FINAL REPORT HAZARDOUS WASTE PRELIMINARY SITE INVESTIGATION TASK ORDER NUMBER 04-952137-ES CONTRACT NUMBER 43A0012

SIXTH AND CASTRO STREETS OAKLAND, CALIFORNIA

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prepared for

CALIFORNIA DEPARTMENT OF TRANSPORTATION District 4

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Caltrans for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted identified any or all sources or locations of contamination.

This report is issued with the understanding that Caltrans is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This Workplan has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Chris Mervitt for Frank R. Poss, R.E.A. Senior Hydrogeologist

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Senior Geologist

1 INTRODUCTION

Professional Service Industries, Inc. (PSI) was retained by the California Department of Transportation (Caltrans), under Task Order Number 04-952137-ES and Contract Number 43A0012, to conduct a hazardous waste site assessment of current soil and groundwater conditions at the property located at the intersection of 6th and Castro Streets in Oakland, California. The subject site location is presented on Figure 1.

The scope of work for this investigation included:

- Drill 11 soil borings to collect soil and groundwater samples.
- Based on the results of samples collected in the 11 soil borings, drill three more borings to construct three groundwater monitoring wells.
- Develop, survey, and sample the installed groundwater monitoring wells.
- Perform chemical analyses on soil and groundwater samples.
- Prepare a technical report describing the investigation and interpretation of the data generated.

1.1 PROJECT OBJECTIVE

The object of the project is to determine the concentrations of selected potentially hazardous constituents in soil and groundwater. Analytical results from the soil and groundwater investigation will be examined with respect to regulatory criteria and published guidelines. The purpose of this workplan is to define the scope of work and to describe the methodology to be utilized to complete the scope of work.

1.2 SITE DESCRIPTION AND HISTORY

The site is currently a vacant lot that is surrounded by Brush Street to the west, 7th Street to the north, Castro Street to the east, and 6th Street to the south. In 1987, ERM-West Consultants (ERM) conducted an environmental site assessment to identify any environmental concerns at the above site resulting from past uses of the site. Historical records searches determined that the site had formerly been occupied by a number of businesses, most notably a gas station, an auto repair garage, Durham Farm Creamery, a machine shop, and a laundry facility. At least four underground storage tanks (USTs) were associated with the former gas station and dairy (IT, 1996). A service station was located at the intersection of 6th Street and Brush Street (Geocon, 1995).

ERM drilled seven soil borings at the site to collect soil samples for analyses. Analyses of the soil samples identified up to 1.3 parts per million (ppm) ethylbenzene, 1.5 ppm toluene, and 7.9 ppm xylenes. Groundwater samples collected drilling had concentrations up to 0.5 ppb ethylbenzene, 0.3 ppb toluene, and 5 ppb total xylenes (ACHCSA, 1998).

In a 1995 investigation conducted by Geocon Environmental Consultants (Geocon), soil and groundwater samples were collected from seven locations. Analyses of the soil samples identified up to 410 ppm lead and 8,000 ppm oil and grease. The two groundwater samples analyzed did not contain detectable concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G); TPH as Diesel (TPH-D); and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) (IT,1996).

In a 1996 investigation conducted by International Technology Corporation (IT), soil and groundwater samples were collected from 11 borings. The analytical data tables and figures which post the data prepared by IT are included in Appendix A. The maximum concentration in the soil samples analyzed are presented below:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	1,100 ppm
Benzene	2.6 ppm
Toluene	34 ppm
Ethylbenzene	25 ppm
Total Xylenes	140 ppm
Total Lead	397 ppm

The maximum concentration in the four groundwater samples analyzed were the following:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	1,700 ppb
Benzene	51 ppb
Toluene	200 ppb
Ethylbenzene	59 ppb
Total Xylenes	290 ppb
1,2 Dichloroethane	5.4 ppb

2 PRE-FIELD ACTIVITIES

A Task Order Meeting was completed on May 3, 1999, with Mr. Frank Poss and Ms. Chris Zdunkiewicz of Caltrans in attendance. The primary purpose of the meeting was to familiarize PSI with site conditions that may impact field operations.

Prior to initiation of field activities, PSI marked the drilling locations with white paint and contacted Underground Service Alert a minimum of 48-hours prior to beginning work to locate any potential buried utilities.

A site-specific Health and Safety Plan (HSP) was developed in compliance with 29 CFR 1910.120, under the supervision of a Certified Industrial Hygienist. The HSP was designed to address the potential hazardous materials that may be encountered during field activities at the site and to minimize the exposure to potentially hazardous materials and unsafe working conditions to on-site personnel (PSI, 1999).

3 SUBSURFACE INVESTIGATION

3.1 SOIL BORINGS

On May 19 and May 20, 1999, Borings OAK-1 through OAK-11 were drilled at the site using a Geoprobe direct push drill rig. On June 17, 1999, three soil borings were drilled to install groundwater monitoring wells MW-1 through MW-3 using a hollow stem auger drilling rig. V&W Drilling of Rio Vista, California provided drilling and well construction services.

The direct push borings were advanced using a 0.038 meter (1.5-inch) diameter core sampler fitted with a retractable tip and lined with acetate sleeves. Soil samples were collected from each boring at depths of 0.15, 0.30, 0.90, 1.5, 3.0, and 4.5 meters (0.5, 1, 3, 10, and 15 feet) below ground surface (bgs). Boring OAK-1 was drilled to a depth of 5.9 meters (19.5 feet) bgs; Borings OAK-2, OAK-3, OAK-4, OAK-7, OAK-8, OAK-9, and OAK-11 were drilled to 6.1 meters (20.0 feet) bgs; and Boring OAK-5 was drilled to 6.8 meters (22.5 feet) bgs.

Three monitoring wells were installed in locations based on interpretation of the data collected in PSI's investigation and previously collected data (IT, 1996). The well locations were selected to provide information on the groundwater quality across the site and in locations which allow adequate characterization of the groundwater flow direction. At the time of the well installation, the groundwater flow was anticipated to be to the south, therefore Wells MW-2 and MW-3 were installed near the southern property boundary. Well MW-1 was installed in the anticipated upgradient direction of Well MW-2 where groundwater contaminants were detected in grab groundwater samples from the direct push soil borings. Soil and groundwater contaminants are discussed in Section 5.

The hollow stem auger borings were advanced using an eight-inch outside diameter hollow stem auger. Samples were collected in a split spoon sampler lined with stainless steel sleeves. The sampler was driven with a 140-pound hammer repeatedly dropped 30-inches. The blow count required to drive the sampler 18-inches is recorded on the boring logs. Soil samples were collected from each boring at depths of 0.15, 0.30, 0.90, 1.5, 3.0, and 4.5 meters (0.5, 1, 3, 10, and 15 feet) below ground surface (bgs). Boring MW-1 was drilled to a depth of 6.1 meters (20 feet), Boring MW-2 was drilled to a depth of 6.5 meters (21.5 feet) bgs, Boring MW-3 was drilled to a depth of 6.4 meters (21 feet) bgs.

Soils were logged according to the "Soil and Rock Logging Classification Manual" of the State of California, Department of Transportation. The Caltrans soil classification manual is consistent with the Unified Soil Classification System. Boring logs are presented in Appendix B. Soils observed during drilling activities consisted primarily of silty and

clayey sands. Groundwater was encountered approximately 4.3 meters (14 feet) below ground surface (bgs).

Lithologic cross section locations are presented on Figure 2. Cross sections are presented on Figures 3 and 4.

The soil samples were logged on chain-of-custody records and transported to Centrum Analytical of Redlands, California, a California Department of Health Services certified hazardous materials testing laboratory, following chain-of-custody protocol. The samples were maintained in a cooler with ice, or a refrigerator until transported to the analytical laboratory. The analytical results are described in Section 4.

3.2 MONITORING WELL INSTALLATION

On June 17, 1999, three groundwater monitoring wells were constructed in the soil borings drilled with the hollow stem auger drilling rig. Well construction details are presented in Appendix B. Well installation was performed by V&W Drilling of Rio Vista, California, with oversight by PSI. The wells were permitted through the Alameda County Department of Public Works. A copy of the permit is included in Appendix B.

The wells were constructed of 0.051 meter (2-inch) inside diameter, Schedule 40 Polyvinyl Chloride (PVC) casing with 0.00051 meter (0.020-inch) machine-slotted screen from 2 to 5 meters (5 to 15 feet) bgs. Number three washed sand was used for the filter pack. Hydrated bentonite pellets were placed above the sand pack and neat cement was placed above the bentonite, to grade level.

The top of the well casings were completed above the ground surface. Tamper resistant, monument style, wellhead covers were set in concrete above surface grade because the property is not paved. The well casing and the surface elevations are presented in Table 3.

3.3 WELL DEVELOPMENT

Well development was performed after the grout had cured for at least 24 hours. Well development occurred on date July 2, 1999. Wells were developed by surging and bailing. Water was removed until the groundwater was relatively clear.

Development water was collected in 55-gallon drums for proper disposal. Following completion of the well installation, the newly installed well casings and boring locations were surveyed by a professional Land Surveyor. The surveyor's report is presented in Appendix C. Elevation and location were surveyed to accuracy of at least 0.003 m (0.01 foot) vertically and 0.003 m (0.01 foot) horizontally.

3.4 GROUNDWATER SAMPLING

3.4.1 Groundwater Elevation and Hydraulic Gradient

On July 2, 1999 depth to groundwater measurements were collected from the three site groundwater monitoring wells. The groundwater depths were measured using a groundwater probe. Based on a lack of product sheen or measurable thickness of product in sampling bailers, floating product was not encountered in any of the wells. The groundwater measurements were converted to groundwater elevation data. The data is presented in Table 3 and Figure 5. The calculated groundwater flow direction is to the east with a hydraulic gradient of 0.0057 meter per meter (foot per foot). Calculation of the hydraulic gradient is presented below:

$$0.8 \text{ feet} / 140 \text{ feet} = 0.0057$$

The calculated groundwater flow direction is not consistent with the anticipated groundwater flow direction interpreted from the United States Geological Survey's topographic map titled, Oakland West. Interpretation of the topographic map indicates groundwater would be expected to flow to the south, towards the Alameda Channel. The deviation from the expected direction may be due to operation of groundwater extraction well(s) for industrial use, dewatering of underground structures, or localized hydrogeology.

3.4.2 Groundwater Sampling

Groundwater samples were collected from soil borings and the monitoring wells. Grab groundwater samples collected from the soil borings drilled May 19 and 20, 1999 were collected without purging. Groundwater samples collected from the monitoring wells were collected after developing and purging the monitoring wells. Groundwater samples collected from groundwater monitoring wells are considered a better indicator of groundwater quality.

Prior to the collection of groundwater samples, the monitoring wells were purged of a minimum of three well volumes of water until pH, conductivity, and temperature stabilized. The wells were allowed to recover to at least 80 percent of their original static groundwater levels prior to sampling.

The following procedures for well monitoring, well purging, and water sampling were implemented while sampling the wells:

 All equipment was washed prior to entering the well with an Alconox solution, followed by one tap water rinse and a deionized water rinse.

- Prior to purging the wells, depth-to-water was measured using a groundwater interface probe to an accuracy of 0.003 meters (0.01 foot). The measurements were made to the top of the well casing.
- Water samples were collected with a single-use Teflon bailer after the well had been purged and water in the well had equilibrated to approximately 80 percent of the static water level. The water collected was immediately decanted into laboratory supplied vials and bottles. The containers were overfilled, capped, labeled, and placed in a chilled cooler prior to delivery to the laboratory for analysis.
- Chain-of-custody procedures, including chain-of-custody forms, were used to document water sample handling and transport from collection to delivery to the laboratory for analyses.
- Groundwater samples were delivered to the State-certified hazardous waste laboratory in good condition and in accordance with the analytical methods employed.
- Purged water was contained in a DOT approved 55-gallon drum. The drum was labeled with the contents, date, well number, client name, and project number.

4 LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation were submitted to Centrum Analytical, a State of California Department of Health Services certified hazardous waste laboratory. A summary of the types of analyses and analytical methods is presented below.

Soil and groundwater samples collected were analyzed for the following:

- EPA Method 8015 modified TPH-G:
- EPA Method 8015 modified TPH-D;
- EPA Method 1664 Oil & Grease;
- EPA Method 8260 Volatile Organic Compounds (VOCs), including fuel oxygenates, ethylene dibromide, and ethylene dichloride
- EPA Method 6010 Lead
- CAC Title 22 Method 66700 Waste Extraction Test
- SW-846 Method 1311 Toxicity Characteristic Leaching Procedure

Additionally, one soil sample from each boring scheduled to be a monitoring well was analyzed for the following constituents:

- Total Organic Carbon according to EPA Method 9060
- Soil Porosity
- Moisture Content in accordance with ASTM-2216

During monitoring well sampling, the following parameters were measured:

- pH (field measurement)
- Conductivity (field measurement)
- Temperature (field measurement)

5 LABORATORY RESULTS

A summary of the analytical results are presented in Tables 1, 2, and 4. A copy of the laboratory reports and chain-of-custody records are included in Appendix D.

