detergent and de-ionized water and then rinsed before each use. Groundwater elevation data are presented in Table 3 and groundwater elevation contours are presented on Plate 5. Prior to measuring groundwater levels, dissolved oxygen concentrations were measured in several wells. Dissolved oxygen measurements procedures and results are described in Section 7.2.

6.1.2 Groundwater Sampling and Analyses

Groundwater samples were collected from wells MW-1, MW-2, TW-2, TW-6, and TW-7 on January 12, 1999. After dissolved oxygen and water-level measurements were obtained, the wells were purged by bailing until approximately three well volumes of water were removed. During purging, the water was monitored for pH, temperature, conductivity, and turbidity. Purge water was collected in DOT-approved 55-gallon steel drums and stored on site. Following well purging, a groundwater sample was collected from each well using a

disposable bailer. The sample was transferred to the appropriate laboratory sample containers using a bottom draining bailer stopcock. The sample containers were filled slowly to minimize sample volatilization and ensure that the sample was free of air bubbles. The sample containers were labeled with project site, well identification number, sample number, sampling date and time, and requested analyses, and placed in a thermally insulated chest for transportation to the project laboratory. Well purging and sampling forms are presented in Appendix D.

The groundwater samples were transported under chain-of-custody protocol to Entech Analytical Labs, Inc. of Sunnyvale, California, a California Department of Health Services-certified laboratory. The groundwater samples were analyzed for TPHg using EPA Test Method 8015 modified, and MTBE and BTEX using EPA Test Method 8020. Groundwater sample analytical results are presented in Table 4 and shown on Plate 6. Copies of the laboratory reports and chain-of-custody documentation are presented in C.

6.2 Groundwater Monitoring Results

6.2.1 Groundwater Elevation Measurements

During the First Quarter 1999 monitoring event, no floating free product was observed in any wells. However, a sheen was observed in purge water from well MW-1. Depth-to-groundwater data were converted to groundwater elevations referenced to site datum.

Groundwater elevations in wells MW-1, MW-2, TW-2, TW-6 and TW-7 on January 12, 1999, ranged from 93.15 feet in well TW-7 to 98.52 feet in well TW-2. Groundwater flow direction at the site is to the southwest, at a hydraulic gradient of approximately 0.045-foot per foot. Groundwater elevation data are presented in Table 3 and elevation contours are presented on Plate 5.

6.2.2 Groundwater Sample Analytical Results

The analytical results for the groundwater samples collected on January 12, 1999 from wells MW-1, MW-2, TW-2, TW-6 and TW-7 are presented in Table 4 and shown on Plate 6. Elevated concentrations of TPHg (up to 39,000 μg/L) were detected in the samples from wells MW-1, TW-6 and TW-7. MTBE was detected in the samples from wells MW-1, MW-2 and TW-6 at concentrations up to 2,900 μg/L. Benzene was detected in the samples from wells MW-1, MW-2, TW-6 and TW-7 at concentrations up to 9,900 μg/L. Toluene, ethylbenzene and total xylenes were detected in several of the wells at concentrations up to 5,700 μg/L. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix C.

7.0 GROUNDWATER REMEDIATION

The groundwater remediation, including treatment system setup, initial introduction of oxygen source to groundwater, and dissolved oxygen measurements were conducted on March 11,

March 17, and April 13, 1999. The activities were performed in accordance with the Remedial Plan. The program consists of applying a combination of enhanced passive in-situ bioremediation and introduction of oxygen source into groundwater at the site to enhance biodegradation rates of petroleum hydrocarbons.

7.1 Enriched Water Introduction

An oxygen source in the form of a solution of potable water, hydrogen peroxide, and a blend of nutrients (enriched water) was prepared and introduced to wells TW-4, TW-5, TW-6, TW-7, and MW-1. Concentrated hydrogen peroxide was added to a mixing tank where it was combined with de-chlorinated potable water and small quantities of nitrogen and phosphorus nutrients. A centrifugal pump, gate valves, flow meters, and pipeline delivery system were attached to the mixing tank to allow controlled addition of enriched water to the designated wells.

The enriched water was mixed at a concentration to maximize oxygen delivery and prevent accumulation of biomass in the immediate vicinity of the wells while reducing the potential for precipitation of inorganic carbonates. Initially, a volume of 1,000 gallons enriched water was introduced into the wells at a concentration of 1,050 parts per million (ppm) hydrogen peroxide. Enriched water introduction is summarized in Table 5.

Following enriched water introduction, Oxygen Releasing Compound (ORC) was installed in each of the five designated wells. The ORC is manufactured by Regenesis Bioremediation Products of San Juan Capistrano, California. The ORC is a powder form of time release magnesium peroxide. The ORC is blended with an inert carrier matrix of sand and the blend is contained in an approximately two-inch diameter polyethylene webbed sock in one foot lengths (ORC Filter Sock). The ORC Filter Socks become saturated following insertion into groundwater, and begin releasing oxygen into the subsurface. The ORC product contains both magnesium oxide and magnesium peroxide (the active ingredient). Essentially, ORC is "oxygenated magnesia" and releases the oxygen upon contact with water. The ORC Filter Socks provide continuous supply of oxygen between enriched water introductions. Enriched water introductions are planned twice per quarter (every six weeks). The ORC Filter Socks will be replaced when they no longer maintain elevated dissolved oxygen concentrations. PES estimates that the ORC Filter Socks will be replaced after approximately four to six months of use.

7.2 Dissolved Oxygen Measurement Procedures and Results

Initial dissolved oxygen measurements were obtained from wells on site by PES to evaluate conditions before and at the start of the groundwater remediation program. Total dissolved oxygen was measured in Wells MW-1, MW-2, TW-2, TW-5, TW-6, and TW-7 prior to measuring groundwater levels and purging and sampling during the baseline quarterly monitoring event on January 12, 1999. Additional dissolved oxygen measurements were obtained from Wells MW-1, TW-4, TW-5, TW-6, and TW-7 during the treatment system setup and initial oxygen source introduction on March 11 and 17, 1999. The measurements were collected from each well within the middle portion of the water column using a YSI,

Inc., Model 51B Dissolved Oxygen Meter. The equipment was calibrated according to the manufacturer's specifications before use. Prior to each measurement, the portion of the equipment submerged in the well was cleaned with a solution of non-phosphate detergent and de-ionized water then rinsed with de-ionized water.

Total dissolved oxygen concentrations measured in the wells on January 12, 1999 ranged from 1.7 to 5.5 milligrams per liter (mg/L). Total dissolved oxygen concentrations measured in the wells on March 11 and 17, 1999 ranged from 0.58 to greater than 15 mg/L. Dissolved oxygen concentrations are presented in Table 6.

Dissolved oxygen measurements are used as an indication of the effectiveness of the oxygenation achieved during groundwater remediation. Dissolved oxygen is an indirect indicator of hydrocarbon concentration. In areas of high hydrocarbon concentration, dissolved oxygen is consumed by the native bacteria and residual dissolved oxygen concentrations are expected to be low. Conversely, effective nutrient addition will be demonstrated by elevated concentrations of dissolved oxygen in the monitoring wells.

8.0 FUTURE SITE ACTIVITIES

8.1 Continuing Bioremediation Activities

Petroleum hydrocarbon-affected groundwater at the site is undergoing passive in-situ bioremediation to reduce concentrations of benzene in groundwater. Enriched water introductions are planned twice per quarter (every six weeks) for one year in wells MW-1, TW-4, TW-5, TW-6, and TW-7. PES will also monitor parameters related to the progress of the bioremediation. The concentration of dissolved oxygen will be measured in wells MW-1, MW-2, TW-2, TW-4, TW-5, TW-6, and TW-7 prior to and following each enriched water delivery event. The program will be conducted as presented in the Remedial Plan.

8.2 Quarterly Groundwater Monitoring

Quarterly groundwater monitoring at the site will be continued to evaluate environmental conditions and monitor the progress of the remedial program. Water levels in all the wells will be measured before quarterly groundwater sampling events and converted to water-level elevations to evaluate groundwater flow direction. Water-level measurements will be obtained using an electronic water-level sounder.

Prior to sampling each well, a minimum of three well volumes will be purged using a clean stainless steel bailer, bladder pump, or teflon bailer. During purging, the discharge water will be monitored for pH, temperature, and electrical conductivity. Once the water quality parameters have stabilized, groundwater samples will be collected using a teflon bailer.

Wells TW-2, TW-6, TW-7, MW-1, and MW-2 will be purged and sampled quarterly and samples submitted to Entech under chain-of-custody procedures. The groundwater samples will

be analyzed for TPHg using EPA Test Method 8015 modified, and MTBE and BTEX using EPA Test Method 8020. The samples will be analyzed on a standard 5-day turnaround time.

8.3 Quarterly Groundwater Monitoring and Performance Evaluation Reporting

Quarterly reports will be prepared summarizing the bioremediation and groundwater monitoring activities. The reports will present results of water-level measurements, a brief description of sampling procedures, a summary of chemical analytical results, water-level elevation contour map, and an evaluation and interpretation of results. Data from the bioremediation program will also be presented. Copies of laboratory reports and chain-of-custody forms will be included in an appendix.

At the end of the one year program, PES will review and summarize the results and assess effectiveness of the bioremediation program in treating hydrocarbon-affected groundwater at the site. Residual risk levels will also be evaluated. Recommendations will be presented for future remedial actions at the site, as appropriate.

9.0 CONCLUSIONS

Site characterization, soil remediation, and baseline groundwater monitoring associated with a former 10,000-gallon underground gasoline tank (UST) have been conducted as part of interim soil and groundwater remedial actions at the site. The interim remedial actions were conducted following the Remedial Plan approved by ACEHS.

PES has completed excavation of hydrocarbon-affected soil exceeding the remedial goal from the proposed area around the former product line. Soil was excavated to the water table located at about 4.5 feet bgs. Based on sample chemical results, it appears that concentrations of hydrocarbons in soil exceeding the remedial goal have been removed from above the highest seasonal groundwater depth at the site.

Characterization of the lateral extent of hydrocarbons beneath the building and sidewalk at the southwest portion of the site, in the vicinity of the former tank, has been completed. Results indicate low concentrations of petroleum hydrocarbons are present in shallow soil and groundwater beneath the south portion of the show room floor and adjacent sidewalk.

Results of the baseline quarterly groundwater monitoring indicate groundwater conditions are consistent with historical findings. The highest concentrations of petroleum hydrocarbons in groundwater are detected in wells around the former gasoline UST and product piping. Depth to groundwater and flow direction appears to be to the southwest, consistent with historical observations.

In accordance with the Remedial Plan, PES will continue with quarterly groundwater monitoring and introduction of enriched water twice per quarter. Based on the results presented herein, no modifications to the remediation program are warranted at this time.

Table 1
Soil and Grab Groundwater Sample Analytical Results
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Sampling Location	Matrix / Depth (feet bgs)	Units	TPH-g	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE
B-1	Soil / 4.0	mg/kg	<1	<0.005	<0.005	<0.005	<0.005	NA
	Groundwater	µg/L	**360**	**150**	**2.1**	**3.6**	**6.9**	NA
B-2	Soil / 5.0	mg/kg	<1	<0.005	<0.005	<0.005	**0.005**	<0.05
	Groundwater	µg/L	<50	<0.5	<0.5	<0.5	<0.5	**15**
B-3	Soil / 4.0	mg/kg	<1	**0.038**	<0.005	<0.005	**0.0051**	**0.18**
	Groundwater	µg/L	--	--	--	--	--	--

Notes:
TPH-g = Total petroleum hydrocarbons quantified as gasoline.
MTBE = Methyl tert-butyl ether.
bgs = Below ground surface.
mg/Kg = Milligrams per kilograms.
µg/l = Micrograms per liter.
<1 = Not detected at or above the laboratory reporting limit indicated.
NA = Not analyzed.
-- = No free water encountered, no sample collected.

Table 2
Excavation Soil Sample Analytical Results
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Sample Number	Sample Location	Sample Depth (feet bgs)	Units	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
97071701	North wall	2.5	mg/kg	<1	<0.005	<0.005	<0.005	<0.005	<0.05
97071702	South wall	2.5	mg/kg	<1	**0.009**	<0.005	<0.005	**0.013**	<0.05
97071703	South wall	2.5	mg/kg	<1	<0.005	<0.005	<0.005	<0.005	<0.05
97071704	Soil stockpile	NA	mg/kg	**32**	**0.29**	**1.2**	**0.58**	**3.1**	<0.05
97071705	Clean overburden stockpile	NA	mg/kg	<1	<0.005	<0.005	<0.005	<0.005	<0.05

Notes:
TPH-g = Total petroleum hydrocarbons quantified as gasoline.
MTBE = Methyl tert-butyl ether
bgs = Below ground surface.
mg/kg = Milligrams per kilogram.
µg/kg = Micrograms per kilogram.
<5 = Not detected at or above the laboratory reporting limit indicated.
NA = Not applicable.

Table 3
Groundwater Elevation Data
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Well Number	Date Measured	Top-of-Casing Reference Elevation (feet*)	Depth to Water (feet BTOC)	Groundwater Elevation (feet*)
MW-1	1/12/99	100.00	2.79	97.21
MW-2	1/12/99	97.48	5.62	91.86
TW-1	1/12/99	100.91	NM	NA
TW-2	1/12/99	100.43	1.91	98.52
TW-3	1/12/99	100.46	NM	NA
TW-4	1/12/99	99.35	NM	NA
TW-5	1/12/99	99.4	NM	NA
TW-6	1/12/99	98.75	5.52	93.23
TW-7	1/12/99	97.96	4.81	93.15

Notes:

* = Referenced to site datum
BTOC = Below top of casing
NA = Data not available
NM = Depth to water not measured

Table 4
Groundwater Sample Analytical Results - Quarterly Monitoring
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Well Number	Sample Date	TPH as Gasoline (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)
MW-1	1/12/99	39,000	800	2,600	970	2,900	5,700
MW-2	1/12/99	<50	2,900	1.5	<0.50	<0.50	<0.50
TW-2	1/12/99	<50	<5.0	<0.50	<0.50	<0.50	<0.50
TW-6	1/12/99	29,000	210	9,900	4,100	1,000	4,000
TW-7	1/12/99	29,000	<100	7,300	670	2,700	960

Notes:
TPH - Total Petroleum Hydrocarbons
MTBE - Methyl tert-butyl ether
µg/L = Micrograms per liter.
<0.50 = Not detected at or above indicated laboratory reporting limit.