5.1 LABORATORY ANALYTICAL RESULTS - SOIL

Table 5 presents a statistical analysis of the soil analytical data. For each contaminant a count of concentrations reported above the detection limit, a concentration maximum, a concentration average, and concentration standard deviation is provided.

5.1.1 Oil and Grease

The soil oil and grease analytical results are presented in Table 1 and Figure 6. Oil and grease was detected from samples collected in every soil boring. In general, the concentrations of oil and grease decreased below a depth of 0.9 meter (3 feet). Measurable concentrations of oil and grease extend to the depth of the water table.

The source of the oil and grease cannot be determined from the information that is available to date. Review of the Historical Site Plan presented on Figure 8 reveals a number of businesses which typically handle or store petroleum products. It is likely that the contaminants observed at the site are the result of numerous spills at several locations at the site.

The IT investigation identified oil and grease in some of the deepest samples analyzed which were collected at a depth of 1.98 meters (78 inches)(IT, 1996). Five of the eleven samples collected at a depth of 1.98 meters and chemically analyzed, contained measurable oil and grease. The oil and grease concentrations ranged from 60 to 80 mg/kg. The average concentration was 64.

In the PSI investigation, the average concentration was 197.6 mg/kg; the concentrations ranged from 3,000 mg/kg to 10.0 mg/kg.

5.1.2 Total Petroleum Hydrocarbons - Diesel

The TPH-D analytical results are presented in Table 1 and Figure 6. TPH-D was detected in all of the soil borings except OAK9 and OAK11. The concentrations of TPH-D are generally below 100 mg/kg. Two samples (OAK-1-4.5 [120 mg/kg] and OAK-8-0.90 [120 mg/kg]) contained TPH-D at concentrations above 100 mg/kg.

TPH-D occurs near the surface in most soil borings and decreases with depth except in Borings OAK1 and OAK2, where the only concentration of TPH-D was reported in the

deepest soil samples collected. This may indicate limited contamination of the capillary fringe in the area of Borings OAK1 and OAK2. IT did not report detectable concentrations of TPH-D in soil samples collected in the unsaturated zone (IT, 1996). It is observed that the samples collected by IT at a depth of 4.4 meters (174 inches) bgs, which is close to the water table in PSI's investigation did not contain TPH-D. It is unknown why the IT investigation did not detect TPH-D in their samples.

The average concentration was 29.8 mg/kg; the concentrations ranged from 120 mg/kg to 11 mg/kg.

5.1.3 Total Petroleum Hydrocarbons - Gasoline

The TPH-G analytical results are presented in Table 1 and Figure 6. TPH-G was detected in three soil borings (OAK1, OAK2, and OAK3).

In Boring OAK1, the sample containing TPH-G was collected at the surface, and the concentration was low (2.0 mg/kg). TPH-G was not detected in Borings OAK2 or OAK3 in near surface samples. The TPH-G detected in Borings OAK2 and OAK3 was reported in samples collected from the capillary fringe zone. TPH-G was reported in Sample OAK-1-4.5 (600 mg/kg) and OAK-2-4.5 (99 mg/kg). The distribution of TPH-G in soil samples is similar to the distribution of TPH-D in soil samples. The IT investigation reported analytical results and distribution of contaminants consistent wit the PSI investigation, although TPH-G at slightly higher concentrations (IT, 1996).

The average concentration was 233.7 mg/kg; the concentrations ranged from 600 mg/kg to 2.0 mg/kg.

5.1.4 Benzene, Toluene, Ethylbenzene, and Xylenes

The BTEX analytical results are presented in Table 1 and Figure 6. BTEX compounds were detected in four soil borings. The distribution and depth of the BTEX compounds is consistent with the distribution of TPH-G. Ethylbenzene and xylenes were detected in Boring OAK6; no TPH-G was detected in Boring OAK6.

Benzene was detected in Samples OAK-2-4.5 (0.21 mg/kg) and OAK-1-3.0 (0.002 mg/kg). The benzene concentrations are below the U.S. Environmental Protection Agency's Preliminary Remediation Goal (PRG) for industrial soil of 1.4 mg/kg. Toluene, ethylbenzene, and/or xylenes were detected in samples from Borings OAK1, OAK2, OAK3, and OAK6. None of the BTEX compounds were detected at concentrations above the PRG for industrial soil. The PRGs for industrial soil for toluene (520 mg/kg), ethylbenzene (230 mg/kg) and xylenes (210 mg/kg) are substantially higher than observed concentrations. The IT investigation reported analytical results and distribution of contamination consistent with the PSI investigation. Soil concentrations of benzene were slightly higher in the IT investigation (IT, 1996).

The average benzene concentration was 0.106 mg/kg; the concentrations ranged from 0.21 mg/kg to 0.002 mg/kg.

5.1.5 Methyl Tert Butyl Ether and Volatile Organic Compounds

The MTBE and VOC analytical results are presented in Table 1 and Figure 6. No MTBE was detected in any soil sample collected at the site. IT did not report analytical results for MTBE (IT, 1996).

Fuel related VOCs were detected in 9 of 11 soil borings. The fuel related hydrocarbons consisted of isopropylbenzene, napthalene, n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. The highest concentrations of VOCs were detected in samples collected from the southwest portion of the site. None of the compound concentrations exceeded U.S. EPA Region 9 PRGs for industrial soil. No chlorinated compounds were reported in the soil samples collected from PSI's soil borings. No VOC was measured at detectable concentrations in the IT investigation (IT, 1996).

The average concentration was not applicable, no MTBE was detected.

5.1.6 Lead

The lead analytical results are presented in Table 1 and Figure 6. Lead was detected in all the soil borings. Total lead concentrations in soil samples ranged from below the laboratory detection limit to 1,700 mg/kg. Seventeen samples contained lead at concentrations above ten times the Soluble Threshold Limit Concentration (STLC) criterion (50 mg/l). The elevated lead concentrations were generally collected within 0.9 meters (3 feet) of the surface. The IT investigation reported analytical results and distribution of lead consistent with the PSI investigation (IT, 1996).

The average concentration was 18.17 mg/kg; the concentrations ranged from 90 mg/kg to 8.6 mg/kg.

The source of the lead cannot be determined from the information that is available to date. The lead may have been aerially deposited by the combustion of lead containing fuels. The lead may also have been derived from business activities at the site. Review of the Historical Site Plan presented on Figure 8 reveals a number of businesses which typically handle or store products which contain lead. It is likely that the contaminants observed at the site are the result of numerous spills at several locations at the site, aerial deposition of the lead, or a combination of the potential source areas.

Samples that contained concentrations of lead above ten times the STLC were chemically analyzed for soluble lead. The analytical results are presented on Table 1 and Figure 6. Seven of the samples analyzed contained concentrations exceeding the

STLC criterion. One Toxic Characteristic Leachate Procedure (TCLP) was performed on Sample OAK-3-0.30 to further characterize the soil. Sample OAK-3-0.30 contained 12 mg/l of lead; the analytical result exceeded the TCLP criterion of 5 mg/l. If excavated and classified for disposal, the soil characterized by the analysis would be considered Federal hazardous waste.

5.2 LABORATORY ANALYTICAL RESULTS - GROUNDWATER

Groundwater samples were collected from soil borings and the monitoring wells. Grab groundwater samples collected from the soil borings drilled May 19 and 20, 1999 were collected without purging. Groundwater samples collected from the monitoring wells were collected after developing and purging the monitoring wells. Wells were purged until pH, temperature, and conductivity stabilized. Average measurements were pH (6.8), temperature (19.7 C), and conductivity (1745 microSiemens).

No floating product or product sheen was observed in any groundwater sample collected at the site. Floating product was not reported in the IT investigation (IT, 1996).

Table 6 presents a statistical analysis of the groundwater analytical data. For each contaminant a count of concentrations reported above the detection limit, a concentration maximum, a concentration minimum, a concentration average, and concentration standard deviation is provided.

5.2.1 Oil and Grease

The groundwater oil and grease analytical results are presented in Table 2 and Figure 7. Oil and grease was detected from samples collected from five borings and one monitoring well (MW-2).

Oil and grease was only detected in one monitoring well (MW-2). The highest concentrations of oil and grease in groundwater samples were reported in samples collected from Borings WOAK-1, WOAK-2, and Well MW-2. IT did not analyze samples for oil and grease in groundwater (IT, 1996).

The average concentration was 8.0 mg/l; the concentrations ranged from 19 mg/l to 3.0 mg/l.

5.2.2 Total Petroleum Hydrocarbons – Diesel

The TPH-D analytical results are presented in Table 2 and Figure 7. TPH-D was detected only in Sample WOAK-5 (0.46 mg/l). It is noted that TPH-D was not detected in samples collected from Borings OAK1 or OAK2, were TPH-D was detected in soil samples collected near the water table. IT did not report detectable concentrations of TPH-D in groundwater samples.

The average concentration was 0.46 mg/l; the concentrations ranged from 0.46 mg/l to 0.46 mg/l.

5.2.3 Total Petroleum Hydrocarbons - Gasoline

The TPH-G analytical results are presented in Table 2 and Figure 7. TPH-G was detected in four groundwater samples (OAK1, OAK2, OAK3, and Well MW-2). The TPH-G detected is consistent with the distribution of TPH-G reported in soil samples. Concentrations of TPH-G were reported in Samples WOAK-1 (39 mg/l), WOAK-2 (58 mg/l), WOAK-3 (0.90 mg/l), and MW-1 (26 mg/kg).

IT reported TPH-G in the area consistent with PSI's investigation, but at significantly lower concentrations (IT, 1996).

The average concentration was 31 mg/l; the concentrations ranged from 58 mg/l to 0.9 mg/l.

5.2.4 Benzene, Toluene, Ethylbenzene, and Xylenes

The BTEX analytical results are presented in Table 2 and Figure 7. BTEX compounds were detected in five groundwater samples. The distribution of the BTEX compounds is consistent with the distribution of TPH-G and BTEX compounds in soil samples.

Benzene was detected in Samples WOAK-1 (3.7 mg/l), WOAK-2 (3.9 mg/l), and WOAK-3 (0.003 mg/l), and MW-2 (0.78 mg/l). All of the reported concentrations exceed the Maximum Contaminant Level for benzene in drinking water (0.001 mg/l). Toluene, ethylbenzene, and/or xylenes were detected in samples from Borings OAK1, OAK2, OAK3, OAK5, and Well MW-2.

The IT investigation reported analytical results and distribution of BTEX consistent with the PSI investigation (IT, 1996).

The average benzene concentration was 2.1 mg/l; the concentrations ranged from 3.9 mg/l to 0.0025 mg/l.

5.2.5 Methyl Tert Butyl Ether and Volatile Organic Compounds

The MTBE and VOC analytical results are presented in Table 2 and Figure 7. No MTBE was detected in any groundwater sample collected at the site. IT did not report analytical results for MTBE (IT, 1996).

Fuel related VOCs were detected in five groundwater samples. The fuel related hydrocarbons consisted of isopropylbenzene, napthalene, n-propylbenzene, 1,2,4-

trimethylbenzene, and 1,3,5-trimethylbenzene. IT reported the fuel related hydrocarbon 1,2-dichlorpropane in the area contaminated by gasoline (IT, 1996).

The chlorinated compound 1,2-dichlo bethane (1,2-DCA) was reported in the groundwater sample MW-1 (0.16 mg/l). The 1,2-DCA concentration exceeds the Maximum Contaminant Level for 1,2-DCA in drinking water (0.005 mg/l). IT also reported 1,2-DCA in their investigation although at a lower concentration (0.0054 mg/l) [IT, 1996].

The average concentration was not applicable, no MTBE was detected.

5.2.6 Lead

The lead analytical results are presented in Table 2 and Figure 7. It is noted that the lead concentrations reported in the grab groundwater samples were not filtered and represent the total lead concentration. Groundwater samples collected from the monitoring wells were filtered prior to digestion and analysis. Lead was not detected in any of the samples collected from the groundwater monitoring wells.

IT did not report analytical results for lead in groundwater (IT, 1996).

The average concentration was 0.27 mg/l; the concentrations ranged from 0.53 mg/l to 0.12 mg/l.