Table 5
Summary of Enriched Water Introduction to Wells
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Well Name	Date Introduced	Flow Rate (gpm)	Volume of Enriched Water Introduced (gallons)	Concentration of H_2O_2 (ppm)	Amount of O_2 Introduced (pounds)
MW-1	3/11/99	0.04	2.2	1,050	0.09
	3/17/99	0.33	70.2	1,050	2.75
TW-4	3/11/99	0.05	3.0	1,050	0.12
	3/17/99	0.01	2.7	1,050	0.11
TW-5	3/11/99	0.07	4.4	1,050	0.17
	3/17/99	0.05	10.3	1,050	0.40
TW-6	3/11/99	0.29	17.3	1,050	0.68
	3/17/99	0.24	51.9	1,050	2.03
TW-7	3/11/99	0.12	6.9	1,050	0.27
	3/17/99	0.07	15	1,050	0.59
		TOTAL	183.9	TOTAL	7.21

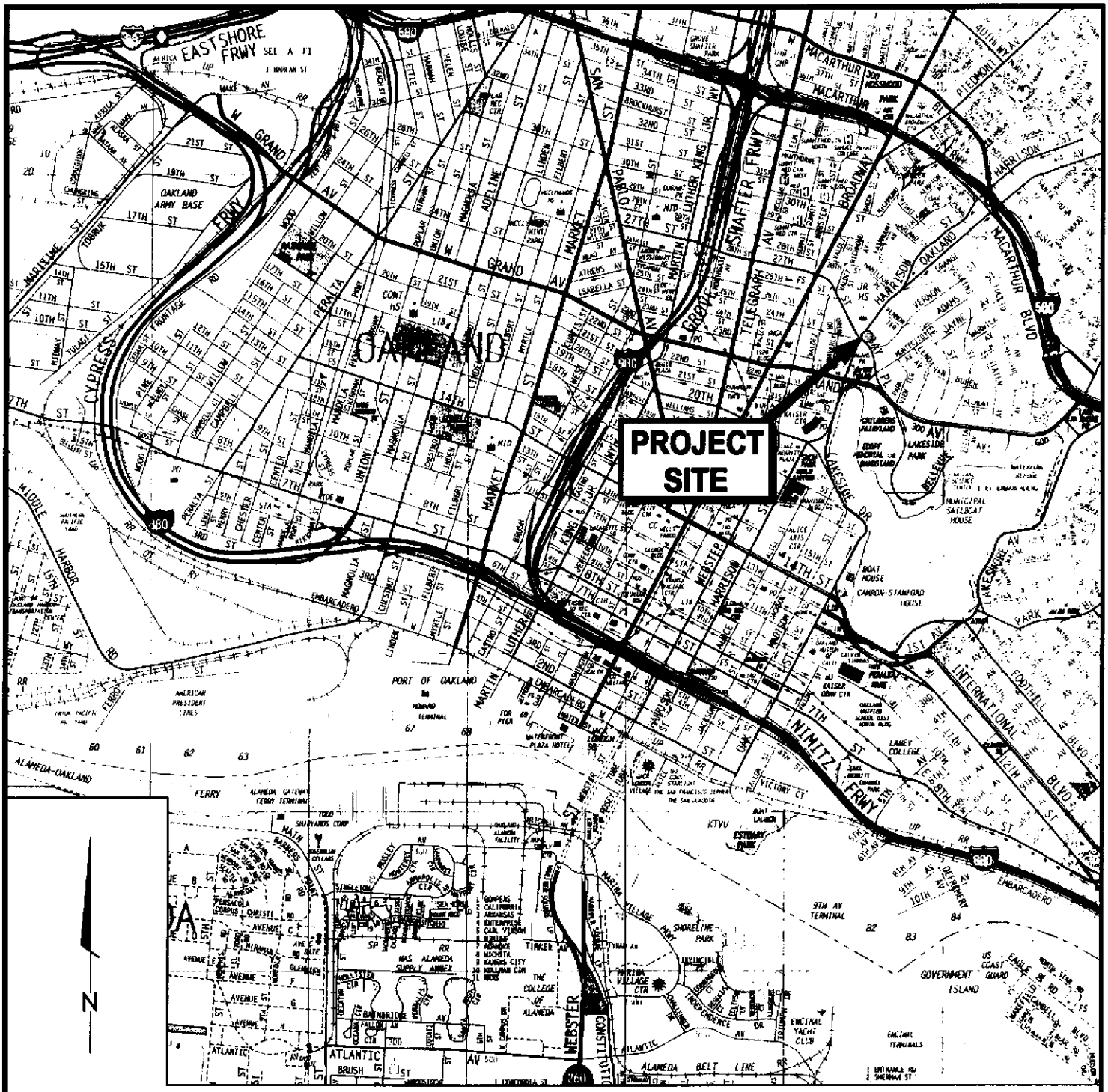
Notes:
gpm = gallons per minute
ppm = parts per million
Approximately 20 ppm of nitrogen as nitrate and 37 ppm of phosphate was present in solution.

Table 6
Summary of Total Dissolved Oxygen Measurements
Interim Remedial Actions
Former Cox Cadillac, 230 Bay Place
Oakland, California

Well Number	Date Measured	Time of Day	Total Dissolved Oxygen (mg/L)	Notes
MW-1	1/12/99	15:30	3.4	(1)
	3/11/99	15:46	0.72	(1)
	3/17/99	12:30	14.1	(2)
		18:13	>15.0	(3)
MW-2	1/12/99	12:30	3	(1)
TW-2	1/12/99	15:03	5.5	(1)
TW-4	3/11/99	15:20	3.4	(1)
	3/17/99	12:18	14.4	(2)
		17:54	12.6	(3)
TW-5	1/12/99	16:40	1.7	(1)
	3/11/99	15:36	0.58	(1)
	3/17/99	12:20	14.3	(2)
		17:57	14.6	(3)
TW-6	1/12/99	15:02	3.9	(1)
	3/11/99	15:39	0.62	(1)
	3/17/99	12:23	14.1	(2)
		18:06	>15.0	(3)
TW-7	1/12/99	13:10	2.7	(1)
	3/11/99	15:42	0.74	(1)
	3/17/99	12:25	6.5	(2)
		18:12	14	(3)

Notes:

>15 = Above indicated equipment quantification maximum.
(1) = Baseline measurement taken before initial introduction of enriched water
(2) = Measured prior to enriched water introduction
(3) = Measured after enriched water introduction
mg/L = milligrams per liter
An initial approximate 200 gallons of enriched water was introduced to wells MW-1, TW-4, TW-5, TW-6, and TW-7 in the late afternoon of March 11 and 17, 1999 during setup, testing, and refinement of the remediation system. March 17 measurements reflect the initial introduction of enriched water.



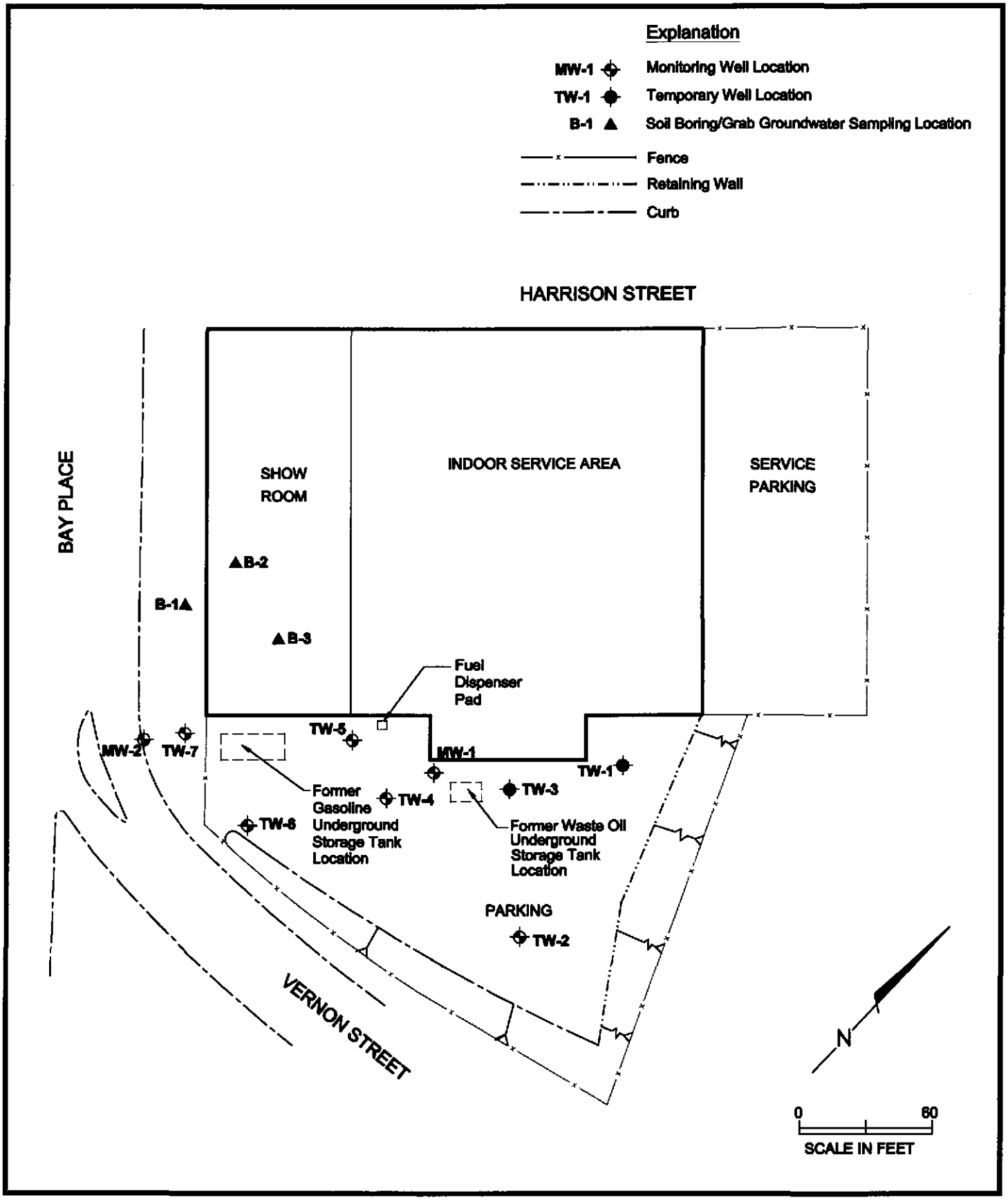
Ref: "The Thomas Guide- Alameda/Contra Costa Counties Street Guide and Directory" 1998 Edition

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Interim Remedial Actions
Former Cox Cadillac-230 Bay Place
Oakland, California

PLATE **1**

167.0201.006	1670200004_base	CDR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Site Plan and Sample Location Map
Interim Remedial Actions
Former Cox Cadillac-230 Bay Place
Oakland, California

PLATE
2

167.0201.006	1670200004_base	CVR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Explanation

MW-1 ⊕ Monitoring Well Location

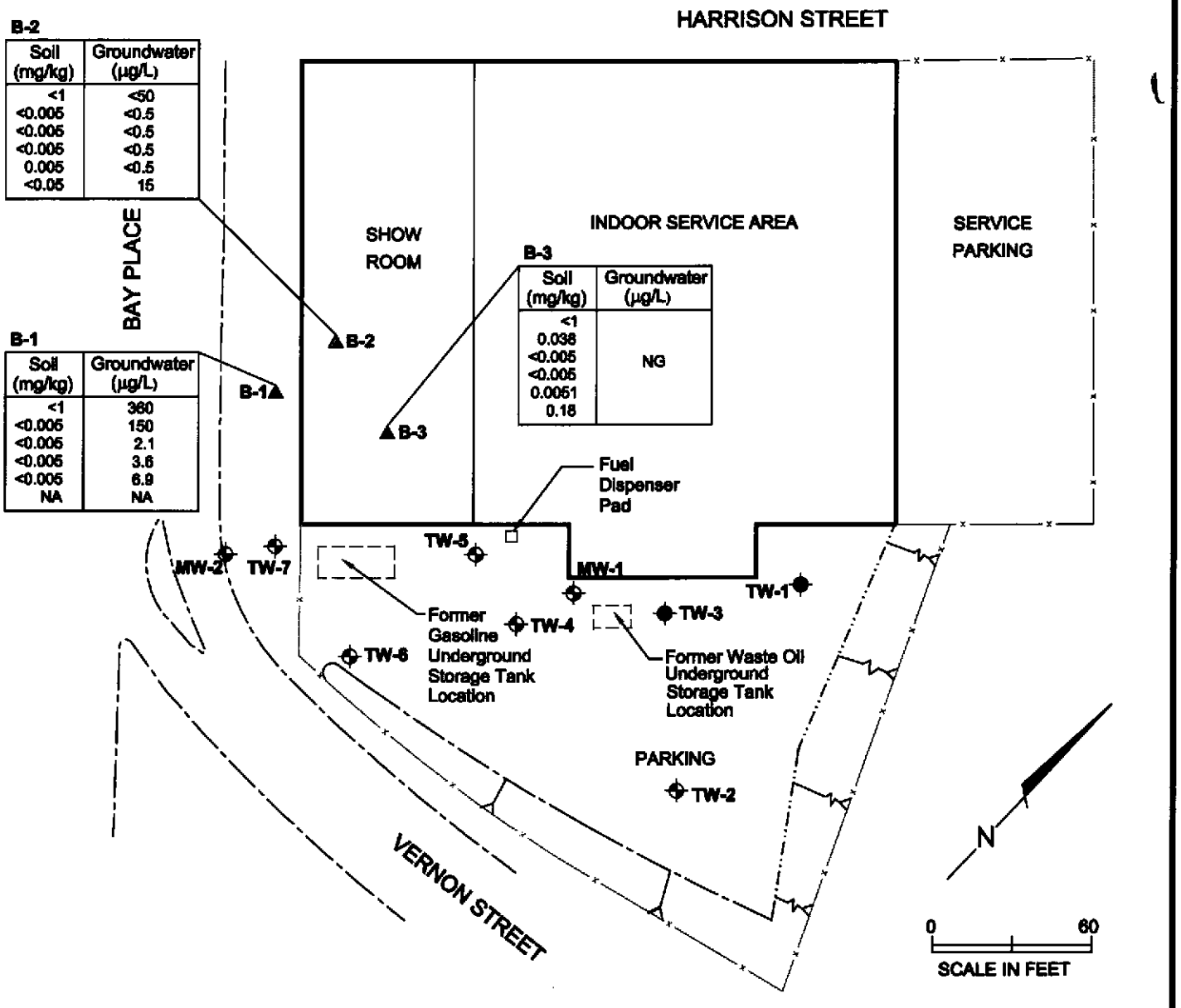
TW-1 ⊕ Temporary Well Location

B-1 ▲ Soil Boring/Grab Groundwater Sampling Location

Concentrations of Hydrocarbons
Milligrams per kilogram (mg/kg) in Soil
Micrograms per liter (µg/l) in Groundwater

Soil (mg/kg)	Groundwater (µg/L)
Total Petroleum Hydrocarbons as Gasoline	
Benzene	
Toluene	
Ethylbenzene	
Total Xylenes	
Methyl Tert-Butyl Ether	

<0.005 Not detected at or above indicated laboratory reporting limit
NG No groundwater encountered, no sample collected
NA Not Analyzed

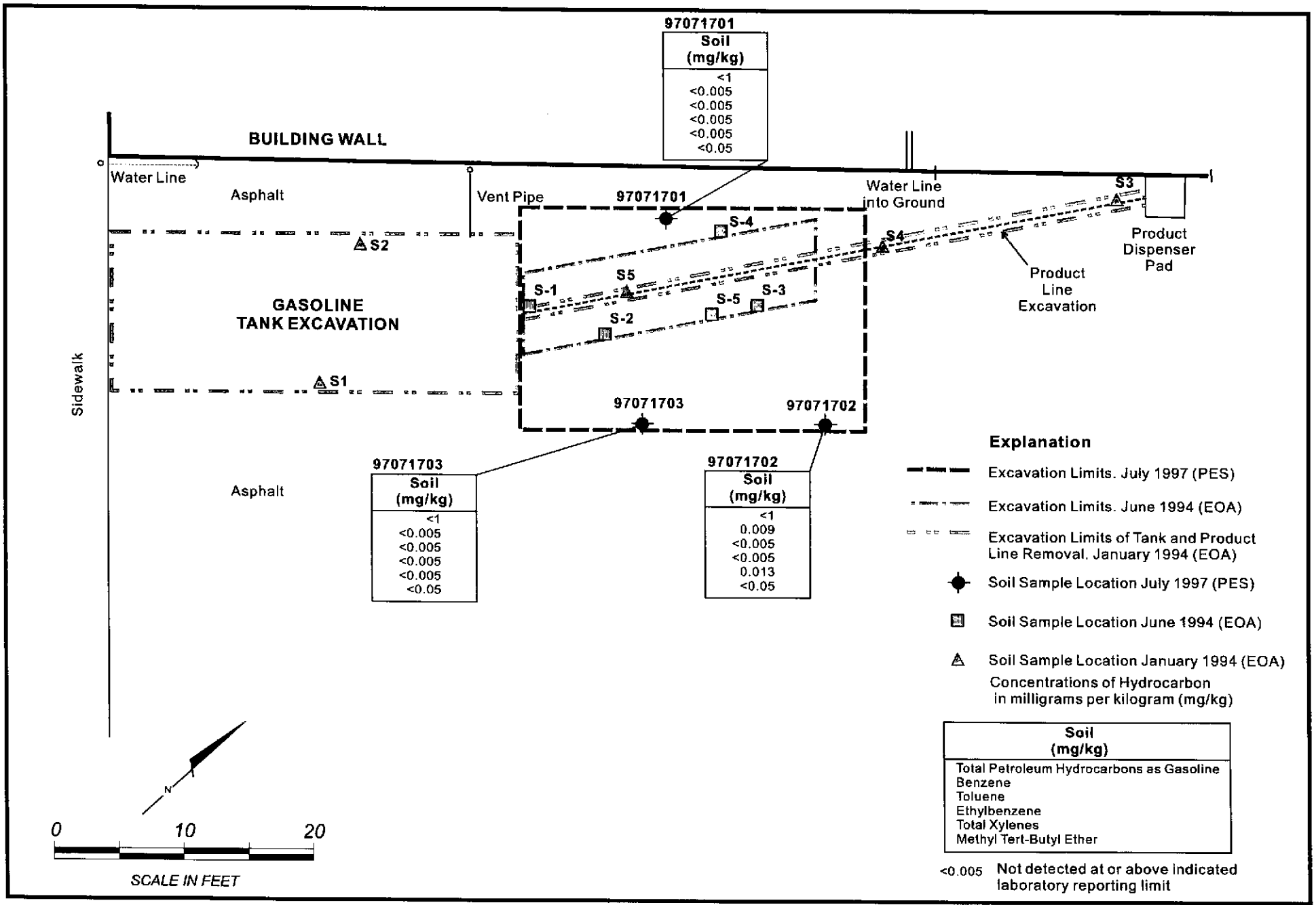


PES Environmental, Inc.
Engineering & Environmental Services

Soil and Grab Groundwater Analytical Results
Interim Remedial Actions
Former Cox Cadillac-230 Bay Place
Oakland, California

PLATE 3

167.0201.006	1670200004_base	CDR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

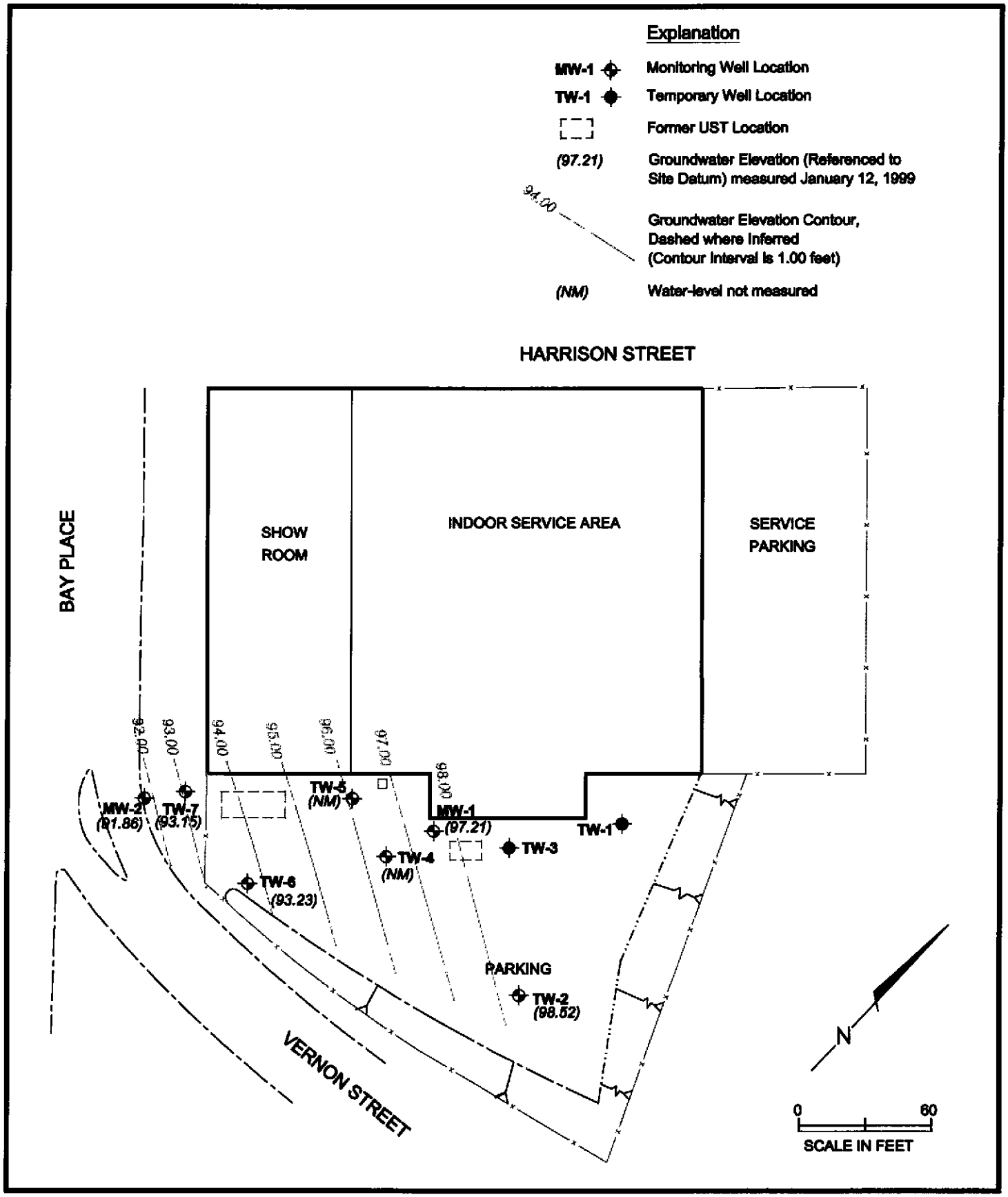


PES Environmental, Inc.
Engineering & Environmental Services

Soil Excavation and Confirmation Sample Results - July 1997
Interim Remedial Actions
Cox Cadillac - 230 Bay Place
Oakland, California

PLATE **4**

167.0201.006	1670201006_D1.CDR	CDR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Groundwater Elevation Contours on January 12, 1999
Interim Remedial Actions
Former Cox Cadillac-230 Bay Place
Oakland, California

PLATE
5

167.0201.006	1670200004_base	CDR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

Explanation

MW-1 ⊕ Monitoring Well Location

TW-1 ⊕ Temporary Well Location

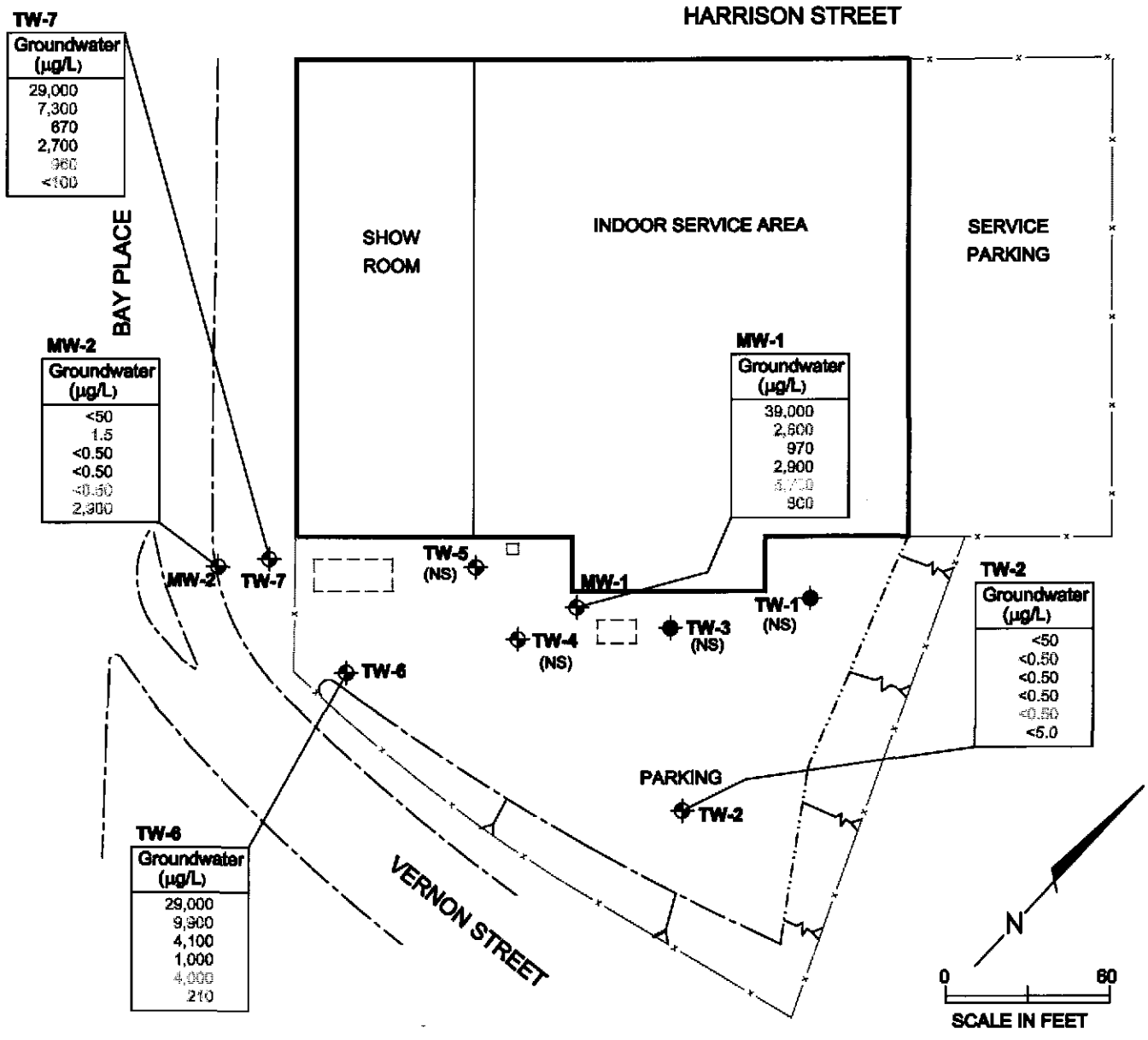
[ ] Former UST Location

Concentrations of Dissolved Hydrocarbons in Micrograms per liter (µg/l) in Groundwater

Groundwater (µg/L)
Total Petroleum Hydrocarbons as Gasoline
Benzene
Toluene
Ethylbenzene
Total Xylenes
Methyl Tert-Butyl Ether

<0.005 Not detected at or above indicated laboratory reporting limit

NS No sample collected



Distribution of Dissolved Hydrocarbons in Groundwater - January 12, 1999
Interim Remedial Activities
Former Cox Cadillac-230 Bay Place
Oakland, California

PLATE 6

PES Environmental, Inc.
Engineering & Environmental Services

167.0201.006	1670200004_base	CDR	4/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

APPENDIX A

DRILLING AND WELL INSTALLATION PERMITS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 230 Bay Street
Oakland, CA

California Coordinates Source _____ Accuracy ± ____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT Wells Fargo Bank N.A., Trustee under
Name H. W. Shepard Trusts Attn: Steven S Schulman
Address 525 Market Street 19th Floor Phone (415) 396-6741
City San Francisco Zip 94105

APPLICANT
Name PES Environmental, Inc.
Chris Rossitto Fax (415) 899-1601
Address 1682 Novato Blvd. Suite 100 Phone (415) 899-1600
City Novato, CA Zip 94947

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57 485165
Gregg Drilling and Testing

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 1 - 2 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/29/98
ESTIMATED COMPLETION DATE 12/30/98

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Chris Rossitto DATE 12-18-98

FOR OFFICE USE

PERMIT NUMBER 98WR536
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED A. Kan DATE 12/21/9

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-6575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 230 Bay Street
Oakland, CA

California Coordinate Source _____ N. Accuracy ft.
SCA _____ N/CCE _____ ft.
APN _____

CLIENT Wells Fargo Bank N.A., Trustee under
Name H.W. Shepard Trusts, Attn: Steven S. Schulman
Address 525 Market St. 18 Floor Phone 415/396-6741
City San Francisco Zip 94105

APPLICANT
Name PES Environmental, Inc.
Claire Rossiter Fax 415/899-1601
Address 1682 Alameda Blvd Ste 100 Phone 415/899-1600
City Alameda, CA Zip 94547

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57 485165
Gregg Drilling and Testing

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 1-2 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 4-22-98
ESTIMATED COMPLETION DATE 4-22-98

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Claire Rossiter DATE 4-13-98

FOR OFFICE USE

PERMIT NUMBER 98WR-161
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(3) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED A. Kan DATE 4/14/98

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Cox Cadillac Facility
250 Bay Place
Oakland, CA

CLIENT
Name Wells Fargo Bank
Address 333 Market St Voice 415/777-3200
City San Francisco Zip 94105

APPLICANT
Name PES Environmental, Inc
Fax 415/899-1601
Address 1682 Novato Blvd, 100 Voice 415/899-1600
City Novato, CA Zip 94947

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring ___
Geotechnical Investigation
General ___
Contamination X
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD: Gregg Drilling
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Direct Push

DRILLER'S LICENSE NO. C57 485165

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 2 Maximum
Hole Diameter 3 in. Depth 10 ft.