6 CONCLUSIONS

Based on the information presented in this report, the following conclusions have been reached:

- The groundwater flow direction measured at the site is east with a hydraulic gradient of 0.0057 meter per meter (foot per foot). The measured groundwater flow direction is not consistent with the anticipated flow direction interpreted from a topographic map. This anomaly may be due to nearby groundwater extraction or local hydrogeology.
- Oil and grease was detected from samples collected in every soil boring. In general, the concentrations of oil and grease decreased below a depth of 0.9 meter (3 feet). Measurable concentrations of oil and grease extend to the depth of the water table. The source of the oil and grease is unknown. It may be related to using oil for dust control, or fill material reported in previous investigations (Geocon, 1995).
- TPH-D was detected in all of the soil borings except OAK9 and OAK11. The concentrations of TPH-D are generally below 100 mg/kg. TPH-D occurs near the surface in most soil borings and decreases with depth except in Borings OAK1 and OAK2, where the only concentration of TPH-D was reported in the deepest soil samples collected. This may indicate limited contamination of the capillary fringe in the area of Borings OAK1 and OAK2. The source of the TPH-D is unknown. Similar to the oil and grease, it may be related to using diesel fuel for dust control, or fill material reported in previous investigations (Geocon, 1995). In the southwest portion of the property, where the former service station was located, the TPH-D exists in the capillary fringe zone and is likely related to storage of diesel fuel in Underground Storage Tanks (USTs).
- TPH-G was detected in three soil borings (OAK1, OAK2, and OAK3). The TPH-G detected in Borings OAK2 and OAK3 was reported in samples collected from the capillary fringe zone. TPH-G was reported in Sample OAK-1-4.5 (600 mg/kg) and OAK-2-4.5 (99 mg/kg). In the southwest portion of the property, where the former service station was located, the TPH-G exists in the capillary fringe zone and is likely related to storage of gasoline in Underground Storage Tanks (USTs).
- BTEX compounds were detected in four soil borings. The distribution and depth of the BTEX compounds is consistent with the distribution of TPH-G. Benzene was detected in Samples OAK-2-4.5 (0.21 mg/kg) and OAK-1-3.0 (0.002 mg/kg). Toluene, ethylbenzene, and/or xylenes were detected in samples from Borings OAK1, OAK2, OAK3, and OAK6. Benzene was only detected in the southwest portion of the property. The benzene concentrations observed are likely related to the storage of gasoline in USTs.

- No MTBE was detected in any soil sample collected at the site. The USTs at the service station were reported have been removed in the 1970's (IT, 1996). Because MTBE was first blended in gasoline in 1979, the absence of MTBE in the soil samples indicates a historic on-site or nearby source area (API, 1998).
- Fuel related VOCs were detected in 9 of 11 soil borings. The fuel related hydrocarbons consisted of isopropylbenzene, napthalene, n-propylbenzene, 1,2,4trimethylbenzene, and 1,3,5-trimethylbenzene. None of the compound concentrations exceeded U.S. EPA Region 9 PRGs for industrial soil. No chlorinated compounds were reported in the soil samples collected from PSI's soil borings. The distribution of fuel related VOCs is consistent with the distribution of TPH-G.
- Lead was detected in all the soil borings. Total lead concentrations in soil samples ranged from below the laboratory detection limit to 1,700 mg/kg. Seventeen samples contained lead at concentrations above ten times the Soluble Threshold Limit Concentration (STLC) criterion (50 mg/l). The elevated lead concentrations were generally collected within 0.9 meters (3 feet) of the surface. Samples that contained concentrations of lead above the STLC were chemically analyzed for soluble lead. Seven of the samples analyzed contained concentrations exceeding the STLC criterion. One TCLP was performed on Sample OAK-3-0.30 to further characterize the soil. The analytical result exceeded the TCLP criterion. If excavated and classified for disposal, the soil characterized by the analysis would be considered Federal hazardous waste.

The concentration of lead detected in Sample OAK-3-0.30 exceeds the EPA Preliminary Remediation Goal (PRG) for Industrial Soils (1,000 mg/kg). All other lead concentrations were below the PRG criterion.

- No floating product or product sheen was observed in any groundwater sample collected at the site.
- Oil and grease was detected in samples collected from six of the monitoring wells or soil borings. Oil and grease was only detected in one monitoring well (MW-2). The highest concentrations of oil and grease in groundwater samples were reported in samples collected from Borings WOAK-1, WOAK-2, and Well MW-2.
- TPH-D was detected only in Sample WOAK-5 (0.46 mg/l). TPH-D was not detected in samples collected from Borings OAK1 or OAK2, where TPH-D was detected in soil samples collected near the water table.
- TPH-G was detected in four groundwater samples. The TPH-G detected is consistent with the distribution of TPH-G reported in soil samples. The groundwater samples that contained TPH-G were located at the southwest portion of the property, consistent with the former location of the service station.

- BTEX compounds were detected in five groundwater samples. The distribution of the BTEX compounds is consistent with the distribution of TPH-G and BTEX compounds in soil samples. The groundwater samples that contained BTEX compounds were located at the southwest portion of the property, consistent with the former location of the service station. None of the soil samples contained BTEX compounds above U.S. EPA Region 9 Preliminary Remediation Goals.
- Benzene was detected in Samples WOAK-1 (3.7 mg/l), WOAK-2 (3.9 mg/l), WOAK-3 (0.003 mg/l), and MW-2 (0.78 mg/l). All of the reported concentrations exceed the Maximum Contaminant Level for benzene in drinking water (0.001 mg/l). Toluene, ethylbenzene, and/or xylenes were detected in samples from Borings OAK1, OAK2, OAK3, OAK5, and Well MW-2.
- No MTBE was detected in any groundwater sample collected at the site. Because MTBE was first blended in gasoline in 1979, the absence of MTBE in groundwater samples indicates a historic on-site or nearby source area (API, 1998).
- Fuel related VOCs were detected in five groundwater samples. The fuel related hydrocarbons consisted of isopropylbenzene, napthalene, n-propylbenzene, 1,2,4trimethylbenzene, and 1,3,5-trimethylbenzene. The distribution of the fuel related VOCs is consistent with the location of the former service station.
- The chlorinated compound 1,2-dichlooethane (1,2-DCA) was reported in the groundwater sample MW-1 (0.16 mg/l). The 1,2-DCA concentration exceeds the Maximum Contaminant Level for 1,2-DCA in drinking water (0.005 mg/l). The source of the 1,2-DCA is unknown.
- Lead was not detected in any of the samples collected from the groundwater monitoring wells.

7 RECOMMENDATIONS

Based on the information presented in this report, the following recommendations have been reached:

- Additional investigation of the cause of the groundwater flow direction deviation is warranted.
- Elevated concentrations of TPH-G and benzene exists in soil samples collected from the southwest portion of the site. Because of the wide spacing of soil borings the contaminated soil extent is not well defined. Additional delineation of soil contamination is recommended.
- Elevated concentrations of oil and grease exist in soil samples collected across the site. Additional monitoring of the groundwater for oil and grease is warranted.
- Elevated concentrations of TPH-G and benzene exists in groundwater samples collected from the southwest portion of the site. Benzene concentrations are up to 3,700 times higher than MCL for benzene (0.001 mg/l). Additional delineation of the groundwater contamination is recommended.
- The chlorinated compound 1,2-dichlooethane (1,2-DCA) was reported in the groundwater sample MW-1 (0.16 mg/l). The 1,2-DCA concentration is 32 times higher than the MCL for 1,2-DCA in drinking water (0.005 mg/l). The source of the 1,2-DCA is unknown. Additional delineation of the groundwater contamination is recommended.
- The lack of MTBE in groundwater samples may indicate an on-site or nearby site source of the petroleum that was detected. The potential for an on-site source of TPH-G and benzene in the southwest portion of the site exists.
- An elevated concentrations of lead were detected in soil samples collected from across the site. Several of the samples exceeded the STLC criterion, one sample exceeded the after sample preparation by the TCLP. Additional monitoring of the groundwater for soluble lead is warranted.
- Once site characterization is completed, a Risk Based Corrective Action (RBCA) evaluation of the property is warranted.

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TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
CALTRANS MAINTENANCE STATION
6TH AND CASTRO STREETS, OAKLAND, CA

All Concentrations in mg/kg (PPM).											
SAMPLE NUMBER	DEPTH (meters)	OIL & GREASE	TPH-G	TPH-D	MTBE	BENZENE	TOLUENE	E-BENZENE	XYLENES	VOCs*	LEAD
OAK-1	0.15	53	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.002	NA
	0.30	23	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.005	NA
	0.90	21	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	NA
	1.5	22	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	15
	3.0	16	ND (0.5)	ND (10)	ND (0.005)	0.002	ND (0.001)	0.13	0.096	0.433	19
	4.5	53	600	120	ND (6.0)	ND (1.3)	3.7	17	67	112	18
OAK-2	0.15	33	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	0.003	ND*	8.6
	0.30	29	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	NA
	0.90	11	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	NA
	1.5	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	NA
	3.0	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	NA
	4.5	63	99	48	ND (0.025)	0.21	4.8	8.2	29	38.87	NA
OAK-3	0.15	22	2.0	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	0.006	0.025	0.001	56 (ND)
	0.30	280	ND (0.5)	18	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	1700 {12}
	0.90	49	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	11
	1.5	16	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	9.8
	3.0	12	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	13
	4.5	22	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	15
OAK-4	0.15	270	ND (0.5)	13	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	110 (4.8)
	0.30	120	ND (0.5)	15	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	51 (3.7)
	0.90	430	ND (0.5)	18	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	77 (3.0)
	1.5	81	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.001	48
	3.0	13	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	18
	4.5	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	16
OAK-5	0.15	430	ND (0.5)	13	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	100 (4.0)
	0.30	200	ND (0.5)	13	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	200 (20)
	0.90	76	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	18
	1.5	16	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.002	8.8
	3.0	13	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	17
	4.5	120	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	34

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
CALTRANS MAINTENANCE STATION
6TH AND CASTRO STREETS, OAKLAND, CA

					All (All Concentrations in mg/kg (PPM).					
SAMPLE NUMBER	DEPTH (meters)	OIL & GREASE	TPH-G	TPH-D	МТВЕ	BENZENE	TOLUENE	E-BENZENE	XYLENES	VOCs*	LEAD
OAK-6	0.15	440	ND (0.5)	15	ND (0.005)	ND (0.001)	ND (0.001)	0.002	0.010	ND*	98 (7.1)
	0.30	180	ND (0.5)	22	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	21
	0.90	47	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	14
	1.5	46	ND (0.5)	12	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.001	11
	3.0	17	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	16
	4.5	46	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	17
OAK-7	0.15	130	ND (0.5)	13	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	98 (5.0)
	0.30	3,000	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.17	79 (4.9)
	0.90	240	ND (0.5)	12	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	11
	1.5	20	ND (0.5)	11	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	8.8
	3.0	20	ND (0.5)	11	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	16
	4.5	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.002	14
OAK-8	0.15	260	ND (0.5)	20	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	36
	0.30	340	ND (0.5)	30	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	77 (8.0)
	0.90	2,600	ND (0.5)	120	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	300 (22)
	1.5	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	9.4
	3.0	13	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	15
	4.5	10	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	14
OAK-9	0.15	82	ND (0.5)	24	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.006	83 (4.6)
	0.30	580	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	150 (16)
	0.90	140	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	10
	1.5	46	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	11
	3.0	11	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	15
	4.5	10	ND (0.5)	20	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	14
OAK-10	0.15	380	ND (0.5)	58	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	90
	0.30	150	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	56
	0.90	46	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	9.1
	1.5	11	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	16
	3.0	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	9.0
	4.5	13	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	12

TABLE 1 SUMMARY OF SOIL ANALYTICAL DATA CALTRANS MAINTENANCE STATION 6TH AND CASTRO STREETS, OAKLAND, CA

All Concentrations in mg/kg (PPM).											
SAMPLE NUMBER	DEPTH (meters)	OIL & GREASE	TPH-G	TPH-D	МТВЕ	BENZENE	TOLUENE	E-BENZENE	XYLENES	VOCs*	LEAD
OAK-11	0.15	27	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	240 (38)
	0.30	18	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	0.002	10
	0.90	27	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	11
	1.5	14	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	18
	3.0	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	16
	4.5	ND (10)	ND (0.5)	ND (10)	ND (0.005)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)	ND*	12

NOTES

Sample concentrations reported in mg/kg (milligram per kilogram).

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline, TPH-D denotes Total Petroleum Hydrocarbons as Diesel.

MTBE denotes Methyl Tert Butyl Ether, E-Benzene denotes Ethylbenzene, VOCs* denotes Volatile Organic Compounds analyzed by EPA Method 8260.

Sample depth reported as meters below ground surface.

ND denotes Not Detected, detection limit presented in parentheses. NA denotes Not Analyzed.