ESTIMATED STARTING DATE 7-1-97
ESTIMATED COMPLETION DATE 7-1-97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Chris Rossitto Date 6-30-97
Chris Rossitto / PES Environmental

FOR OFFICE USE

PERMIT NUMBER 97417
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
(1.) A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 30 Jun 97
Wyman Hong

91092

Lft message Tredeu 6/6/97

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

CIVIL ENGINEERING

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

PAGE 2 of 2

PERMIT NUMBER X9700702	SITE ADDRESS/LOCATION 230 BAY PLACE.
APPROX. START DATE 06/09/97 / APPROX. END DATE 06/09/97	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number) (510) 313-5800
CONTRACTOR'S LICENSE # AND CLASS C57 485165	CITY BUSINESS TAX #

Supervisor 238-6540

ATTENTION:

1) State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: 147540

2) 48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.

Sidewalk Dept 510/615-5850

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. ______, B&PC for this reason ______

WORKER'S COMPENSATION

☑ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # W9311-0483Y Company Name GREGG DRILLING + TESTING

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

[signature] 06/06/97

Signature of Permittee ☐ Agent for ☒ Contractor ☐ Owner — Date

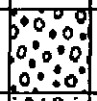
DATE STREET LAST RESURFACED 1959	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☒ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☒ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY [signature]		DATE ISSUED 6/6/97	

EXTENDED 12/22/98 BY J. LEVINE

forms/ips/excavpio(ok) (1/95)

APPENDIX B

BORING LOGS

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND AND GRAVEL
			OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, WITH OR WITHOUT SAND OR GRAVEL
			OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

ABBREVIATION KEY

PID (PPM)	-Photo Ionization Detector readings in parts per million from field headspace sample screening.
BLOWS/6"	-Blows required to drive sampler 6 inches as indicated on the logs using sample drive hammer weight of 140 pounds falling 30 inches.
2.5YR 6/2	-Soil Color according to Munsell Soil Color Charts (1994 Revised Edition)
feet MSL	-feet above Mean Sea Level
feet BGS	-feet below ground surface

SYMBOLS KEY

- ☐ - No Soil Sample Recovered
- ⧄ - Partial Soil Sample Recovered
- ☒ - Undisturbed Soil Sample Recovered
- ■ - Soil Sample Submitted for Laboratory Analysis
- ⊞ - Hydropunch Sample
- ▽ - First Encountered Groundwater Level
- ▼ - Piezometric Groundwater Level

PES Environmental, Inc.
Engineering & Environmental Services

***Unified Soil* Classification System Chart**
Former Cox Cadillac
230 Bay Place
Oakland, California

PLATE
B-1

167.0201.004	1670201001_b1-3_mw2.CDR		3/99
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING B-1

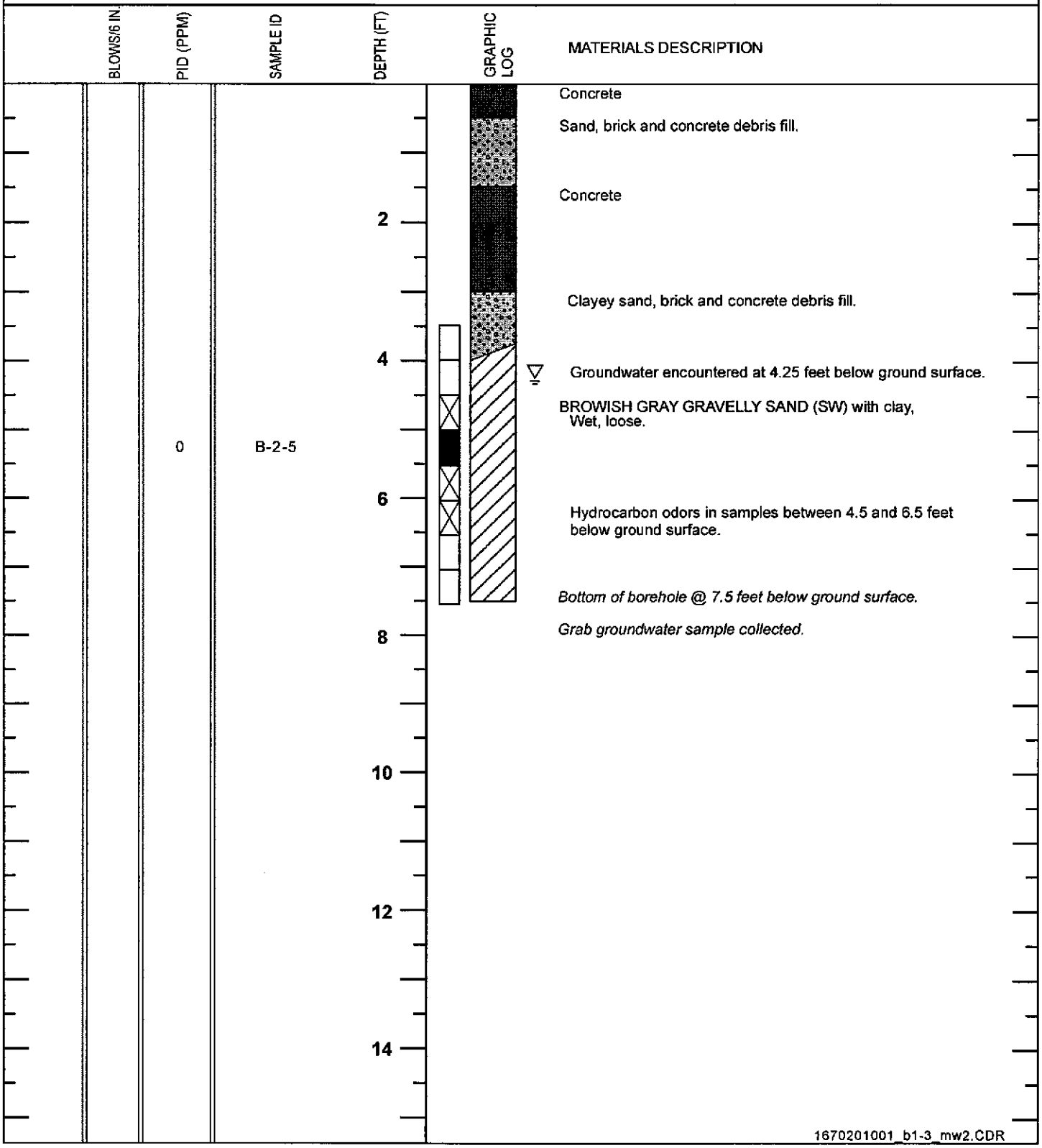
BLOWS/6 IN.	PID (PPM)	SAMPLE ID	DEPTH (FT)	GRAPHIC LOG	MATERIALS DESCRIPTION
			0		Concrete Gravel/Baserock
	0		2		DARK BROWN SAND (SW) 10YR 3/3, moist, medium dense, well graded fine to medium sand, ~90% sand, ~10% silt. YELLOWISH BROWN SANDY CLAY WITH GRAVEL (CL) 10YR 5/4, moist, medium stiff, fine gravel, fine to coarse sand, ~10% gravel, ~30% sand, ~60% clay.
	24.9	B-1-4	4		DARK GREENISH GRAY SANDY CLAY (CL) Gley, 4/1, moist, medium stiff to stiff, fine to medium sand, ~15% sand, ~85% clay.
			6		
			8		Groundwater encountered at 7.5 feet below ground surface. DARK GREENISH GRAY SAND (SW) Gley, 4/1, wet, loose, well-graded fine to medium sand, ~95% sand, ~5% silt.
			10		*Bottom of borehole @ 10.0 feet below ground surface.* *Grab groundwater sample collected.*
			12		
			14		

1670201001_b1-3_mw2.CDR

PROJECT	Former Cox Cadillac	DIAMETER OF HOLE	2 inches	PLATE
LOCATION	Oakland, CA.	TOTAL DEPTH OF HOLE	10 feet	**B-2**
JOB NUMBER	167.0201.004	TOP OF CASING ELEVATION	NA	
GEOLOGIST/ENGINEER	Elizabeth A. Large	DATE STARTED	6/9/97	
DRILL RIG/SAMPLING METHOD	Geoprobe 5200/Direct Push	DATE COMPLETED	6/9/97	

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING B-2



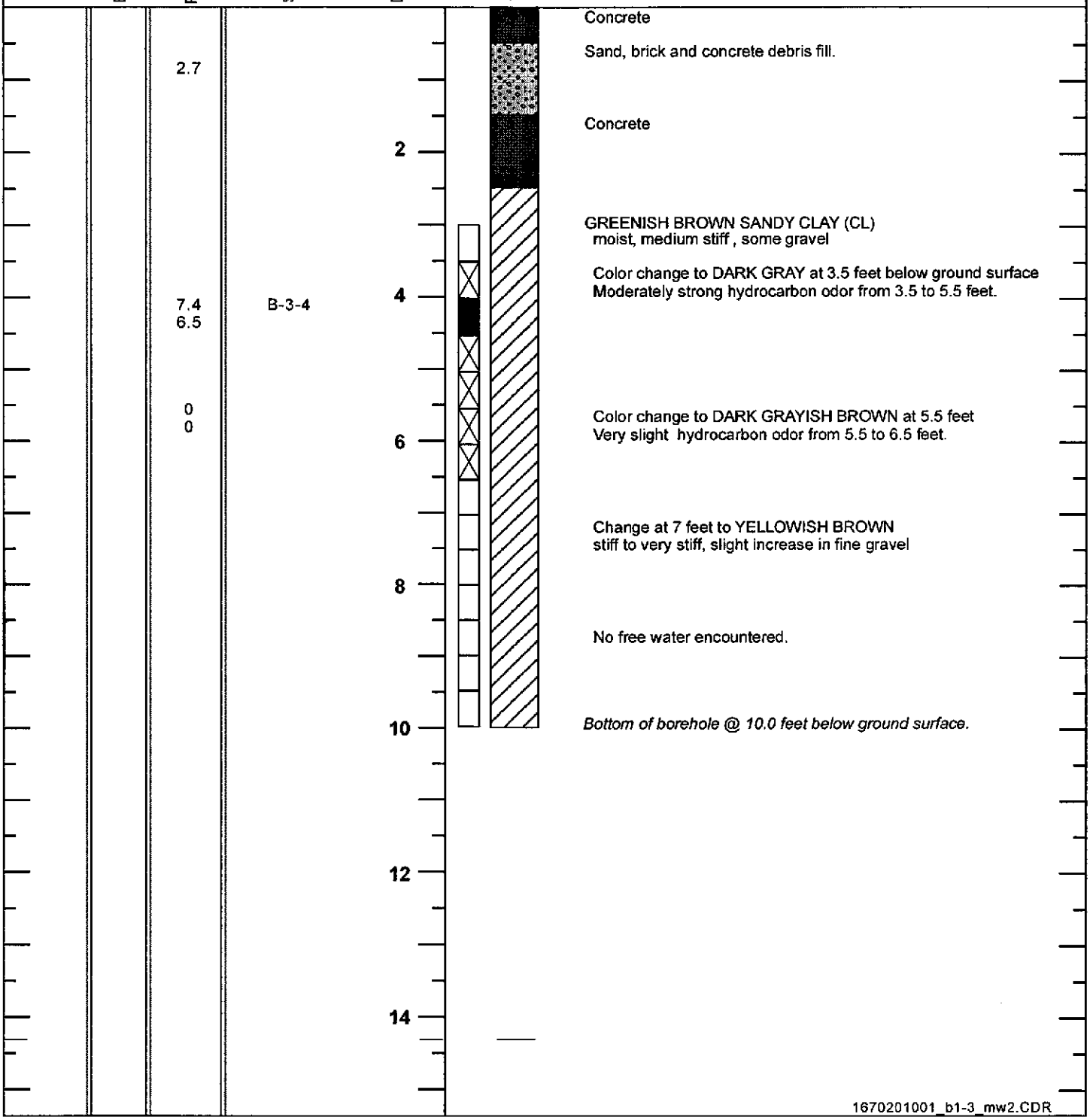
PROJECT	Former Cox Cadillac	DIAMETER OF HOLE	2 inches
LOCATION	Oakland, CA.	TOTAL DEPTH OF HOLE	7.5 feet
JOB NUMBER	167.0201.004	TOP OF CASING ELEVATION	NA
GEOLOGIST/ENGINEER	Chris Rossitto	DATE STARTED	7/3/97
DRILL RIG/SAMPLING METHOD	Rhino Rig/Direct Push	DATE COMPLETED	7/3/97