ND* denotes all anaytes included in EPA Method 8260 analyte list not presented on this table, Not Detected.

(3.3) = Soluble Concentration after a Waste Extraction Test (WET)

{3.3} = Soluble Concentration after a Toxic Characteristic Leachate Procedure (TCLP).

TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL DATA CALTRANS MAINTENANCE STATION 6TH CASTRO STREETS, OAKLAND, CA

	All concentrations in mg/l (PPM).											
SAMPLE NUMBER	OIL & GREASE	TPH-G	TPH-D	MTBE	Benzene	E-Benzene	Toluene	Xylenes	VOCs*	LEAD		
WOAK-1	12	39	ND	ND (0.10)	3.7	3.2	1.1	5.1	4.48	0.53		
WOAK-2	19	58	ND	ND (0.10)	3.9	3.7	14	12	4.764	0.26		
WOAK-3	4.1	0.90	ND	ND (0.10)	0.0025	0.040	0.011	0.1	0.1078	ND (0.10)		
WAOK-5	ND (2.3)	ND (0.5)	0.46	ND (0.001)	ND (0.0005)	ND (0.0005)	0.0006	ND (0.0015)	0.0006	0.33		
WOAK-6	ND (2.6)	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	ND (0.10)		
WOAK-7	ND (2.7)	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	ND (0.10)		
WAOK-8	ND (3.0)	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	0.12		
WOAK-9	ND (2.7)	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	0.26		
WOAK-10	3.0	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	ND (0.10)		
WOAK-11	3.7	ND (0.5)	ND	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	0.12		
MW-1	ND (2.4)	ND (0.5)	ND (0.4)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	ND (0.10)		
MW-2	6.3	26	ND (4.0)	ND (0.001)	0.78	1.3	4.2	5.0	2.83	ND (0.10)		
MW-3	ND (2.3)	ND (0.5)	ND (0.4)	ND (0.001)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0015)	ND*	ND (0.10)		

NOTES

Sample concentrations reported in mg/kg (milligram per kilogram).

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline, TPH-D denotes Total Petroleum Hydrocarbons as Diesel.

MTBE denotes Methyl Tert Butyl Ether, E-Benzene denotes Ethylbenzene, VOCs* denotes Volatile Organic Compounds analyzed by EPA Method 8260. ND denotes Not Detected, detection limit presented in parentheses.

ND* denotes all anaytes included in EPA Method 8260 analyte list not presented on this table. Not Detected.

TABLE 3 SUMMARY OF GROUNDWATER ELEVATIONS CALTRANS MAINTENANCE STATION 6TH AND CASTRO STREETS, OAKLAND, CA

SAMPLE NUMBER	DATE	GROUND SURFACE ELEVATION	WELL CASING ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION	
MW-1	7/2/99	23.74	26.85	19.89	6.96	
MW-2	7/2/99	18.67	21.56	14.21	7.35	
MW-3	7/2/99	19.60	21.04	14.57	6.47	

NOTES:		
		j
All elevation and depth data presented in feet.]

TABLE 4 SUMMARY OF PHYSICAL PROPERTIES CALTRANS MAINTENANCE STATION 6TH AND CASTRO STREETS, OAKLAND, CA

SAMPLE NUMBER	SAMPLE DEPTH	MOISTURE CONTENT %	TOTAL POROSITY %	TOC mg/kg
OAK-1	1.5	13.4	29.6	9,280
OAK-3	1.5	11.1	32.7	1,920
OAK-11	1.5	22.7	37.6	2,250

NOTES:

Sample depth presented in meters below ground surface.

TOC denotes Total Organic Carbon by SM 5310.

Moisture Content by ASTM Method D-2216.

Porosity by API RP-40.

mg/kg denotes milligram per kilogram.

TABLE 5 STATISTICAL ANALYSIS OF SOIL ANALYTICAL DATA CALTRANS MAINTENANCE STATION 6TH AND CASTRO STREETS, OAKLAND, CA

STATISTICAL FUNCTION	OIL & GREASE	TPH-G	TPH-D	MTBE	BENZENE	TOLUENE	E-BENZENE	XYLENES	VOCs*	LEAD
count	58	3	21	0	2	2	5	6	13	43
max	3.000	600	120	0.000	0.21	4.8	17.0	67.0	112.0	90.0
min	10.0	2.0	11.0	0.000	0.002	3.7	0.002	0.003	0.001	8.6
average	197.6	233.7	29.8	NA	0.106	4.25	5.07	16.02	11.65	18.17
std. dev.	515.4	320.9	32.3	NA	0.15	0.78	7.55	27.53	32.00	14.85

NOTES

Sample concentrations reported in mg/kg (milligram per kilogram).

NA denotes Not Analyzed.

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline, TPH-D denotes Total Petroleum Hydrocarbons as Diesel.

MTBE denotes Methyl Tert Butyl Ether, E-Benzene denotes Ethylbenzene, VOCs* denotes Volatile Organic Compounds analyzed by EPA Method 8260.

TABLE 6 STATISTICAL ANALYSIS OF GROUNDWATER ANALYTICAL DATA CALTRANS MAINTENANCE STATION 6TH CASTRO STREETS, OAKLAND, CA

STATISTICAL FUNCTION	OIL & GREASE	TPH-G	TPH-D	MTBE	Benzene	E-Benzene	Toluene	Xylenes	VOCs*	LEAD
count	6	4	1	0	4	4	5	4	5	6
max	19.0	58.0	0	0	3.9	3.7	14.0	12.0	4.76	0.53
min	3.0	0.9	0.46	0.000	0.0025	0.040	0.0006	0.10	0.0006	0.12
average	8.0	31.0	0	NA	2.1	2.1	3.9	5.6	2.44	0.27
std. dev.	6.30	23.97	NA	NA	2.00	1.70	5.92	4.89	2.30	0.15

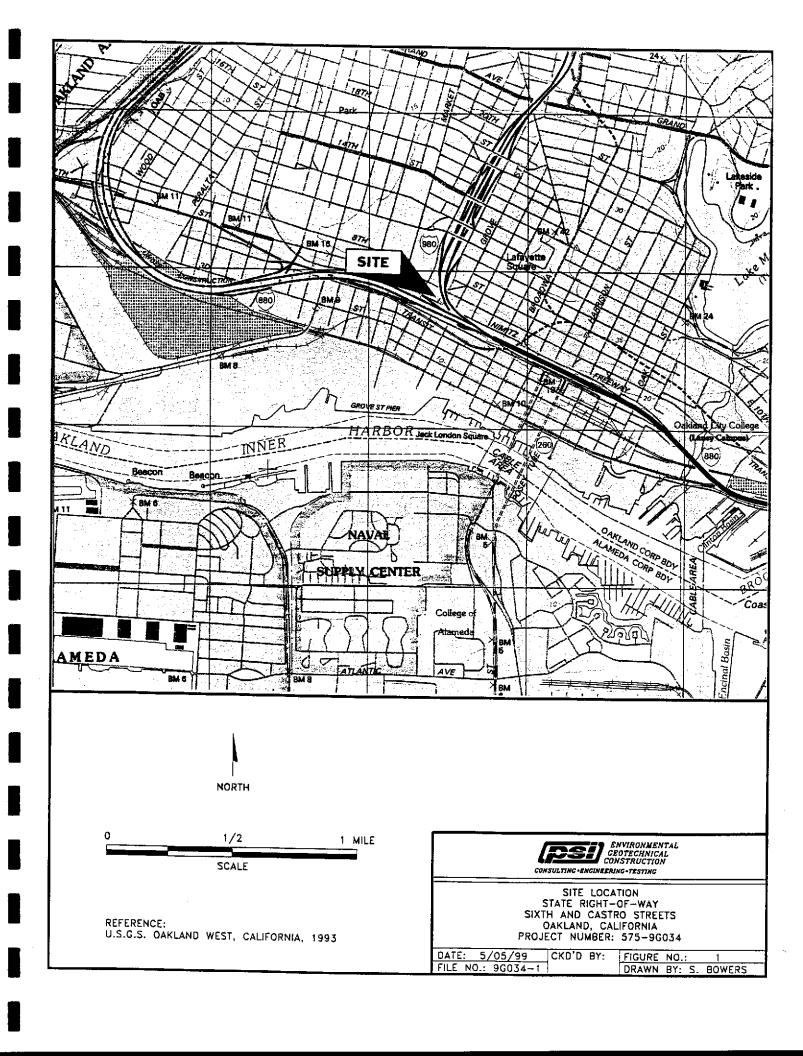
NOTES

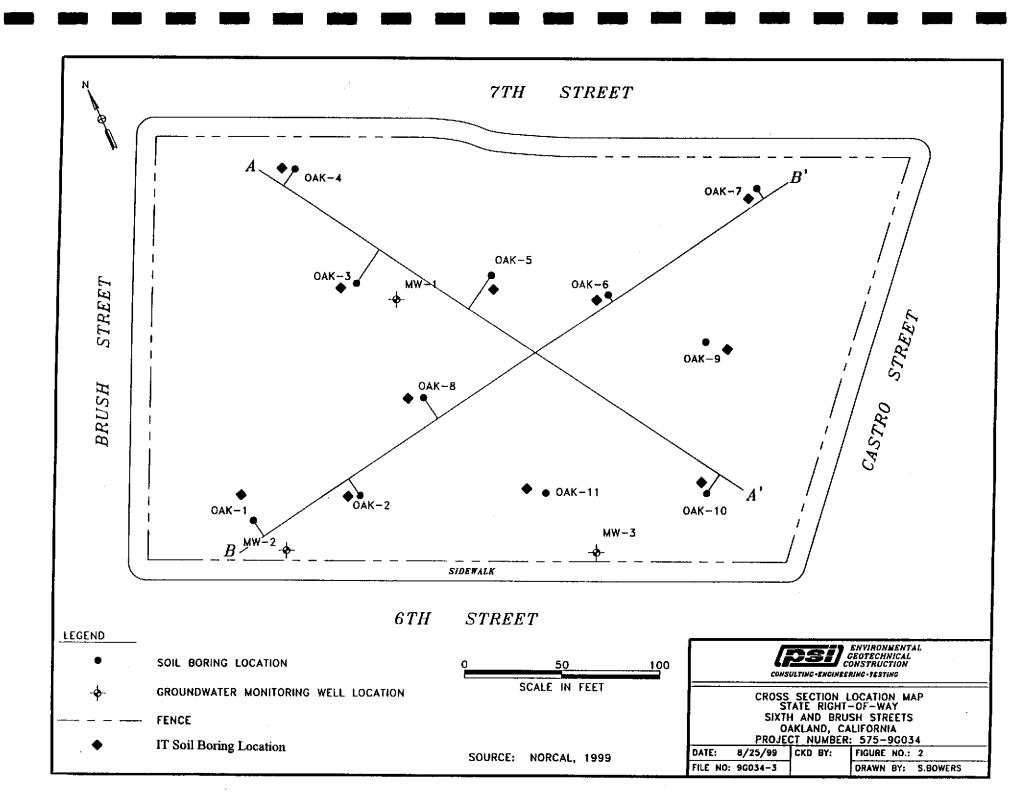
Sample concentrations reported in mg/l (milligram per liter).

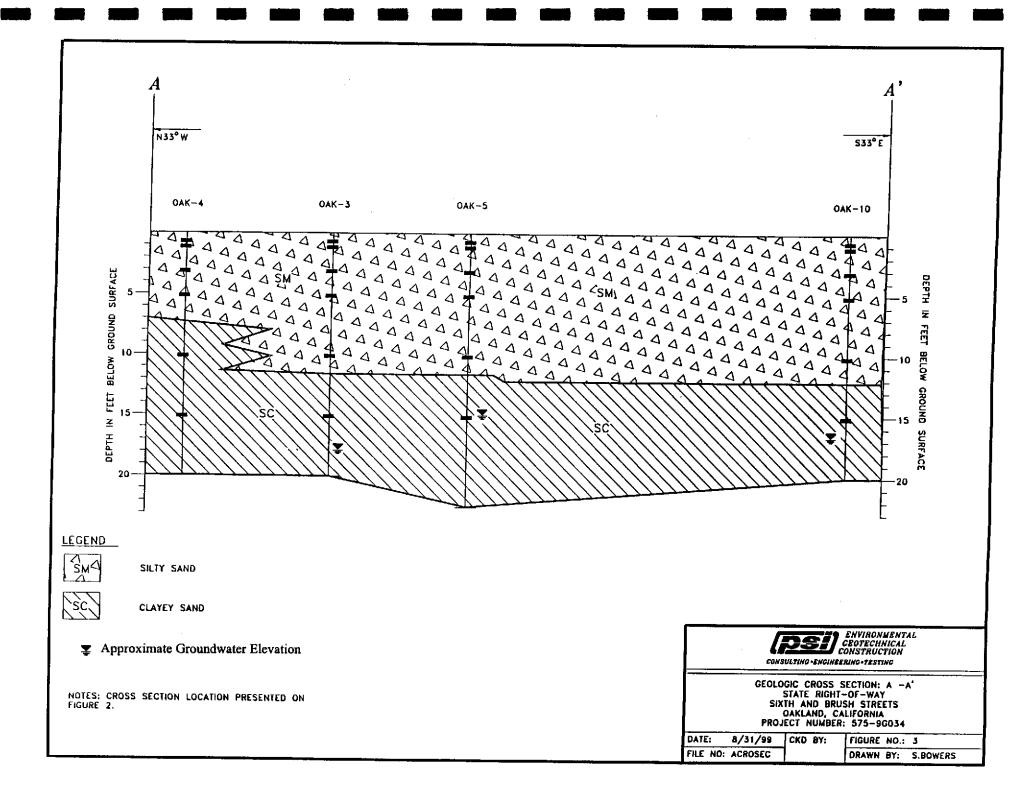
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline, TPH-D denotes Total Petroleum Hydrocarbons as Diesel.