PLATE

B-3

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF BORING B-3

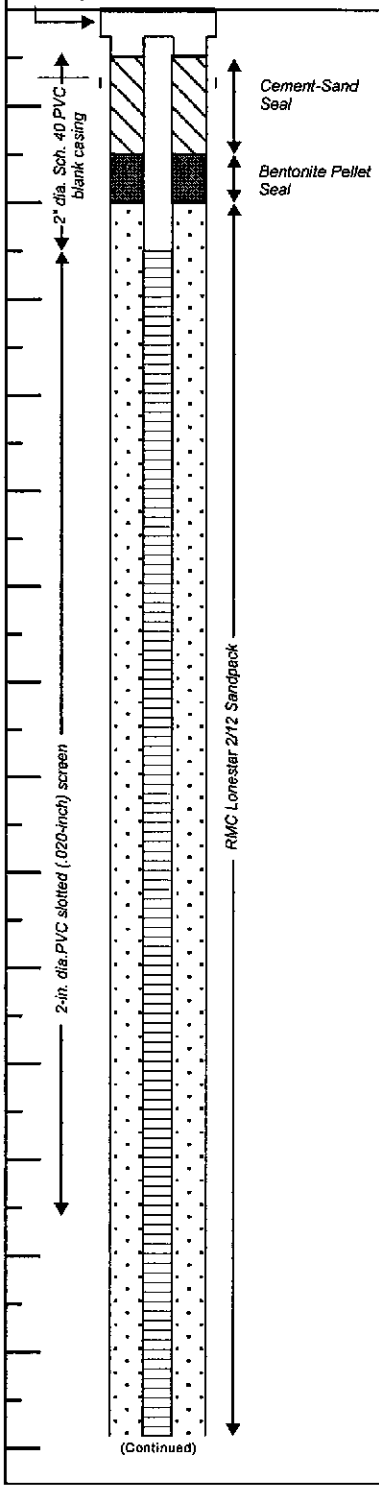


PROJECT	Former Cox Cadillac	DIAMETER OF HOLE	2 inches
LOCATION	Oakland, CA.	TOTAL DEPTH OF HOLE	10 feet
JOB NUMBER	167.0201.004	TOP OF CASING ELEVATION	NA
GEOLOGIST/ENGINEER	Chris Rossitto	DATE STARTED	7/3/97
DRILL RIG/SAMPLING METHOD	Rhino Rig/Direct Push	DATE COMPLETED	7/3/97

PLATE **B-4**

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF MONITORING WELL MW-2



BLOWS/6 IN.	PID (PPM)	DEPTH (FT)	GRAPHIC LOG	MATERIALS DESCRIPTION
				Concrete Sidewalk. Hand Auger to 5 feet.
				DARK YELLOWISH BROWN CLAYEY SANDY GRAVEL (GW) 10YR 3/4, moist, loose to medium dense, ~60%fine to coarse gravel, ~35% medium to coarse sand, ~5% clay.
				GREENISH BLACK SANDY CLAY (CL) 10Y 2.5/1, moist, stiff to very stiff, ~20% fine to coarse sand, ~80% clay.
		2		
		4		
	0 0 0			Change at 5 feet to DARK GREENISH GRAY 5 GY 4/1, moist, medium stiff.
		6		
				DARK YELLOWISH BROWN GRAVEL (GP) with sand and clay 10YR 4/4, wet, medium dense, ~10% clay, ~20% fine to coarse sand, ~70% fine gravel.
				Groundwater encountered at 7 feet below ground surface.
		8		
	0 0	10		
		12		
		14		
				(Continued)

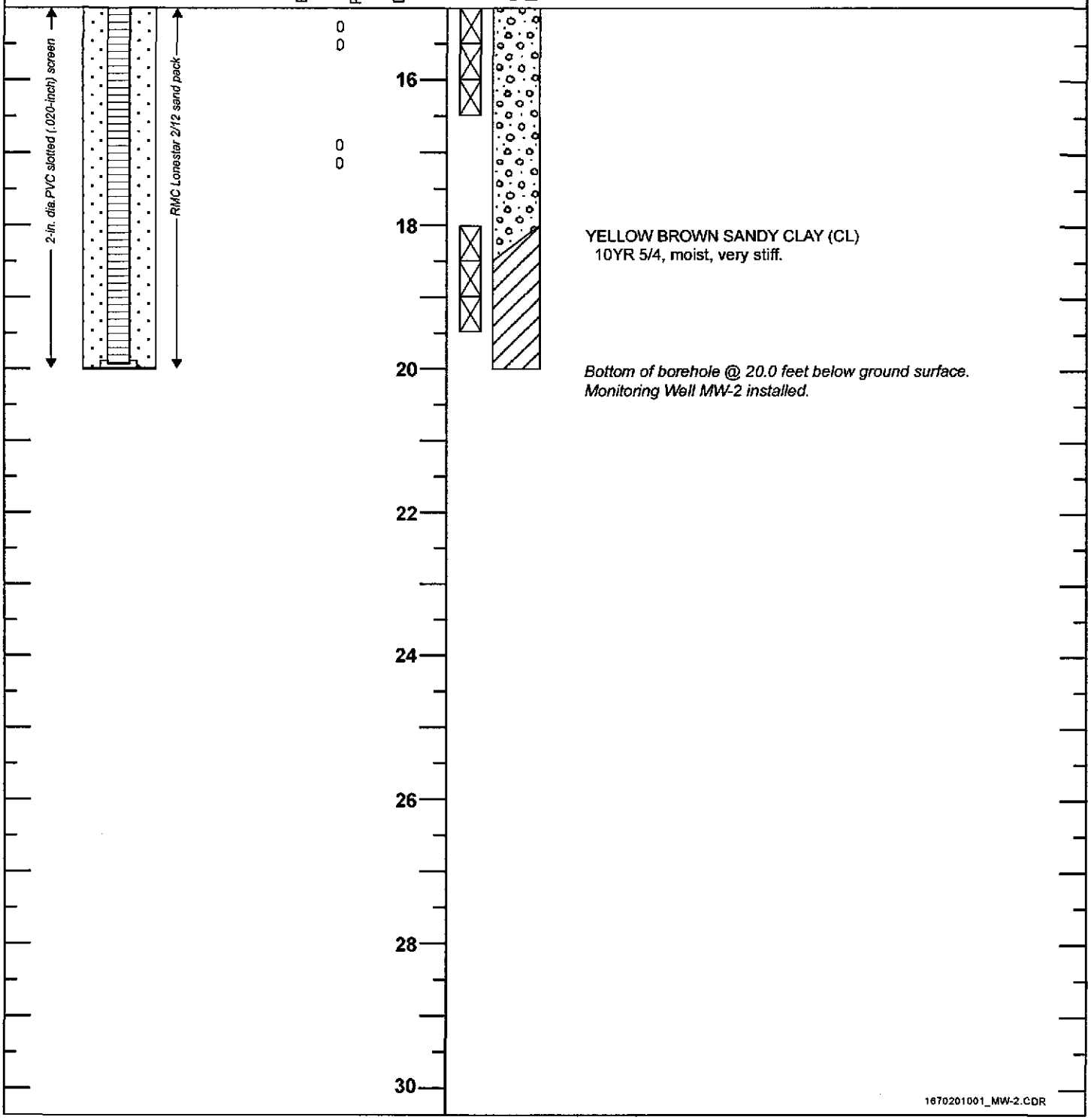
1670201001_MW-2.CDR

PROJECT	Former Cox Cadillac	DIAMETER OF HOLE	8 inches
LOCATION	Richmond, CA.	TOTAL DEPTH OF HOLE	20 feet
JOB NUMBER	167.0201.004	TOP OF CASING ELEVATION	NA
GEOLOGIST/ENGINEER	Chris Rossitto	DATE STARTED	12/29/98
DRILL RIG/SAMPLING METHOD	All-Terrain D-15/HSA	DATE COMPLETED	12/29/98

PLATE **B-5**

PES Environmental, Inc.
Engineering & Environmental Services

LOG OF MONITORING WELL MW-2



PROJECT	Former Cox Cadillac	DIAMETER OF HOLE	8 inches
LOCATION	Richmond, CA.	TOTAL DEPTH OF HOLE	20 feet
JOB NUMBER	167.0201.004	TOP OF CASING ELEVATION	NA
GEOLOGIST/ENGINEER	Chris Rossitto	DATE STARTED	12/29/98
DRILL RIG/SAMPLING METHOD	All-Terrain D-15/HSA	DATE COMPLETED	12/29/98

PLATE **B-5**

10.0 REFERENCES

Eisenberg, Olivieri, & Associates, Inc. (EOA), 1994a. *Report of UST Closure Activities, 230 Bay Place, Oakland, California.* February.

Eisenberg, Olivieri, & Associates, Inc. (EOA), 1994b. *Report of Soil Excavation and Disposal Activities, 230 Bay Place, Oakland, California.* September.

PES Environmental, Inc. (PES), 1993. *Soil and Groundwater Investigation, Bill Cox Cadillac, 230 Bay Place, Oakland, California.* December 23.

PES Environmental, Inc. (PES), 1996a. *Revised Interim Remedial Action Plan, Soil Excavation and Passive In-Situ Bioremediation, Former Bill Cox Cadillac Facility, 230 Bay Place, Oakland, California.* October 31.

PES Environmental, Inc. (PES), 1996b. Addendum, *Revised Interim Remedial Action Plan, Soil Excavation and Passive In-Situ Bioremediation, Former Bill Cox Cadillac Facility, 230 Bay Place, Oakland, California.* November 21.

APPENDIX C

ANALYTICAL REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

RECEIVED JAN 2 8 1999

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, CA 94947
Attn: Will Mast

Date: 1/19/99
Date Received: 1/12/99
Project: 167.0201.004
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-1			MW-2			TW-2				
Sample Date	1/12/99			1/12/99			1/12/99				
Sample Time	16:36			16:13			16:27				
Lab #	G1565			G1566			G1567				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	1/13/99			1/13-1/14/99			1/13/99				
TPH-Gas	**39,000**	20	1000	**ND**	1.0	50	**ND**	1.0	50	50	8015M
MTBE	**800**	20	100	**2,900**	20	100	**ND**	1.0	5.0	5.0	8020
Benzene	**2,600**	20	10	**1.5**	1.0	0.50	**ND**	1.0	0.50	0.50	8020
Toluene	**970**	20	10	**ND**	1.0	0.50	**ND**	1.0	0.50	0.50	8020
Ethyl Benzene	**2,900**	20	10	**ND**	1.0	0.50	**ND**	1.0	0.50	0.50	8020
Xylenes	**5,700**	20	10	**ND**	1.0	0.50	**ND**	1.0	0.50	0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

· Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

PES Environmental, Inc.
1682 Novato Boulevard, Suite 100
Novato, CA 94947
Attn: Will Mast

Date: 1/19/99
Date Received: 1/12/99
Project: 167.0201.004
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	TW-6			TW-7							
Sample Date	1/12/99			1/12/99							
Sample Time	16:22			16:08							
Lab #	G1568			G1569							
	Result	DF	DLR	Result	DF	DLR				PQL	Method
Results in µg/Liter:											
Analysis Date	1/13-1/14/99			1/13-1/14/99							
TPH-Gas	**29,000**	20	1000	**29,000**	20	1000				50	8015M
MTBE	**210**	20	100	**ND**	20	100				5.0	8020
Benzene	**9,900**	100	50	**7,300**	100	50				0.50	8020
Toluene	**4,100**	20	10	**670**	20	10				0.50	8020
Ethyl Benzene	**1,000**	20	10	**2,700**	20	10				0.50	8020
Xylenes	**4,000**	20	10	**960**	20	10				0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

· Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2990113
Matrix: Water
Units: µg/L

Date Analyzed: 01/13/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP % R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	40	ND	34	**85**	33	**82**	2.8	25	75-116
Toluene	8020	<0.50	40	ND	34	**86**	33	**83**	2.9	25	76-116
Ethyl Benzene	8020	<0.50	40	ND	35	**87**	34	**85**	2.7	25	80-113
Xylenes	8020	<0.50	120	ND	105	**87**	102	**85**	3.0	25	79-115
Gasoline	8015	<50.0	500	ND	531	**106**	455	**91**	15.4	25	76-127

Note: LCS and LCSD results reported for the following Parameters:
All

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
NC: Not Calculated

PES ENVIRONMENTAL, Inc.
Engineering & Environmental Services

CHAIN OF CUSTODY RECORD

Entech Lab

1682 NOVATO BOULEVARD, SUITE 100
NOVATO, CALIFORNIA 94947
(415) 899-1600 FAX (415) 899-1601

JOB NUMBER: 167.0201.004

NAME / LOCATION: Cox Cadillac / Oakland

PROJECT MANAGER: Will Mast

SAMPLERS: Chris Rossetto, Chris Delaney

RECORDER: Chris Rossetto

DATE YR	MO	DY	TIME	SAMPLE NUMBER / DESIGNATION	SOURCE CODE	MATRIX: Water	Sedim't	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	Filtered	DEPTH IN FEET	COL MTD CD	QA CODE	ANALYSIS REQUESTED: EPA 601 / 8010	EPA 602 / 8020 (BTEX)	EPA 624 / 8240	EPA 625 / 8270	TPHg by 5030 / 8015 (mod)	TPHd by 3550 / 8015 (mod)	MTBE	
99	01	12	1636	MW-1	23	X							3						X			X		X	G15765
			1613	MW-2	23	X							3						X			X		X	G15766
			1627	TW-2	23	X							3						X			X		X	G15767
			1622	TW-6	23	X							3						X			X		X	G15768
			1608	TW-7	23	X							3						X			X		X	G15769

NOTE

Standard 5-day TAT

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Chris Rossetto	RECEIVED BY: (Signature) Marco Flores PCO	DATE 1/12/99	TIME 5:01
RELINQUISHED BY: (Signature) Maya K.	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature) Marco Flores	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
DISPATCHED BY: (Signature) / DATE / TIME	RECEIVED FOR LAB BY: (Signature) VIVIAN	DATE 1/13/99	TIME 7:10 pm
METHOD OF SHIPMENT:			

WHITE–Laboratory COPY YELLOW–Project Office Copy PINK–Field or Office Copy

Superior Analytical Laboratory

PES Environmental, Inc.
1682 Novato Blvd. Suite 100
Novato, CA 94947

Date: June 16, 1997

Attn: Andrew Briefer

RECEIVED JUN 17 1997

Laboratory Number : 22853

Project Number/Name : 167.0201.001
Facility/Site : COX CADILLAC
OAKLAND, CA

Dear Andrew Briefer:

Attached is Superior Analytical Laboratory report for the samples received on June 9, 1997. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after July 9, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior Analytical Laboratory

CASE NARRATIVE

PES Environmental, Inc.
Project Number/Name: 167.0201.001
Laboratory Number: 22853

Sample Receipt

One soil sample and
One water sample were received by
Superior Analytical Laboratory on June 9, 1997.

Cooler temperature was 3.3°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analyzed for methods 8015M and 8020.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

PES Environmental, Inc.
Attn: Andrew Briefer

Project 167.0201.001
Reported on June 16, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 22853

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
B-1-4'	06/09/97	06/09/97	06/13/97	06/13/97	DF131.04	01
97060901	06/09/97	06/09/97	06/13/97	06/13/97	DF132.37	02

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
DF131.04-01	Method Blank	MB		Soil	06/13/97	06/13/97
DF131.04-02	Laboratory Spike	LS		Soil	06/13/97	06/13/97
DF131.04-03	B-1-4'	MS	22853-01	Soil	06/13/97	06/13/97
DF131.04-04	B-1-4'	MSD	22853-01	Soil	06/13/97	06/13/97
DF132.37-01	Method Blank	MB		Water	06/13/97	06/13/97
DF132.37-02	Laboratory Spike	LS		Water	06/13/97	06/13/97
DF132.37-03	MW-5	MS	22852-01	Water	06/13/97	06/13/97
DF132.37-04	MW-5	MSD	22852-01	Water	06/13/97	06/13/97

Superior
Analytical Laboratory

PES Environmental, Inc.
Attn: Andrew Briefer

Project 167.0201.001
Reported on June 16, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22853-01	B-1-4'	Soil	1.0	-
22853-02	97060901	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	22853-01 Conc. mg/kg	RL	22853-02 Conc. ug/L	RL
Gasoline Range	ND	1	360	50
Benzene	ND	0.005	150	0.5
Toluene	ND	0.005	2.1	0.5
Ethyl Benzene	ND	0.005	3.6	0.5
Xylenes	ND	0.005	6.9P	0.5
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	79		87	

Superior
Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22853
Method Blank(s)

	DF131.04-01		DF132.37-01	
	Conc.	RL	Conc.	RL
	mg/kg		ug/L	
Gasoline Range	ND	1	ND	50
Benzene	ND	0.005	ND	0.5
Toluene	ND	0.005	ND	0.5
Ethyl Benzene	ND	0.005	ND	0.5
Xylenes	ND	0.005	ND	0.5
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	90		99	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22853

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg)						
DF131.04 02 / - Laboratory Control Spikes						
Gasoline Range		10	11	110	65-135	
Benzene		0.100	0.093	93	65-135	
Toluene		0.100	0.095	95	65-135	
Ethyl Benzene		0.100	0.095	95	65-135	
Xylenes		0.300	0.29	97	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				91	50-150	
For Water Matrix (ug/L)						
DF132.37 02 / - Laboratory Control Spikes						
Gasoline Range		2000	1900	95	65-135	
Benzene		20	20	100	65-135	
Toluene		20	20	100	65-135	
Ethyl Benzene		20	20	100	65-135	
Xylenes		60	61	102	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				98	50-150	
For Soil Matrix (mg/kg)						
DF131.04 03 / 04 - Sample Spiked: 22853 - 01						
Gasoline Range	ND	10	9.5/9.3	95/93	65-135	2
Benzene	ND	0.100	0.092/0.093	92/93	65-135	1
Toluene	ND	0.100	0.092/0.092	92/92	65-135	0
Ethyl Benzene	ND	0.100	0.089/0.091	89/91	65-135	2

Superior
Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22853

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
Xylenes	ND	0.300	0.27/0.28	90/93	65-135	3
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				90/89	50-150	

For Water Matrix (ug/L)
DF132.37 03 / 04 - Sample Spiked: 22852 - 01

Gasoline Range	ND	2000	2000/2000	100/100	65-135	0
Benzene	ND	20	20/21	100/105	65-135	5
Toluene	ND	20	20/21	100/105	65-135	5
Ethyl Benzene	ND	20	20/21	100/105	65-135	5
Xylenes	ND	60	61/63	102/105	65-135	3
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				102/87	50-150	

P - There is a greater than 25% difference for detected concentration between the two GC columns.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

PES ENVIRONMENTAL, Inc.
Engineering & Environmental Services

22853

CHAIN OF CUSTODY RECORD

1682 NOVATO BOULEVARD, SUITE 100
NOVATO, CALIFORNIA 94947
(415) 899-1600 FAX (415) 899-1601

JOB NUMBER: 167.0201.001

NAME / LOCATION: Cox Cadillac, Oakland

PROJECT MANAGER: Andrew Briefer

SAMPLERS: Elizabeth Lange

RECORDER: Elizabeth Lange

DATE YR	MO	DY	TIME	SAMPLE NUMBER / DESIGNATION	SOURCE CODE	MATRIX Water	Sedim't	Soil	Oil	# CONTAINERS & PRESERV. Unpres.	H_2SO_4	HNO_3	HCl	Filtered	DEPTH IN FEET	COL MTD CD	QA CODE	ANALYSIS REQUESTED EPA 601 / 8010	EPA 602 / 8020 (BTEX)	EPA 624 / 8240	EPA 625 / 8270	TPHg by 5030 / 8015 (mod)	TPHd by 3550 / 8015 (mod)
97	06	09	1020	B-1-4'				X		1					4.0				X			X	
97	06	09	1110	9706090		X							3						X			X	
97	06	09	01																				

Please Initial:
Samples Stored in ice. 3.8
Appropriate containers
Samples preserved
VOA's without headspace
Comments: Trip Blank MB on COC

NOTE

- Standard TAT

CHAIN OF CUSTODY RECORD

		DATE	TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	6/9	1:15PM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	6/9	2:30PM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)		
DISPATCHED BY: (Signature) DATE TIME	RECEIVED FOR LAB BY: (Signature)	6/9/97	14:30

METHOD OF SHIPMENT:

WHITE–Laboratory COPY YELLOW–Project Office Copy PINK–Field or Office Copy

Superior Analytical Laboratory

PES Environmental, Inc.
1682 Novato Blvd. Suite 100
Novato, CA 94947

Date: July 15, 1997

Attn: WILL MAST

Laboratory Number : 22932

Project Number/Name : 167.0201.004
Facility/Site : COX CADILLAC

Dear WILL MAST:

Attached is Superior Analytical Laboratory report for the samples received on July 3, 1997. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after August 2, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Superior Analytical Laboratory

CASE NARRATIVE

PES Environmental, Inc.
Project Number/Name: 167.0201.004
Laboratory Number: 22932

Sample Receipt

Two soil samples and
One water sample were received by
Superior Analytical Laboratory on July 3, 1997.

Cooler temperature was 3.3°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analyzed for methods 8015M and 8020.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

PES Environmental, Inc.
Attn: WILL MAST

Project 167.0201.004
Reported on July 15, 1997

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 22932

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
B-2-5'	07/03/97	07/03/97	07/09/97	07/09/97	DG091.04	01
97070302	07/03/97	07/03/97	07/09/97	07/09/97	DG092.37	02
B-3-4'	07/03/97	07/03/97	07/09/97	07/09/97	DG091.04	03

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
DG091.04-01	Method Blank	MB		Soil	07/09/97	07/09/97
DG092.37-01	Method Blank	MB		Water	07/09/97	07/09/97
DG091.04-02	Laboratory Spike	LS		Soil	07/09/97	07/09/97
DG091.04-03	B-3-4'	MS	22932-03	Soil	07/09/97	07/09/97
DG091.04-04	B-3-4'	MSD	22932-03	Soil	07/09/97	07/09/97
DG092.37-02	Laboratory Spike	LS		Water	07/09/97	07/09/97
DG092.37-03	0825 D-6	MS	22935-02	Water	07/09/97	07/09/97
DG092.37-04	0825 D-6	MSD	22935-02	Water	07/09/97	07/09/97

Superior Analytical Laboratory

PES Environmental, Inc.
Attn: WILL MAST

Project 167.0201.004
Reported on July 15, 199

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22932-01	B-2-5'	Soil	1.0	-
22932-02	97070302	Water	1.0	-
22932-03	B-3-4'	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	22932-01 Conc. mg/kg	RL	22932-02 Conc. ug/L	RL	22932-03 Conc. mg/kg	RL
Gasoline Range	ND	1	ND	50	ND	1
Benzene	ND	0.005	ND	0.5	0.038P	0.005
Toluene	ND	0.005	ND	0.5	ND	0.005
Ethyl Benzene	ND	0.005	ND	0.5	ND	0.005
Xylenes	0.005P	0.005	ND	0.5	0.0051P	0.005
Methyl-t-butyl-ether	ND	0.05	15	5	0.18	0.05
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)	86		91		101	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22932
Method Blank(s)

	DG091.04-01		DG092.37-01	
	Conc. mg/kg	RL	Conc. ug/L	RL
Gasoline Range	ND	1	ND	50
Benzene	ND	0.005	ND	0.5
Toluene	ND	0.005	ND	0.5
Ethyl Benzene	ND	0.005	ND	0.5
Xylenes	ND	0.005	ND	0.5
Methyl-t-butyl-ether	ND	0.05	ND	5
>> Surrogate Recoveries (%) <<				
Trifluorotoluene (SS)	116		96	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22932

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg)						
DG091.04 02 / - Laboratory Control Spikes						
Gasoline Range		10	11	110	65-135	
Benzene		0.100	0.11	110	65-135	
Toluene		0.100	0.11	110	65-135	
Ethyl Benzene		0.100	0.11	110	65-135	
Xylenes		0.300	0.32	107	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				115	50-150	
For Water Matrix (ug/L)						
DG092.37 02 / - Laboratory Control Spikes						
Gasoline Range		2000	1900	95	65-135	
Benzene		20	20	100	65-135	
Toluene		20	20	100	65-135	
Ethyl Benzene		20	20	100	65-135	
Xylenes		60	61	102	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				99	50-150	
For Soil Matrix (mg/kg)						
DG091.04 03 / 04 - Sample Spiked: 22932 - 03						
Gasoline Range	ND	10	10/10	100/100	65-135	0
Benzene	0.038	0.100	0.14/0.15	102/112	65-135	9
Toluene	ND	0.100	0.11/0.10	110/100	65-135	10
Ethyl Benzene	ND	0.100	0.11/0.10	110/100	65-135	10

Superior
Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22932

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
Xylenes	0.0051	0.300	0.33/0.31	108/102	65-135	6
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				116/113	50-150	

For Water Matrix (ug/L)
DG092.37 03 / 04 - Sample Spiked: 22935 - 02

Gasoline Range	60	2000	1900/1900	92/92	65-135	0
Benzene	0.88	20	22/19	106/91	65-135	15
Toluene	ND	20	20/18	100/90	65-135	11
Ethyl Benzene	ND	20	20/18	100/90	65-135	11
Xylenes	0.92	60	62/54	102/88	65-135	15
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				97/82	50-150	

P - There is a greater than 25% difference for detected concentration between the two GC columns.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

PES Environmental, Inc.
Engineering & Environmental Services

CHAIN OF CUSTODY RECORD

1682 NOVATO BOULEVARD, SUITE 100
NOVATO, CALIFORNIA 94947
(415) 899-1600 FAX (415) 899-1601

JOB NUMBER: 167.0201.004
NAME/LOCATION: Cox Cadillac
PROJECT MANAGER: W. Mast

SAMPLERS: Chris Rosatto
RECORDER: Chris Rosatto (Signature Required)

DATE YR	MO	DY	TIME	SAMPLE NUMBER/ DESIGNATION	SOURCE CODE	MATRIX Water	Sedim't	Soil	Oil	# CONTAINERS & PRESERV Unpres.	H_2SO_4	HNO_3	HCl	Filtered	DEPTH IN FEET	COL MTD CD	QA CODE
97	07	03	1007	B-2-5'				X		1							
97	07	03	1020	97070302		X							3				
97	07	03	1100	B-3-4'				X		1							

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020 (BTEX)	EPA 624/8240	EPA 625/8270	TPHg by 5030/8015 (mod)	TPHd by 3550/8015 (mod)
	X				X	
	X				X	
	X				X	

Please Initial: _____
Samples Stored in ice. yes T=3.5°C
Appropriate containers yes
Samples preserved yes
VOA's without headspace yes
Comments: _____

NOTES

Standard TAT

CHAIN OF CUSTODY RECORD

		DATE	TIME
RELINQUISHED BY: (Signature) Chris Rosatto	RECEIVED BY: (Signature) ERC	7/3/97	12:35 PM
RELINQUISHED BY: (Signature) RG	RECEIVED BY: (Signature)	7/3/97	1:06 PM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
DISPATCHED BY: (Signature)	DATE TIME	RECEIVED FOR LAB BY: (Signature)	DATE 7/3/97 TIME 1:06 PM

METHOD OF SHIPMENT:

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

Superior Analytical Laboratory

PES Environmental, Inc.
1682 Novato Blvd. Suite 100
Novato, CA 94947

Date: July 25, 1997

Attn: Andrew Briefer

Laboratory Number : 22979

Project Number/Name : 167.0201.001
Facility/Site : COX CADILLAC
OAKLAND, CA

Dear Andrew Briefer:

Attached is Superior Analytical Laboratory report for the samples received on July 17, 1997. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after August 16, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

RECEIVED JUL 2 8 1997

Superior Analytical Laboratory

CASE NARRATIVE

PES Environmental, Inc.
Project Number/Name: 167.0201.001
Laboratory Number: 22979

Sample Receipt

Five soil samples were received by Superior Analytical Laboratory on July 17, 1997.