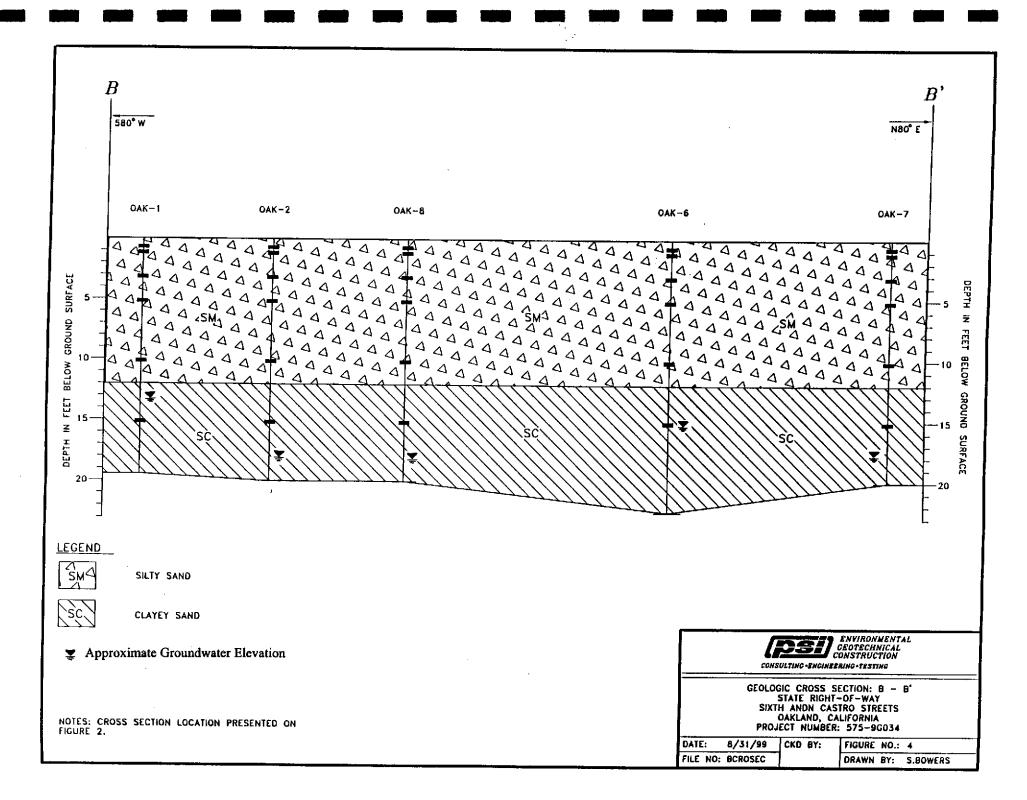
MTBE denotes Methyl Tert Butyl Ether, E-Benzene denotes Ethylbenzene, VOCs* denotes Volatile Organic Compounds analyzed by EPA Method 8260.

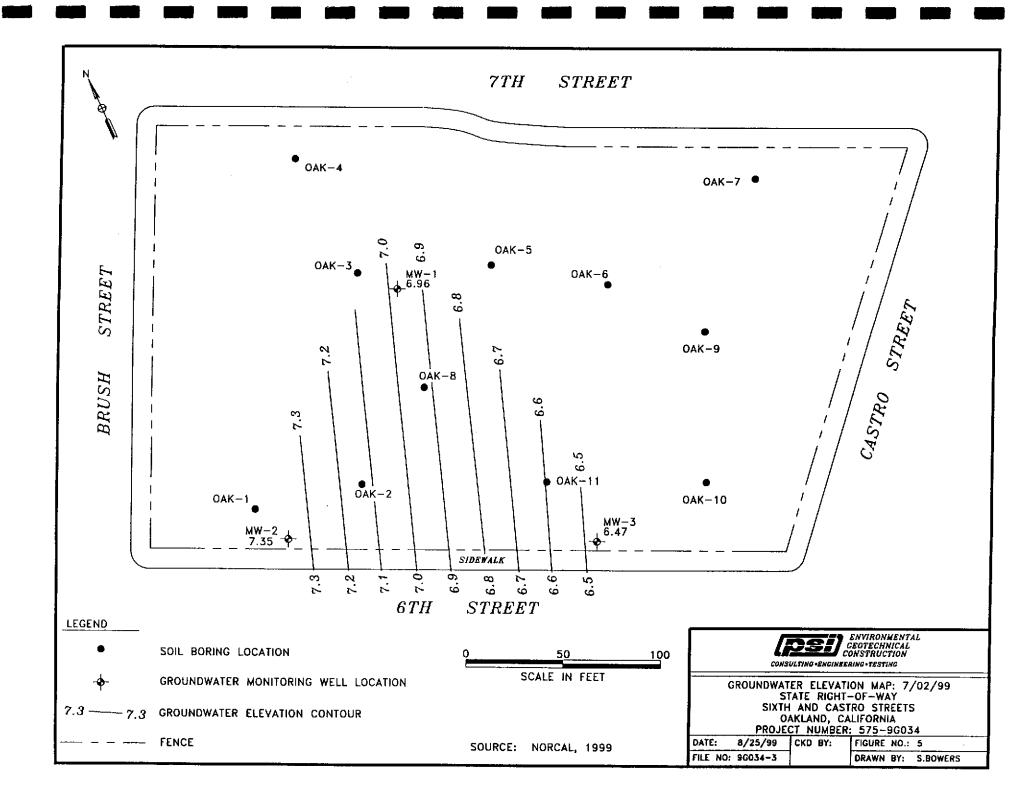
NA denotes Not Applicable.

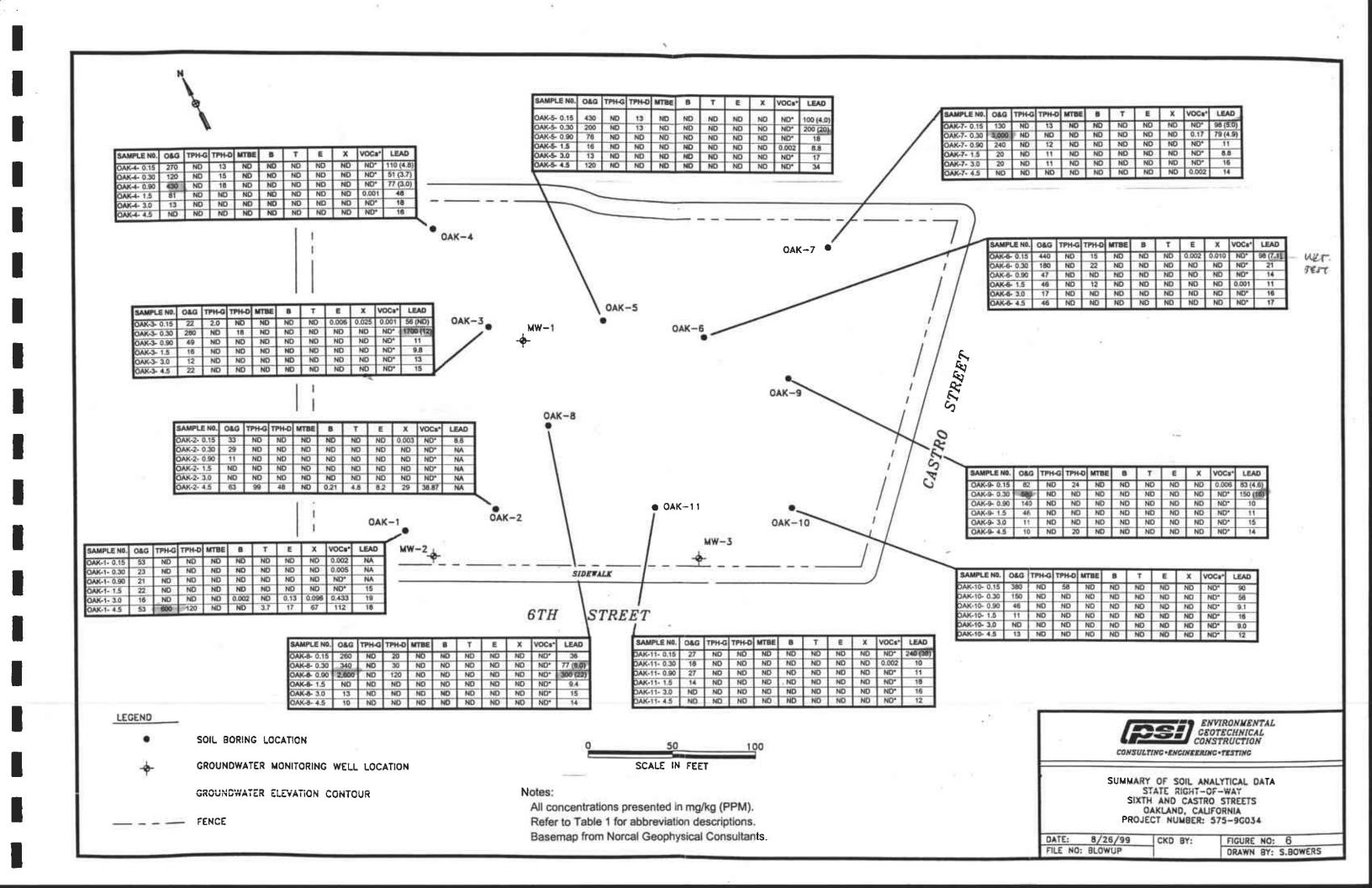


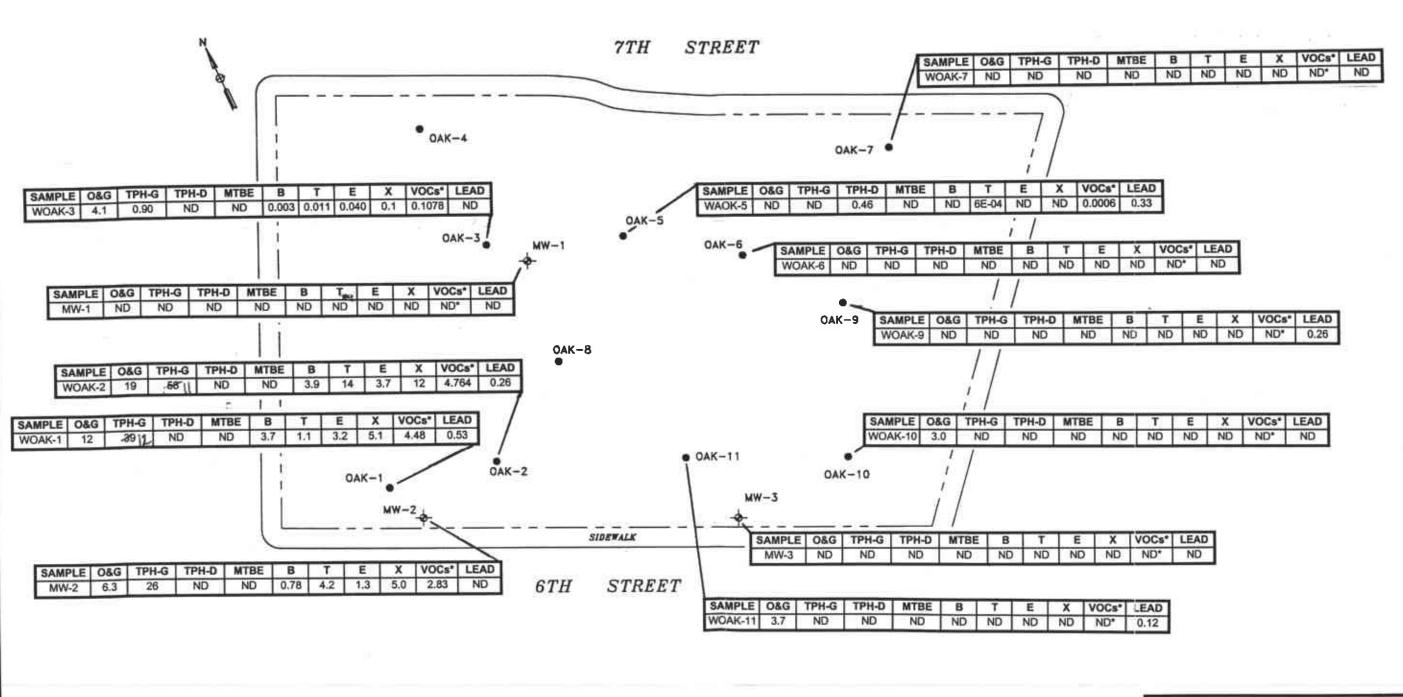












LEGEND

SOIL BORING LOCATION

GROUNDWATER MONITORING WELL LOCATION

GROUNDWATER ELEVATION CONTOUR

__ _ FENCE

SCALE IN FEET

Notes:

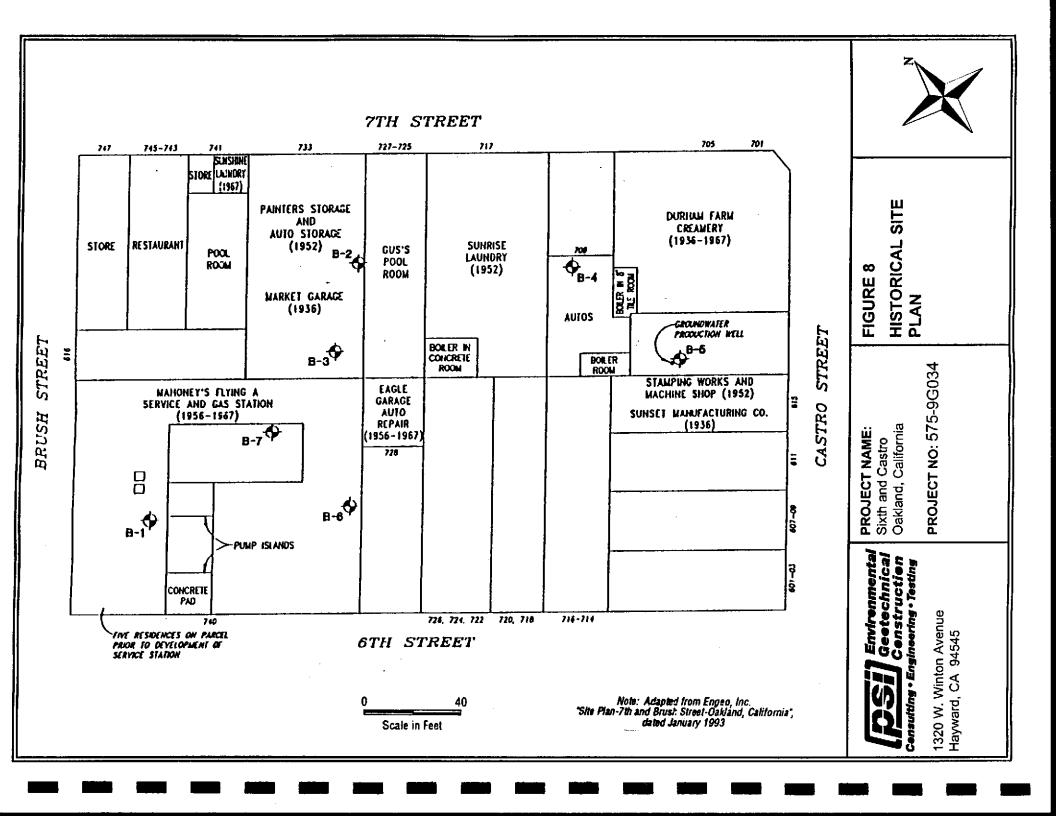
Sample concentrations reported in mg/kg (milligram per kilogram). Refer to Table 2 for abbreviation descriptions.

Basemap from Norcal Geophysical Consultants.



SUMMARY OF GROUNDWATER ANALYTICAL DATA STATE RIGHT-OF-WAY SIXTH AND CASTRO STREETS OAKLAND, CALIFORNIA PROJECT NUMBER: 575-96034

DATE: 8/26/99	CKD BY:	FIGURE	NO:	7
FILE NO: BLOWUP	2.500	DRAWN	BY:	S.BOWERS



APPENDIX A

IT ANALYTICAL DATA TABLES AND FIGURES

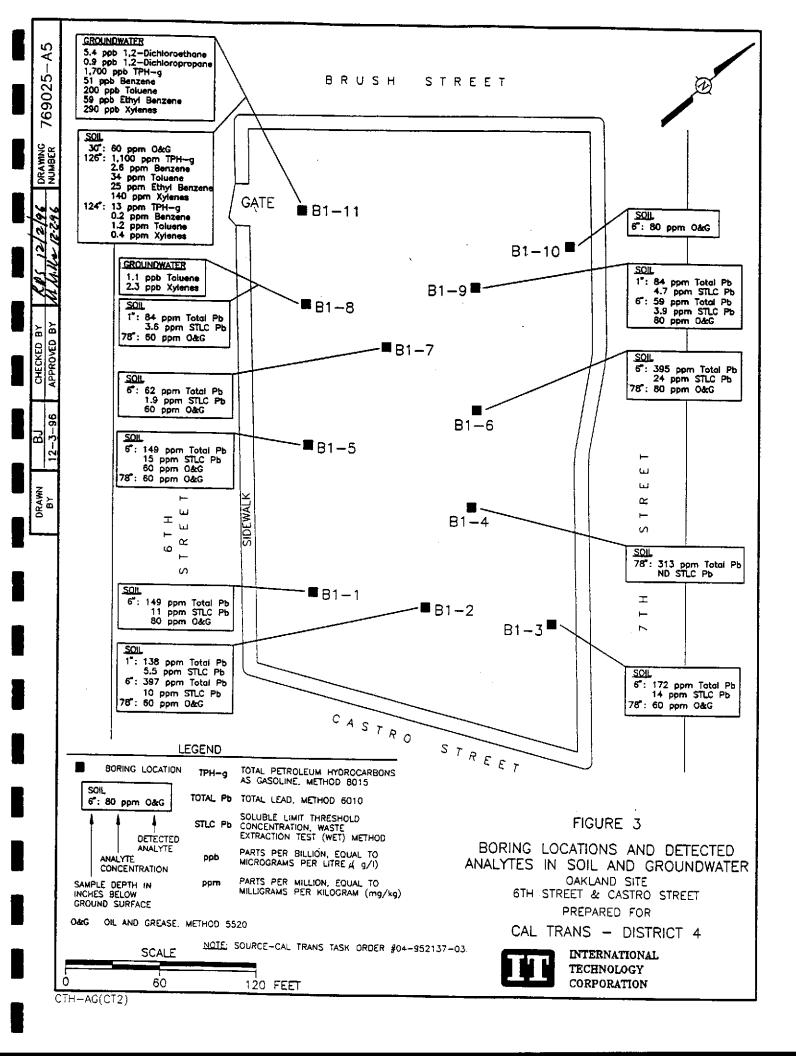


TABLE 1 RESULTS OF SOIL AND GROUNDWATER ANALYSIS PETROLEUM HYDROCARBONS CAL TRANS - OAKLAND SITE

SAMPLE	DATE	SOIL DEPTH	TPH-G	TPH-D	OIL & GREASE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENE
		inches	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B1-1-6	10/16/96	6			80				
B1-1-30	10/16/96	30			ND				
B1-1-78	10/16/96	78	ND	ND	ND	ND	ND	ND	ND
31-1-126	10/16/96	126	ND	NO		ND	ND	ND	ND
B1-1-174	10/16/96	174	ND	ND		ND	ND	ND	ND
B1-2-6	10/16/96	6		·	ND				
B1-2-30	10/16/96	30			ND				
81-2-76	10/16/96	78	ND	ND	60	ND	ND	ND	ND
B1-2-126	10/16/96	126	ND	ND		ND	ND	ND	ND
B1-2-174	10/16/96	174	ND	ND		ND	ND	ND	ND
B1-3-6	10/16/96	6			ND				
B1-3-30	10/16/96	30		-	ND				
B1-3-78	10/16/96	78	ND	ND	60	ND	ND	ND	ND
B1-3-126	10/16/96	126	ND	ND	 	ND	ND	ND	ND
B1-3-174	10/16/96	174	ND	ND		ND	ND	ND	ND
B1-4-6	10/16/96	6		ļ <u>.</u>	ND	1		 	1
B1-4-30	10/16/96	30			ND	 			
B1-4-78	10/16/96	78	ND	ND	ND	ND	ND	ND .	ND
B1-4-126	10/16/96	126	ND	ND	1	ND	ND	ND	ND
B1-4-174	10/16/96	174	ND	ND	<u> </u>	ND	ND	ND	ND
81-5-6	10/16/96	6		.40	60		† · · · · · ·	1.0	1175
B1-5-30	10/16/96	30			ND .	 			
B1-5-30	10/16/96	78	ND	ND	60	ND	ND	ND	ND
B1-5-76	10/16/96	126	ND	ND	30	ND	ND	ND ND	ND
B1-5-126 B1-5-174	10/16/96	174		ND ND			1	1	ND
	1 1		ND	ND	h	ND	ND	ND	טא
B1-6-6 B1-6-30	10/16/96	6	 -	-	ND		 		
	10/16/96	30			ND	1	A100	NB	415
B1-6-78	10/16/96	78	ND	ND ND	80	ND	ND	ND	ND
B1-6-126 B1-6-174	10/16/96	126	ND ND	ND	 	ND	ND ND	ND	ND ND
B1-5-174 B1-7-6	10/16/96	174 6	ND	ND		ND	ND	ND	NU
B1-7-8	10/16/96			+	60	1			
B1-7-30 B1-7-78	10/16/96	30	N.S.	1.0	ND	ND	l ND	NO	NE
	10/16/96	78	ND	NO	ND	ND	ND	ND	ND ND
81-7-126	10/16/96	126	ND ND	ND		ND	ND	ND	ND ND
B1-7-174	10/16/96	174	ND	ND		ND	ND	ND	ND
B1-8-6	10/16/96	6	-	ļ	ND		 	 	
B1-8-30	10/16/96	30		 	ND		1	1	
B1-8-78	10/16/96	78	ND	ND	60	ND	ND	ND	ND
81-8-126	10/16/96	126	ND	ND		ND	ND	ND	ND
B1-8-174	10/16/96	174	ND	ND		ND	ND	ND	ND.
B1-9-6	10/16/96	6	 	1	80	1		 	-
B1-9-30	10/16/96	30	ļ		ND			 	<u> </u>
B1-9-78	10/16/96	78	ND	ND	ND	ND	ND_	ND	ND
B1-9-126	10/16/96	126	ND	ND	<u> </u>	ND	ND	ND	ND
B1-9-174	10/16/96	174	ND	ND		NĐ	ND_	ND	ND
B1-10-6	10/16/96	6		ļ	80	<u> </u>	 		
B1-10-30	10/16/96	30		ļ	ND		ļ <u>-</u>		
81-10-78	10/16/98	78	ND	ND	ND_	ND	ND	ND	ND.
81-10-126	10/16/96	126	ND	ND	<u> </u>	ND	ND	ND	ND
B1-10-174	10/16/96	174	ND-	ND		ND	ND	ND	ND
B1-11-6	10/16/96	6			ND				
B1-11-30	10/16/96	30			60				
B1-11-78	10/16/96	78	ND	ND	ND	ND	ND	ND	ND
B1-11-126	10/16/96	126	1100	ND *		2.6	34	25	140
	10/16/96	174	13	ND	T	0.2	1.2	· ND	0.42

TABLE 1 RESULTS OF SOIL AND GROUNDWATER ANALYSIS PETROLEUM HYDROCARBONS CAL TRANS - OAKLAND SITE

	-		(CONTINUE					
					OIL &			ETHYL	
SAMPLE	DATE	MATRIX	TPH-G	TPH-D	GREASE	BENZENE	TOLUENE	BENZENE	XYLENES
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B1-4-GW	10/16/96	WATER	ND	ND		ND	ND	ND	ND
B1-4-GW(DUP)	10/16/96	WATER	ND			ND	ND	ND	ИD
B1-6-GW	10/16/96	WATER	ND	ND		ND	ND	ND	ND
B1-8-GW	10/16/96	WATER	ND	ND		ND	1.1	ND	2.3
B1-11-GW	10/16/96	WATER	1700	ND **		51	200	59	290
B1-11-GW(DUP)	10/16/96	WATER		ND ***					
NOTES:									
mg/kg = miligams	per kilogram	(approximat	ely equivale	nt to parts pe	r million, ppm	l 1}			
ug/L 🤫 microgran	ns per liter (a	pproximately	equivalent	to parts per t	oillion)				
	nontypical f								
• • hydrocarbo	on nontypical	for diesel pr	esent at 11	00 ppb					
* * * hydrocari	on nantynic	al for diesel p	resent at 0	70 pph				1	<u> </u>