Cooler temperature was 4.2°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analyzed for methods 8015M, 8020 and COMP.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior Analytical Laboratory

PES Environmental, Inc.
Attn: Andrew Briefer

Project 167.0201.001
Reported on July 25, 1997

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 22979

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
97071701	07/17/97	07/17/97	07/22/97	07/22/97	DG221.37	01
97071702	07/17/97	07/17/97	07/22/97	07/22/97	DG221.37	02
97071703	07/17/97	07/17/97	07/22/97	07/22/97	DG221.37	03
97071704	07/17/97	07/17/97	07/22/97	07/22/97	DG221.37	04
97071705	07/17/97	07/17/97	07/22/97	07/22/97	DG221.37	05

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DG221.37-05	Laboratory Spike Duplicate	LSD	Soil	07/22/97	07/22/97
DG221.37-01	Method Blank	MB	Soil	07/22/97	07/22/97
DG221.37-02	Laboratory Spike	LS	Soil	07/22/97	07/22/97
DG221.37-03	97071703	MS 22979-03	Soil	07/22/97	07/22/97
DG221.37-04	97071703	MSD 22979-03	Soil	07/22/97	07/22/97

Superior
Analytical Laboratory

PES Environmental, Inc.
Attn: Andrew Briefer

Project 167.0201.001
Reported on July 25, 1997

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22979-01	97071701	Soil	1.0	-
22979-02	97071702	Soil	1.0	-
22979-03	97071703	Soil	1.0	-
22979-04	97071704	Soil	5.0	-

R E S U L T S O F A N A L Y S I S

Compound	22979-01 Conc. mg/kg	22979-01 RL	22979-02 Conc. mg/kg	22979-02 RL	22979-03 Conc. mg/kg	22979-03 RL	22979-04 Conc. mg/kg	22979-04 RL
Gasoline Range	ND	1	ND	1	ND	1	32	5
Benzene	ND	0.005	0.009	0.005	ND	0.005	0.29	0.025
Toluene	ND	0.005	ND	0.005	ND	0.005	1.2	0.025
Ethyl Benzene	ND	0.005	ND	0.005	ND	0.005	0.58	0.025
Xylenes	ND	0.005	0.013	0.005	ND	0.005	3.1	0.025
Methyl-t-butyl-ether	ND	0.05	ND	0.05	ND	0.05	ND	0.25
>> Surrogate Recoveries (%) <<								
Trifluorotoluene (SS)	75		78		64		94	

Superior Analytical Laboratory

PES Environmental, Inc.
Attn: Andrew Briefer

Project 167.0201.001
Reported on July 25, 1997

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
22979-05	97071705	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	22979-05 Conc. mg/kg	RL
Gasoline Range	ND	1
Benzene	ND	0.005
Toluene	ND	0.005
Ethyl Benzene	ND	0.005
Xylenes	ND	0.005
Methyl-t-butyl-ether	ND	0.05
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	82	

Superior
Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22979
Method Blank(s)

	DG221.37-01 Conc. mg/kg	RL
Gasoline Range	ND	1
Benzene	ND	0.005
Toluene	ND	0.005
Ethyl Benzene	ND	0.005
Xylenes	ND	0.005
Methyl-t-butyl-ether	ND	0.05
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	86	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons, MTBE, and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 22979

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg)						
DG221.37 02 / 05 - Laboratory Control Spikes						
Gasoline Range		10	11/10	110/100	65-135	10
Benzene		0.100	0.083/0.079	83/79	65-135	5
Toluene		0.100	0.090/0.083	90/83	65-135	8
Ethyl Benzene		0.100	0.091/0.077	91/77	65-135	16
Xylenes		0.300	0.28/0.24	93/80	65-135	15
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				83/69	50-150	
For Soil Matrix (mg/kg)						
DG221.37 03 / 04 - Sample Spiked: 22979 - 03						
Gasoline Range	ND	10	8.3/8.5	83/85	65-135	2
Benzene	ND	0.100	0.067/0.06	67/60	65-135	0
Toluene	ND	0.100	0.067/0.061	67/61	65-135	0
Ethyl Benzene	ND	0.100	0.066/0.059	66/59	65-135	0
Xylenes	ND	0.300	0.20/0.17	67/57	65-135	5
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				64/58	50-150	

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

PES ENVIRONMENTAL, Inc.
Engineering & Environmental Services

1682 NOVATO BOULEVARD, SUITE 100
NOVATO, CALIFORNIA 94947
(415) 899-1600 FAX (415) 899-1601

CHAIN OF CUSTODY RECORD

JOB NUMBER: 167.0201.001

NAME / LOCATION: Cox Cadillac Oakland

PROJECT MANAGER: Andy Briefer

SAMPLERS: Marcus Trotta

RECORDER: Marcus Trotta

DATE YR	MO	DY	TIME	SAMPLE NUMBER / DESIGNATION	SOURCE CODE	MATRIX: Water	Sedim't	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	Filtered	DEPTH IN FEET	COL MTD CD	QA CODE
97	07	17	1300	97071701	48			X		1						30	1d
			1310	97071702						1							
			1315	97071703						1							
			1330	97071704						4							
			1350	97071705						4							

ANALYSIS REQUESTED	EPA 601 / 8010	EPA 602 / 8020 (BTEX)	EPA 624 / 8240	EPA 625 / 8270	TPHg by 5030 / 8015 (mod)	TPHd by 3550 / 8015 (mod)	
		X			X	X	MTBE
	X	X			X	X	
	X	X			X	X	
	X	X			X	X	3 Composite 4 vol
	X	X			X	X	3 Composite 4 vol

Please Initial:
Samples Stored in ice. DAT
Appropriate containers DAT
Samples preserved DAT
VOA's without headspace DAT
Comments:

NOTE

5 day TAT

Please composite sample 97071704 (4 vol)

& 97071705 (4 vol)

Fax results to Andy Briefer at PES

CHAIN OF CUSTODY RECORD

	RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TIME
1			7/17/97	2:05
2			7/17/97	2:36
3				
4				
DISPATCHED BY: (Signature)	DATE	TIME	RECEIVED FOR LAB BY: (Signature)	DATE / TIME
				7/17/97 14:30

METHOD OF SHIPMENT: Courier to Lab

WHITE–Laboratory COPY YELLOW–Project Office Copy PINK–Field or Office Copy

APPENDIX D

WELL DEVELOPMENT AND SAMPLING FORMS

PES Environmental, Inc.
Engineering & Environmental Services

WELL DEVELOPMENT FORM

Page:	2 of 4
Date/Time:	12-29-98
Project Name:	Cox Cadillac
Job No.:	167.0201.004
Recorded By:	James Allen
Sampled By:	

Well No.: TW-2	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 6.10

Water-Level Depth (WL in feet below top of casing): 2.80

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

(6.1 (Well Depth) − 2.8 (Depth to Water)) × 2 (Well Diameter)^2 × 10 casing volumes × 0.0408 = 5.39 (Calculated Purge Volume) gallons

FIELD PARAMETER MEASUREMENT

This well is the second well worked on of the day

——→ START TIME 1325 (2)

Minutes Since Pumping	Gallons Removed	pH	x 1000 Conductivity	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
1330	1	8.3	4.31	55	X	Orangeish, brown No distinctive odor
1343	2	8.27	4.13	55	X	Turbo Meter Not used. Cloudy, orangish
1550 1350	3	8.35	4.13	55	X	" " orangish, brown cloudy. No odor
1600 1400	4	8.48	4.32	56.1	X	light orange, beige, cloudy water, NO ODOR
1609	4.8	8.37	4.66	54.5	X	" " " very cloudy, no odor. ~~Arthur~~

——→ DEVELOPMENT COMPLETION TIME _____ TOTAL GALLONS REMOVED _____

PES Environmental, Inc.
Engineering & Environmental Services

WELL DEVELOPMENT FORM

Page:	1 of 4
Date/Time:	12-29-98
Project Name:	Cox Cadillac
Job No.:	167.0201.004
Recorded By:	James Allen
Sampled By:	

Well No.: TW-6	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 7.61

Water-Level Depth (WL in feet below top of casing): 5.12

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

(7.61 (Well Depth) - 5.12 (Depth to Water)) x 2 (Well Diameter)^2 x 10 casing volumes x 0.0408 = 4.06 (Calculated Purge Volume) gallons

FIELD PARAMETER MEASUREMENT

-------> START TIME 1430

Minutes Since Pumping	Gallons Removed	pH	Conductivity	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
1430	0					(Start Time)
1435	1	8.3	2.04	66°	x	(Conduct: k1000) µs/cm / milky yellow, cloudy,
1452	2	8.51	1.87	67°	x	Turb Meter not working: gray, yellow milky
	~~3~~					Strong hydrocarbon odor
1509	3	~~8.47~~	~~1.85~~	~~66°~~	~~x~~	Run dry. Moved to next well.

-------> DEVELOPMENT COMPLETION TIME _____ TOTAL GALLONS REMOVED _____

PES Environmental, Inc.
Engineering & Environmental Services

WELL DEVELOPMENT FORM

Page:	4 of 4
Date/Time:	12-29-98
Project Name:	Cox Cadillac
Job No.:	167.0201.004
Recorded By:	Chris Rossiter
Sampled By:	

Well No.: TW-7	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
	Well Material:	☐ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 9.67

Water-Level Depth (WL in feet below top of casing): 4.86

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

(9.67 (Well Depth) − 4.86 (Depth to Water)) × 2 (Well Diameter)^2 × 10 casing volumes × 0.0408 = 7.85 (Calculated Purge Volume) gallons

FIELD PARAMETER MEASUREMENT

——————> START TIME 1805

Minutes Since Pumping	Gallons Removed	pH	Conductivity (x1000)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
1810	1	8.04	0.79	54	X	V. dark gray, medium odor (hydro)
1817	2	7.06	78	56	X	" " "
1827	3	7.53	0.76	56	X	Minor odor, dark gray, cloudy
1835	4	8.02	0.77	F 56	X	" " "

——————> DEVELOPMENT COMPLETION TIME _____ TOTAL GALLONS REMOVED _____

PES Environmental, Inc.
Engineering & Environmental Services

WELL DEVELOPMENT FORM

Page:	3 of 4
Date/Time:	12-29-98
Project Name:	Cox Cadillac
Job No.:	167.0201.004
Recorded By:	Chris Rossitto
Sampled By:	

Well No.:							
MW-1	Well Type:	☒ Monitoring	☐ Extraction	☐ Other			
	Well Material:	☐ PVC	☐ Stainless Steel	☐ Other			

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 19.89

Water-Level Depth (WL in feet below top of casing): 2.59

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

(19.89 (Well Depth) - 2.59 (Depth to Water)) x 2 (Well Diameter)^2 x 10 casing volumes x 0.0408 = 28.23 gallons (Calculated Purge Volume)

FIELD PARAMETER MEASUREMENT

----------> START TIME 1640

Minutes Since Pumping	Gallons Removed	pH	x 1000 Conductivity	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.) NOT touch
1643	1	8.35	4.7 ~~5.5~~	49	X	STRONG Gasoline/Hydrocarb odor, Gray H_2O
1655	2					Strong Hydro odor, Greenish gray cloudy
	3					" " " Non-transparent H_2O
	4					No Sheen, but 1 or 2mm in diameter
1705	5	9.20	~~14.21~~	~~50~~ 48.5	X	droplets form at the top of bailed
	6		14.21			water collected in 5g bucket. (color same
						odor SAME (STRONG), V. cloudy greenish
	7					
	8					
	9					
1720	10	8.06	3.75	49	X	greenish, darker gray very cloudy
	11					Strong Sm odor, hydro SHEEN
	12					
	13					
1740	14	8.11	3.7	57	X	STOPPED BAILING at 14 g.
~~1740~~	15					Water is lighter gray, ODOR STRONG
						Hydro Sheen still persists.
						Last bailer only had about
						8" of H_2O IN it. Not all full.
						H_2O level is low NOW.

----------> DEVELOPMENT COMPLETION TIME _____ TOTAL GALLONS REMOVED _____

PES Environmental, Inc.
Engineering & Environmental Services

GROUNDWATER SAMPLING FORM

Page: 1 of 1
Date/Time: 1-12-99 / 1527
Project Name: Cox Cadillac
Job No.: 167.0201.004
Recorded By: Chris Delaney
Sampled By: Chris Delaney, Chris Rossitto

Well No.:	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
MW-1	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 19.87

Water-Level Depth (WL in feet below top of casing): 2.79

PURGING METHOD

☒ Bailer - Type: Disposable
☐ Submersible ☐ Centrifugal ☐ Bladder
☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____
Depth in feet (BTOC): _____
Screen interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

$(19.87 - 2.79) \times 2^2 \times 3 \text{ casing volumes} \times 0.0408 = 8.36 \text{ gallons}$

(Well Depth − Depth to Water) × Well Diameter² × 3 casing volumes × 0.0408 = Calculated Purge Volume

FIELD PARAMETER MEASUREMENT

Dissolved O_2 (ppm) = 3.4
Temp = 18°C

→ START TIME 3:30

Time	Total Gallons Removed	pH	Conductivity (umhos/cm3)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
3:35	2	6.92	2560	57.6	>1000	Light Brown, cloudy, gassy odor w/ sheen
3:40	4	6.91	2810	60.8	>1000	Light Brown, cloudy, gassy odor w/ sheen
3:47	6	6.84	2810	62.6	>1000	Light Brown, cloudy, gassy odor w/ sheen
3:52	8	6.84	2820	61.6		Light Brown, cloudy, gassy odor w/ sheen

→ STOP TIME 3:52 → TOTAL GALLONS REMOVED 8

WELL SAMPLING

SAMPLING METHOD

Bailer - Type: Disposable

Well No.	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
MW-1	MW-1	16:36	3 VOA's	~~8020~~ 8015(mod) MTBE	HCl	

QUALITY CONTROL SAMPLES

Sample Type	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
Trip Blank						
Field Blank						
Duplicate						

PES Environmental, Inc.
Engineering & Environmental Services

Page:	1 of 1
Date/Time:	1/12/99
Project Name:	Cox - Cadillace
Job No.:	167-002-01-0004
Recorded By:	Chris Delaney/Chris Rossitto
Sampled By:	Chris Delaney/Chris Rossitto

GROUNDWATER SAMPLING FORM

*Development & Sampling

Well No.:	Well Type:					
MW-2		☒	Monitoring	☐	Extraction	☐ Other
	Well Material:	☒	PVC	☐	Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in Inches)

☒ 2-Inch ☐ 4-Inch ☐ 6-Inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 19.76

Water-Level Depth (WL in feet below top of casing): 5.62

PURGING METHOD

☐ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

$(19.76 - 5.62) \times 2\,in^2 \times 3 \text{ casing volumes} \times 0.0408 = 6.92 \text{ gallons}$

(Well Depth − Depth to Water) × Well Diameter × 3 casing volumes × 0.0408 = Calculated Purge Volume

x in casing vols = 23 gals

FIELD PARAMETER MEASUREMENT

Dissolved O_2 (ppm) = 3.0
Temp = 19°C

→ START TIME 12:30

Time	Total Gallons Removed	pH	Conductivity (umhos/cm3)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
12:34	2	4.99	4,053	59.9	0.41	Brown, Silty, no odor or sheen
12:43	5	6.84	3,520	59.0	0.69	Brown, Silty no odor or Sheen
12:08	10	6.77	4,010	58.9	0.24	Brown, Silty, no odor or sheen
13:33	15	6.81	3,790	61.3	NA	Brown, silty, no odor or sheen
13:57	20	6.83	3,580	62.2	NA	Brown, Silty, no odor or sheen
	23	6.87	3,560	61.3	NA	Brown, silty, no odor or sheen

→ STOP TIME 14:00 → TOTAL GALLONS REMOVED = 23

WELL SAMPLING

SAMPLING METHOD

Bailer - Type: Disposable

Well No.	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
MW-2	MW-2	16:13	3 VOAs	~~8010~~, 8020, 5030, 80E MTBE	HCl	

QUALITY CONTROL SAMPLES

Sample Type	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
Trip Blank						
Field Blank						
Duplicate						

PES Environmental, Inc.
Engineering & Environmental Services

GROUNDWATER SAMPLING FORM

Page: 1 of 1
Date/Time: 1/12/99
Project Name: Cox - Cadillac Oakland
Job No.: 160.0001.004
Recorded By: Chris Delaney
Sampled By: Chris Delaney, Chris Rositto