TABLE 3

RESULTS OF SOIL AND GROUNDWATER ANALYSIS HALOGENATED VOLATILE ORGANICS CAL TRANS - OAKLAND SITE

SAMPLE	DATE	DEPTH	8010	1,2 -Dichloroethane	1,2 -Dichloropropane
		feet		ug/L	ug/L
B1-3-6	10/16/96	6	ND		
B1-3-30	10/16/96	30	ND		
B1-3-78	10/16/96	78	ND		
B1-3-126	10/16/96	126	ND		
B1-3-174	10/16/96	174	ND		
B1-4-6	10/16/96	6	ND		
B1-4-30	10/16/96	30	ND		
B1-4-78	10/16/96	78	ND		
B1-4-126	10/16/96	126	ND		
B1-4-174	10/16/96	174	ND		
B1-6-6	10/16/96	6	ND		
B1-6-30	10/16/96	30	ND		
B1-6-78	10/16/96	78	ND		
B1-6-126	10/16/96	126	ND		
B1-6-174	10/16/96	174	ND		
B1-10-6	10/16/96	6	ND		
B1-10-30	10/16/96	30	ND		
B1-10-78	10/16/96	78	ND		
B1-10-126	10/16/96	126	ND		
B1-10-174	10/16/96	174	ND		
B1-4-GW	10/16/96	WATER	ND		
B1-6-GW	10/16/96	WATER	ND		
B1-8-GW	10/16/96	WATER	ND		
B1-8-GW(DUP)	10/16/96	WATER	ND		-
B1-11-GW	10/16/96	WATER	- -	5.4	0.9
CALTOAK-ER	10/16/96	WATER	ND		
10-16-96-TB	10/16/96	WATER	ND		
CALTHAY-ER	10/15/96	WATER	ND		
10-15-96-TB	10/15/96	WATER	ND		
NOTES:					
ug/L = Microgram	per liter (a	pproximate	ely equivale	ent to parts per billion, p	ob)
ND = 8010 compo	ounds not o	letected at	or above r	eporting limits.	,
ER = Equipment r	insate sam	ple			
TB = Trip blank sa					
DUP = Duplicate	sample				

TABLE 4 RESULTS OF SOIL ANALYSIS LEAD AND pH CAL TRANS - OAKLAND AND HAYWARD SITES

		SOIL	EPA METHOD 6010	EPA METHOD 6010	EPA METHOD 6010	
SAMPLE	DATE	DEPTH	TTLC LEAD	STLC LEAD	TCLP LEAD	pН
	!		mg/kg	mg/L	mg/L	
B1-1-6	10/16/96	6	149	11	0.55	
B1-1-30	10/16/96	30	2,9			7.4
B1-1-78	10/16/96	78	2.9			
B1-2-1	10/16/96	1	138	5.5	0.22	
B1-2-6	10/16/96	6	397	10	0.23	
B1-2-30	10/16/96	30	ND			-
B1-2-78	10/16/96	78	ND			
B1-3-6	10/16/96	6	172	14	0.34	
B1-3-30	10/16/96	30	2.3			
B1-3-78	10/16/96	78	3.4			
B1-4-6	10/16/96	6	44			
B1-4-30	10/16/96	30	2.5			
B1-4-78	10/16/96	78	313	ND		
B1-5-1	10/16/96	1	23		-	
B1-5-6	10/16/96	6	149	15	0.32	
B1-5-30	10/16/96	30	2.7		0.02	
B1-5-78	10/16/96	78	3.1			
B1-6-6	10/16/96	6	395	24	ND	
B1-6-30	10/16/96	30	3.3			
B1-6-78	10/16/96	78	2.4			
B1-7-6	10/16/96	6	62	1.9		
B1-7-30	10/16/96	30	2.5	1.0		6.3
B1-7-78	10/16/96	78	4			0.5
B1-8-1	10/16/96	1	84	3.6	<u> </u>	
B1-8-6	10/16/96	6	ND	0.0		
B1-8-30	10/16/96	30	ND			
B1-9-1	10/16/96	1	84	4.7		
B1-9-6	10/16/96	6	59	3.9		
B1-9-30	10/16/96	30	2.6	5.5		
B1-9-78	10/16/96	78	ND			
B1-10-6	10/16/96	6	23			
B1-10-30	10/16/96	30	4.1		•	7.0
B1-10-78	10/16/96	78	ND			7.9
B1-11-6	10/16/96	6	2			
B1-11-30	10/16/96	30	2.6			
B1-11-78	10/16/96	78	3		-	6.8
<u> </u>	10110130	7.0				
	<u></u>	<u> </u>	continued on next page			

APPENDIX B

DRILLING PERMIT
BORING LOGS
WELL CONSTRUCTION DIAGRAMS



a County Ordinance No. 73-68.

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	FOR OPPOSIT
ECATION OF PROJECT Caltrang Lot	FOR OFFICE USE
anan Castro Street	PERMIT NUMBER
Chiland, Ca	WELL NUMBER
ft. CCEft.	PERMIT CONDITIONS
(CAYT	Circled Permit Requirements Apply
Chris 7 Chris	A. GENERAL 1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to
Idress 1320 What He Phone 5/2 755-1192	2. Submit to ACPWA within 60 days after completion o permitted work the original Department of Water Resources Water Well Drillers Report or assistance.
Hayward Zip 94545	well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of
Well Comment	B. WATER SUPPLY WELLS
athodic Protection	I. Minimum surface seal thickness is two inches of
ater Supply Contamination Contamination	\ centent grout placed by tremie.
Monitoring 3 & Well Destruction Bornas	2. Minimum seal depth is 50 feet for municipal and
_	industrial wells or 20 feet for domestic and irrigation
POSED WATER SUPPLY WELL USE w Domestic	wells unless a lesser depth is specially approved. C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
Industrial []	1. Minimum surface seal thickness is two inches of
	cement grout placed by tremie.
LING METHOD: Mud Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary Air Rotary	2. Minimum seal depth for monitoring wells is the
Cable Auger &	maximum depth practicable or 20 feet. D. GEOTECHNICAL
B Geophone	Backfill bore hole with compacted cuttings or heavy
LER'S LICENSE NO. <u>C57-710678</u>	bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied
LL PROJECTS I Hole Diameter 9 in Maximum Ling Diameter 2 in Death 75	E. CATHODIC
Surface Seal Depth 4 ft. Number 3	Fill hole above anode zone with concrete placed by tremit F. WELL DESTRUCTION See attached.
ECHNICAL PROJECTS	G. SPECIAL CONDITIONS
mober of Borings Maximum Hole Diameter 2 in Depth 25 ft.	
ATED STARTING DATE 519199	
ATED COMPLETION DATE 5/29 45	4 PDP 0 V ==
	APPROVED DATE

so	IL E	30	R	IN	G LOG					BORING	NO:	OAK-	
						1				<u></u>			1
L						DBO (COT NAM	15			SHEET	1	OF	1
						PROJECT NAM	IE: Caltra	ns: 6th an	d Castro				
7						NORTHINGS:	IBER: 0/5-9G03	4		DATE: 5/1			
L							IDANIK MARK			EASTING	S:		
					•	DRILLING COM	IPANY: V & W	Drilling, Ri	o Vista,	California			
						DRILLING MET	HOD: Direct Pus	sh (macro-	core)				
						BORING DIAME	ETER: 2 inch			DEPTH: 1	19.5 feet		
								GROUNE					
							ATE	_	COMM			DEP	TH BGS
							9/99	 	init				9 feet
_	T	Т	η-			5/1	9/99		stabi	lized			13
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DE	SCRIPTION		PID (PPM)	uscs		RE	MARKS	
			İΤ	1	Silty Sand with gravel, fine-ç	rained sand, coarse	dravel brown	┼	SM	I Immoved au			
1	OAK1-0.16			L	damp, no odor.		graver, provin	 0	Jam	Unpaved sur	пасе,		
	OAK1-0.30					· · · · · · · · · · · · · · · · · · ·		0	1				
2 —	İ							<u> </u>	1				
				<u>_</u>									,
3									1			,, <u>, , , , , , , , , , , , , , , , , ,</u>	
_ —	OAK1-0.90		Α.	Ļ				0		moisture inci	ease to v	ery moist.	
4	1	48	┝	+-			<u></u>						
▋╶─	İ			\vdash				-					
5—	0AK1-1.5			H		·		+ -					
					<u> </u>			0					
6	1			\vdash		· · · · · · · · · · · · · · · · · · ·		 		 -			
7								 			- ·		
• · 								 					
8	1	48	Щ	↓									
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9—	ł			\vdash									
			Ì	<u> </u>		<u></u> -							
10	OAK1-3.8				· · · · · · · · · · · · · · · · · · ·								
. —			Т	_				0					
1 11 —	i					 :				color change	to brown	green.	
12 —		48	_									·	
					Clayey Sand, fine to medium	sand, mottled brown	n and gray, very		sc			-	
1 3					moist, odor detected.								
										Groundwater	encounte	red.	
14			İ		· · · · · · · · · · · · · · · · · · ·				. [
_		ŀ							[
15—	OAK1-4,5	Í											
_		48	Τ.					312	ļ	 -			
16		ì			<u> </u>					0	4	- 44 - 42	
7_										Boring advan groundwater :		ow collectic	nofa
.									}	a.ve.ivedil			
18									į				
 			:							Total depth =	19.5 feet	bgs.	
9										Refusal at 19.	5 feet bg:	3.	
_		ŀ	,		-	<u> </u>				Groundwater			et bgs.
20	!								[Boring groute	d with ne	at cement.	
L	i												
EVIEV	VED BY	: TIN	4 O'I	BRIE	EN		LOGGED BY:	Scott Bow	rers				

SO	IL E	30	RI	N	G LOG				BORING NO	O: OAK-2	ı
						1					
						PROJECT NAME: Caltra	C44	10	SHEET 1	OF	_1
						PROJECT NUMBER: 575-9G0:	ns: 6th and	ı Castro			
7						NORTHINGS:	<u> </u>		DATE: 5/19/9	<u> </u>	
1						DRILLING COMPANY: V & W	/ Drilling 5	io Viete	EASTINGS:		
						DRILLING METHOD: Direct Pu	ich (macro	VIO AIST	, California	 	
Ŧ						BORING DIAMETER: 2 inch	ASIT (IIIACIU		DEPTH: 20 f	in mt	
						The state of the s	GROUNT	NA/ATE	R LEVELS	eet	
						DATE	T	COMM		DED	ELL DOG
ļ						5/19/99	 	ini			TH BGS
						5/19/99		stabi			ountered
]	0,10,00		atab!	iized	<u> </u>	18
рертн (Реет)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DE	SCRIPTION	PID (PPM)	uscs		REMARKS	
_					Silty Sand with gravel, fine-	grained sand, coarse gravel, brown,		SM	Unpaved surface	3 .	
1_	QAIC2-6.15			L	damp, no odor.		0			<u>. </u>	
l —	OAK2-0.30			_			0				
2—	İ			<u> </u>							
				<u> </u>							
7 3—	CARC2-0.90				··		0				
		48	\sqcap				0		moisture increas	e to very moist.	
4				-			 				
5			Ш								
5—	QAK2-1.5						0				
6—											
_				_							·
7				_							
		48					ļ				
8			\vdash	-			-				
9											
											
10											
- —	OAK2-3.0						0				
■ 11 ,			,								
		48									
12		[+		Clavey Sand fine to madium	sand, mottled brown and gray, very		SC			
—— 13——					moist, odor detected.	, momen brown and gray, very	 	30			
							†				
14							 	;			
								İ		<u> </u>	
15											
⊪ -	0.462-4.5	48					236				
16		"					 				
_			ł	\dashv		<u></u>			Boring advanced		n of a
17 —				\dashv			 		groundwater sam	ipie.	
18_			ľ							 	
			[İ			
19 —				_					Total depth ≃ 20 i	feet bgs.	· · · · · · · · · · · · · · · · · · ·
" -	į		,						Boring drilled to s	ufficient depth for	
_20			ŀ						Groundwater enc		et bgs.
		J					<u> </u>		Boring grouted wi	th neat cement.	
EVIEW	ED BY	': TIN	N O'E	BRIE	N	LOGGED BY:	Scott Bow	rers			
										<u> </u>	