Well No.: TW-2	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____
Total Depth of Casing (TD in feet below top of casing): 7.62
Water-Level Depth (WL in feet below top of casing): 1.91

PURGING METHOD

☐ Bailer - Type: Disposable
☐ Submersible ☐ Centrifugal ☐ Bladder
☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____
Depth in feet (BTOC): _____
Screen Interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

(7.62 (Well Depth) - 1.91 (Depth to Water)) x 2 (Well Diameter)^2 x 3 casing volumes x 0.0408 = 2.79 (Calculated Purge Volume) gallons

FIELD PARAMETER MEASUREMENT

Dissolved O_2 (ppm) = 8.0
@ 6ft Temp = 16 °C

→ START TIME 3:03

Time	Total Gallons Removed	pH	Conductivity (umhos/cm3)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
3:03	0.5	6.80	3,340	59.3	>1000	Light Brown, milky, no odor or sh
3:10	1.5	6.71	3,180	58.7	>1000	Light Brown, cloudy, no odor
3:17	2.0	6.87	3,440	58.5	>1000	Light Brown, cloudy, no odor
3:26	3.0	6.80	3,760	60.6	>1000	Light Brown, cloudy, no odor no sheen

→ STOP TIME 3:29 → TOTAL GALLONS REMOVED 3.0

WELL SAMPLING

SAMPLING METHOD

Bailer - Type: Disposable

Well No.	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
TW-2	TW-2	16:27	3 VOAs	8020, 8015, MTBE	HCl	

QUALITY CONTROL SAMPLES

Sample Type	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
Trip Blank						
Field Blank						
Duplicate						

PES Environmental, Inc.
Engineering & Environmental Services

GROUNDWATER SAMPLING FORM

Page: 1 of 1
Date/Time: 1-12-99 / 1447
Project Name: Cox Cadillac
Job No.: 167.0201.004
Recorded By: Chris Possitto
Sampled By: Chris Possitto, Chris Delaney

Well No.:	Well Type:				
TW-6		☒ Monitoring	☐ Extraction	☐ Other	
	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other	

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 7.60

Water-Level Depth (WL in feet below top of casing): 5.52

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

$(\underset{\text{Well Depth}}{7.60} - \underset{\text{Depth to Water}}{5.52}) \times \underset{\text{Well Diameter}}{2}^{2} \times 3 \text{ casing volumes} \times 0.0408 = \underset{\text{Calculated Purge Volume}}{1.02} \text{ gallons}$

(2.08)

FIELD PARAMETER MEASUREMENT

Dissolved O2 (ppm) = 3.9

Temp = 19°C

----------> START TIME ~~1109~~ 1502

200 NTU

Time	Total Gallons Removed	pH	Conductivity (umhos/cm3)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
1507	0.5	7.01	1228	59.4	1500	slight milky, slight HC odor
1513	1.0	6.94	1200	59.2	>1000	No visible bacteria, milky, HC odor
1520	1.5	6.97	1290	59.8	>1000	milky, No visible bacteria on well, slight HC odor

----------> STOP TIME 1520 ----------> TOTAL GALLONS REMOVED 1.5

WELL SAMPLING

SAMPLING METHOD

Bailer - Type: Disposable

Well No.	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
TW-6	TW-6	16:22	3 VOAs	8020, 8015(mod) MTBE	HCl	

QUALITY CONTROL SAMPLES

Sample Type	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
Trip Blank						
Field Blank						
Duplicate						

PES Environmental, Inc.
Engineering & Environmental Services

GROUNDWATER SAMPLING FORM

Page:	1 of 1
Date/Time:	1-12-99 / 1302
Project Name:	Cox Cadillac
Job No.:	167.0201.004
Recorded By:	Chris Rossitto
Sampled By:	Chris Rossitto, Chris Delaney

Well No.:	Well Type:	☒ Monitoring	☐ Extraction	☐ Other
TW-7	Well Material:	☒ PVC	☐ Stainless Steel	☐ Other

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches)

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other _____

Total Depth of Casing (TD in feet below top of casing): 9.67

Water-Level Depth (WL in feet below top of casing): 4.81

PURGING METHOD

☒ Bailer - Type: Disposable

☐ Submersible ☐ Centrifugal ☐ Bladder

☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC) from _____ to _____

PURGE VOLUME CALCULATIONS:

$$\left(\underset{\text{Well Depth}}{9.67} - \underset{\text{Depth to Water}}{4.81}\right) \times \underset{\text{Well Diameter}}{2}{}^{2} \times 3 \text{ casing volumes} \times 0.0408 = \underset{\text{Calculated Purge Volume}}{2.4} \text{ gallons}$$

(4.86 − 4.81 = 0.8)

FIELD PARAMETER MEASUREMENT

Dissolved O_2 (ppm) = 2.7 @ 16° C

----------> START TIME 1310

Time	Total Gallons Removed	pH	Conductivity (umhos/cm3)	Temperature	Turbidity	Observations (color, well condition, odor, cloudiness, etc.)
1317	0.5	6.87	693	58.4	>1000	milky, slight silt, HC odor, no sheen
1329	1.0	6.87	705	60.2	>1000	milky gray, silt, HC odor, No sheen.
1337	1.5	6.93	683	60.3	>1000	milky gray, silt, HC odor, No sheen.
1342	2.5	6.89	701	60.2	>1000	milky gray, HC odors

----------> STOP TIME 1342 ----------> TOTAL GALLONS REMOVED 2.5

WELL SAMPLING

SAMPLING METHOD

Bailer - Type: Disposable

Well No.	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
TW-7	TW-7	16:08	3 VOAs	8020, 8015 (mod), MTBE	HCl	

QUALITY CONTROL SAMPLES

Sample Type	Sample No.	Time	Volume Collected	Analyses Requested	Preservatives	Laboratory
Trip Blank						
Field Blank						
Duplicate						

APPENDIX E

NON-HAZARDOUS WASTE MANIFESTS

Soil Recycling Certificate

TPS Technologies Inc. does hereby certify

that 67.24 tons of petroleum - contaminated soil

received from

Bill Cox Cadillac
PES Environmental, Inc. (Consultant)
230 Bay Place
Oakland, CA

Under Manifest/authorization number 04-00193

have been properly recycled to approved regulatory standards

at our Soil Recycling Facility in Oakland, CA

Dated this 1st day of Nov., 19 97

Sworn and Attested by:
TPS Technologies Inc.

By: _____

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

Manifest #

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
10/9/97	Consultant	101	A04	00193	005

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
Pauson Bridgett et. al. 333 Market Street Suite 2300 San Francisco, CA 90128 USA	(415) 777-3200 Person to Contact: FAX#:	Customer Account Number with TPS: 4PAUSON
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
PES Environmental 1682 Novato Blvd. Suite 100 Novato, CA 94947 USA	(415) 899-1600 Person to Contact: Chris Rossitto FAX#: (415) 899-1601	Customer Account Number with TPS: 4PESENV
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
Bill Cox Cadillac 230 Bay Place Oakland, CA 94612 USA	Person to Contact: FAX#:	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:** 510-235-8778	Facility Permit Numbers
TPS TECHNOLOGIES INC. 20 Recycling Lane Richmond, CA 94801 USA	Person to Contact: D. Murashima/C. Rice FAX#: 510-231-4154	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
ALL Waste W. Channel Road Benicia, CA 94510 USA	Person to Contact: FAX#:	Transporter's DOT No.: Customer Account Number with TPS: 4ALLWAS

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		Bin # 39	59460	28840	30620
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					15.31

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name:	Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year
	Signature	on file			

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
CHARLES M. SIMPSON	Charles M Simpson	10	09	97

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
C Rice	C Rice 10/9/97

Please print or type.

TPS INVOICING COPY

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

Manifest #

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
10-8-97	Consultant	101/35	A04	00193	004

Generator and/or Consultant

Generator's Name and Billing Address: Pauson Bridgett et. al. 333 Market Street Suite 2300 San Francisco, CA 90128 USA	Generator's Phone #: (415) 777-3200 Person to Contact: FAX#:	Generator's US EPA ID No. Customer Account Number with TPS: 4PAUSON
Consultant's Name and Billing Address: PES Environmental 1682 Novato Blvd. Suite 100 Novato, CA 94947 USA	Consultant's Phone #: (415) 899-1600 Person to Contact: Chris Rossitto FAX#: (415) 899-1601	Customer Account Number with TPS: 4PESENV
Generation Site (Transport from): *(name & address)* Bill Cox Cadillac 230 Bay Place Oakland, CA 94612 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPS TECHNOLOGIES INC. 20 Recycling Lane Richmond, CA 94801 USA	Facility Phone #: 510-235-8778 Person to Contact: D. Murashima/C. Rice FAX#: 510-231-4154	Facility Permit Numbers
Transporter Name and Mailing Address: ALL Waste W. Channel Road Benicia, CA 94510 USA	Transporter's Phone #: Person to Contact: FAX#:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS: 4ALLWAS

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		Bin #35	50080	28680	21400
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					10.70

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: Signature On File | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: JERRY LEE RUISE | Signature and date: Jerry Lee Ruise | Month: 10 | Day: 8 | Year: 97

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: C Rice | Signature and date: 10-8-97

Please print or type.

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

Manifest #

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
10-8-97	Consultant	136 / 150B	A04	00193	003

Generator and/or Consultant

Generator's Name and Billing Address:
Pauson Bridgett et. al.
333 Market Street
Suite 2300
San Francisco, CA 90128 USA

Generator's Phone #: (415) 777-3200
Person to Contact:
FAX#:
Generator's US EPA ID No.
Customer Account Number with TPS: 4PAUSON

Consultant's Name and Billing Address:
PES Environmental
1682 Novato Blvd.
Suite 100
Novato, CA 94947 USA

Consultant's Phone #: (415) 899-1600
Person to Contact: Chris Rossitto
FAX#: (415) 899-1601
Customer Account Number with TPS: 4PESENV

Generation Site (Transport from): *(name & address)*
Bill Cox Cadillac
230 Bay Place
Oakland, CA 94612 USA

Site Phone #:
Person to Contact:
FAX#:
BTEX Levels
TPH Levels
AVG. Levels

Designated Facility (Transport to): *(name & address)*
TPS TECHNOLOGIES INC.
20 Recycling Lane
Richmond, CA 94801 USA

Facility Phone #: 510-235-8778
Person to Contact: D. Murashima/C. Rice
FAX#: 510-231-4154
Facility Permit Numbers

Transporter Name and Mailing Address:
ALL Waste
W. Channel Road
Benicia, CA 94510 USA

Transporter's Phone #:
Person to Contact:
FAX#:
Transporter's US EPA ID No.:
Transporter's DOT No.:
Customer Account Number with TPS: 4ALLWAS

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		Bin 29	63660	34200	29460
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					14.73

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: Signature on File | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: CHARLES M. SIMPSON | Signature and date: Charles M. Simpson | Month: 10 | Day: 8 | Year: 97

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: C. Rice | Signature and date: 10-8-97

Please print or type.

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
10/8/97	Consultant	101/35	A04	00193	002

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
Pauson Bridgett et. al. 333 Market Street Suite 2300 San Francisco, CA 90128 USA	(415) 777-3200	
	Person to Contact:	
	FAX#:	Customer Account Number with TPS: 4PAUSON
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
PES Environmental 1682 Novato Blvd. Suite 100 Novato, CA 94947 USA	(415) 899-1600	
	Person to Contact: Chris Rossitto	
	FAX#: (415) 899-1601	Customer Account Number with TPS: 4PESENV
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	**BTEX Levels**
Bill Cox Cadillac 230 Bay Place Oakland, CA 94612 USA	Person to Contact:	TPH Levels
	FAX#:	AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	**Facility Permit Numbers**
TPS TECHNOLOGIES INC. 20 Recycling Lane Richmond, CA 94801 USA	510-235-8778	
	Person to Contact: D. Murashima/C. Rice	
	FAX#: 510-231-4154	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	**Transporter's US EPA ID No.:**
ALL Waste W. Channel Road Benicia, CA 94510 USA		
	Person to Contact:	Transporter's DOT No.:
	FAX#:	Customer Account Number with TPS: 4ALLWAS

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
☐ Sand ☐ Organic ☐ Clay ☐ Other	☐ 0 - 10% ☐ 10 - 20% ☐ 20% - over	☐ Gas ☐ Diesel ☐ Other			50000	28680	21320
☐ Sand ☐ Organic ☐ Clay ☐ Other	☐ 0 - 10% ☐ 10 - 20% ☐ 20% - over	☐ Gas ☐ Diesel ☐ Other					10.66

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: ☐ Generator ☐ Consultant — Signature and date: — Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: TERRIE LEE RUISE — Signature and date: Terrie Lee Ruise — Month: 10 | Day: 08 | Year: 97

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: C. RICE — Signature and date: C. Rice 10/8/97

Please print or type.

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

Manifest #

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
	Consultant	136/1508	A04	00193	001

Generator and/or Consultant

Generator's Name and Billing Address: Pauson Bridgett et. al. 333 Market Street Suite 2300 San Francisco, CA 90128 USA	Generator's Phone #: (415) 777-3200 Person to Contact: FAX#:	Generator's US EPA ID No. Customer Account Number with TPS: 4PAUSON
Consultant's Name and Billing Address: PES Environmental 1682 Novato Blvd. Suite 100 Novato, CA 94947 USA	Consultant's Phone #: (415) 899-1600 Person to Contact: Chris Rosetto FAX#: (415) 899-1601	 Customer Account Number with TPS: 4PESENV
Generation Site (Transport from): *(name & address)* Bill Cox Cadillac 230 Bay Place Oakland, CA 94612 USA	Site Phone #: Person to Contact: FAX#:	BTEX Levels TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)* TPS TECHNOLOGIES INC. 20 Recycling Lane Richmond, CA 94801 USA	Facility Phone #: 510-235-8778 Person to Contact: D. Murashima/C. Rice FAX#: 510-231-4154	Facility Permit Numbers
Transporter Name and Mailing Address: ALL Waste W. Channel Road Benicia, CA 94510 USA	Transporter's Phone #: Person to Contact: FAX#:	Transporter's US EPA ID No.: Transporter's DOT No.: Customer Account Number with TPS: 4ALLWAS

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		Bin 29	65880	34200	31680
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					15.84

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ Signature and date: Signature on file Month Day Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: CHARLES M. SIMPSON Signature and date: Charles M. Simpson Month 10 Day 8 Year 97

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: C. Rice Signature and date: C. Rice 10/08/97

Please print or type.