150		3O	RI	N	G LOG					PODINO	NO.	OAK s	
		_				7				BORING		OAK-3	<u> </u>
										SHEET	1	OF	1
						PROJECT NAM		ns: 6th an	d Castro				
)							MBER: 575-9G0	34		DATE: 6/1			
						NORTHINGS:				EASTING	S:	 	
Ì						DRILLING COM	MPANY: V&W	/ Drilling, F	Rio Vista	, California			
						DRILLING MET	THOD: Direct Pu	ish (macro	o-core)				
						BORING DIAM	ETER: 2 inch			DEPTH: 2	20 feet		
1								GROUNI		RLEVELS			
							ATE		COMM	ENTS		DEPT	TH BGS
							19/99	ļ <u> </u>	init			not end	ountered
	1	_	T			5/1	9/99		stabi	ized			18
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT		SCRIPTION		PID (PPM)	USCS		RE	MARKS	
! !			$oxed{oxed}$		Silty Sand with gravel, fine-q	rained sand, coars	e gravel, brown,	<u> </u>	SM	Unpaved sur	rface.		
1_	OAK3-0.16				damp, no odor.			0]				
_	Cs4K3-0.30		H	<u> </u>				0					
2				-									
-					<u> </u>		···	ļ	•	Brick debris			-
3—	CAK3-0.90			_					ļ		_ ,		
		48		_				0					
4—						 _		 					
5—				_				-		<u> </u>			
	OAK3-1,5							0					
6	!							 -					
				L								 -	
7 —				<u> </u>								- · · · · · · · · · · · · · · · · · · ·	<u> </u>
ı —		48		<u> </u>									
8		•	+	_									
' <u>, —</u>				_		<u> </u>							
9								-					
10								 					
	0.463-3.0							0		-			 -
.11								<u> </u>					-
									i			 -	
12 —		48	-		Claure Carat Fact								
					Clayey Sand, fine to medium moist, odor detected.	sand, mottled brow	vn and gray, very	ļ	sc				
13—	ļ												
[<u>, </u>							-	 	}				
14—]						 	 	ŀ				
15—	Ì		_						ŀ			 ·	
	0AK3-4.5							0		Groundwater	encounte	ered	
16	ŀ	48	\perp]					ļ				
, _							-			Boring advan	ced to all	ow collection	n of a
17 —										groundwater:			
·		ļ			-				ļ				
18		-						 	}				
19			l	\dashv					1	Total depth =	20 ಕ್ಲಾ. ⊦		
			ľ	_						Refusal at 20			
20—			į							Groundwater			et bas
								<u></u>		Boring groute			
EVIEW	ED BY	TIN	A O'F	RIF	N		LOGGED BY:	Scott Bow					· · · · · · · · · · · · · · · · · · ·
							LOUGLU DI,	SCOIL BOW					

βO	IL E	3 0	R	IN	G LOG					BORING	NO:	OAK-4	
	-					7				SHEET		OF	1
						PROJECT NA	ME: Caltra	ns: 6th and	d Castro		•		- '
						PROJECT NU	MBER: 575-9G0	34		DATE: 5/1	9/99		
						NORTHINGS:				EASTING	S:		<u> </u>
						DRILLING CO	MPANY: V&V	/ Drilling, F	Rio Vista	. California			
						DRILLING ME	THOD: Direct Pu	ısh (macro	-core)	, <u></u>			
						BORING DIAM				DEPTH: 2	20 feet		
_								GROUNI	OWATE	R LEVELS			
						D	ATE	T -		MENTS	1	DEPT	H BGS
						5/	19/99		ini				ountered
		_		.,_	<u> </u>	5/	19/99		stabi				ountered
		9	ᇦ			·		-					- Cartton Cu
	Ò	5	≥	Ιż									
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	5.5								
Ĕ	₫	ا≍	i iii	>	DE	SCRIPTION		PID	USCS	i	RE	MARKS	
Ш	Ϋ́	ညြ	를	Ō				(PPM)					
Ω	رن	12	SA	100									
		<u> </u>	Т	+-	Silty Sand with gravel, fine-	grained cand accord	to growed become	 	614				
	OAK4-0.16				damp, no odor.	granieu Sand, coars	er gravel, prown,	0	SM	Unpaved sur	rtace.	_	
I	OAK4-0.30				1			0		<u> </u>			
			П				······································	 					
			i I										
3		ĺ	Ш								-· <u></u>		
_	QAK4-0.90		_	ļ				0		moisture incr	rease to v	ery moist	
4		48	┝┿	╅						-			
_				-				 					
5—	DAK (-1,5					· · · · · · · · · · · · · · · · · · ·		0					
6													
								 -		·			
7				L									
				-	Clayey Sand, fine to medium	n sand, mottled broa	wn and gray, very		SC				
8 <u>-</u>		48	+	+	moist, odor detected.								
. I				-				<u> </u>					
9								 -					
													
	DAK4-3.0							0					
_11		ĺ	-	<u> </u>						-		·	
		_		-								***	
₽-		48	+	┼─									
_													
" —													
									l				
	ļ								ŀ	··· · · · · · · · · · · · · · · · · ·			
5— — 16—	Ì			L					ŀ				
°	XXX4-5.5			L.				0	i	· · · · · · · · · · · · · · · · · · ·			
16	ľ	⁴⁸		╀					[·····	
	ĺ			 						Boring advan			v collection
		- {		-				ļ		of a groundwa	ater samp	ole.	
18	l								}		·		<u></u>
									}				
									<i>\</i>	Total depth =	20 feet h	os.	<u></u>
										Refusal at 20			
20—				$ldsymbol{ldsymbol{ldsymbol{eta}}}$						No groundwat			
				ļ					-	Boring grouted			
VIEW	ED BY	: TIN	10	BRIE	N		LOGGED BY:	Scott Bow					-
								OUTE DOW	ui a				
_													

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SO	IL E	3C	R	IN	G LOG					DODING		0416.5	
						7				BORING		OAK-5)
1							···.			SHEET	1	OF	1
						PROJECT NA		ns: 6th and	d Castro				
							MBER: 575-9G03	34		DATE: 5/1			
•						NORTHINGS:				EASTING	S:		
1						DRILLING CO	MPANY: V&W	Drilling, R	io Vista	, California			
						DRILLING ME	THOD: Direct Pu	sh (macro	-core)				
						BORING DIAM	METER: 2 inch			DEPTH: 2	22.5 fee	t	
								GROUN	DWATE	R LEVELS			
							ATE		COM	MENTS		DEP	TH BGS
ł							19/99			tial		not en	countered
	T	T	1	Τ-		5/	19/99		stab	ilized		15	i feet
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT		SCRIPTION		PID (PPM)	USCS		RE	EMARKS	
_		ļ	Ц	_	Silty Sand with gravel, fine-	grained sand, coa	rse gravel, brown,		SM	Unpaved su	rface.		
1—	GAKS-0.15				damp, no odor.			0]				
-	GAK5-0.30			-				0					
2	1			<u> -</u>				<u> </u>					
3_				\vdash				 	}				
]	OAK5-0.90							0	ł				
4		48		L					f	Brick debris			
_													
5—				_							·		
-	OAK6-1.5	1		_	·			0					
6—				⊢		·	 -						
	İ			-				<u> </u>		<u> </u>			
7—				Н						<u> </u>			
8		48	Ш	\vdash			 -						
"		Ì	Π			-							
9—				L									
				<u> </u>					'				
10	Q4K5-10			-			<u>.</u>						
	UARS-1.0		Π.	\vdash				0					
11				\vdash				 		<u> </u>			
12—		48											
'			П		Clayey Sand, fine to medium	n sand, mottled br	own and gray, very		SC				
13—					moist, odor detected.								
 				<u> </u>									
14—				\vdash			· · · · · · · · · · · · · · · · · · ·						
				<u> </u>									
15	OAK5-45			<u> </u>	· · · · · · · · · · · · · · · · · · ·			0		Crownstant			
16		48					·			Groundwater	encount	ered,	
17—													
_													
18	.								i				
													
19							···	_		Poring a # ::		less # "	
20	l	1								Boring advan groundwater		iow collectic	an of a
		ĺ							.	g. +41.3H4161	-Millipie,	 -	
21 —		l								Total depth =	22.5 fee	t bgs.	
<u></u>	į									Refusal at 22	5 feet by	3 8	
22						- 			/	Groundwater	encount	ered at 15 fe	eet bgs.
<u> </u>		[Boring groute	d with ne	eat cement.	
REVIEW	VED BY	: TIM	N O,I	3RIE	:N		LOGGED BY:	Scott Bow	ers				

SO		30	RI	N	G LOG				BORING NO:	OAK-6
	•								SHEET 1	OF 1
1					PROJECT NA	ME: Caltran	s: 6th and	l Castro		
ŀ						MBER: 575-9G03-			DATE: 5/19/99	
					NORTHINGS:				EASTINGS:	
					DRILLING CO	MPANY: V&W	Drilling, R	io Vista,	California	
i					DRILLING ME	THOD: Direct Pus METER: 2 inch	sh (macro	-core)	DEDE::	
ŀ					BORING DIAM		CROUNT	NA/ATE:	DEPTH: 22.5 fe	eet
						DATE	GROUNI	COMM		DEPTH BGS
						/19/99		init		not encountered
	,				· · · · · · · · · · · · · · · · · · ·	/19/99		stabi		15 feet
ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION		PID (PPM)	uscs	F	REMARKS
-				<u> </u>	Sity Sand with gravel, fine-grained sand, coar	se gravel, brown,		SM	Unpaved surface.	
1	OAK6-0.15 OAK6-0.30			-	damp, low plasticity fines, no odor.		0			
2_							<u> </u>			
	ļ									
3	OAK6-0.90									
	CAP-0-0.160	48					0		Bright dobrie about	
4-									Brick debris observ	/ec.
5_			1							
I —	OAK8-1.5						0			
6										
7—										
· —										· · · · · · · · · · · · · · · · · · ·
8		48	+							
9—										
10										
_	O.AK6-3.0		Τ.				0	·		
11										
12—		46	Ш							
<u>-</u>					Clayey Sand, fine to medium sand, mottled bro	own and gray, very		SC		
13				-	moist, low plasticity fines.					
14										
'										
15	OAK8-4.5									
-		49					<u> </u>		Groundwater encou	intered.
16—										
17—			ļ	\Box						
_			}					ļ		
18			ŀ	\dashv					 	
19									 -	
_										allow collection of a
20	i		}						groundwater sample	9.
21			ļ					<i>,</i>	Total depth = 22.5 f	eet hos
-									Refusal at 22.5 feet	
22			- [\dashv				/ [Groundwater encou	ntered at 15 feet bgs.
ļ	1							/	Boring grouted with	neat cement.
REVIEW	ÆD BY	TIN	A O'E	RIE	N	LOGGED BY:	Scott Bow	ers		

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SO	IL F	30	R	11	IG	LOG					202016			
		_					I				BORING		OAK-7	
_											SHEET	1	OF	1
							PROJECT NA		ns: 6th and	d Castro				
T								MBER: 575-9G03	4		DATE: 5/1			<u> </u>
L							NORTHINGS:				EASTING	S:		
							DRILLING CO	MPANY: V&W	Drilling, R	<u>io Vista,</u>	California			
r e							BORING DIAM	THOD: Direct Pus	sn (macro-	-core)	DESTU			
							BORING DIAW	ILIER. ZINCH	OPOLINI	DIA/A TEI	DEPTH: :	20 feet		
						ŀ		DATE	GROUNI		R LEVELS			
								19/99	 	COMN				TH BGS
								19/99	 	stabi				countered 3 feet
			با						 	Stabi) leet
ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL			DES	SCRIPTION		PID (PPM)	uscs		RE	MARKS	
					Sil	ity Sand with gravel, fine g	rained sand, coa	rse gravel, brown,		SM	Unpaved su	rface.		
1	OAK7-0.15				da	amp, low plasticity fines.			0	1			- -	
_	CAK7-0.30			4					0	1				
2	ŀ			┝						ļ				
				\vdash	┰				ļ					
3—	QAK7-0.98				十				0		maintura inc			
4_		48	\prod								moisture inc	rease to	/ery moist.	· · · · · · · · · · · · · · · · · · ·
·			П							1				
_ 5—		ĺ	Ш		_ _									
<u> </u>	OAK7-1.5			-	+				0					
6				-				<u> </u>	· -					
				\vdash	+									
7				r	_			-						
8		48							<u> </u>					
				_	_									-
9				-			 <u></u> -				color change	to dark i	orown	
				\vdash										
10—	OAK7-3.0								0			_		_
11_									-					
					T						- ·· -			
12		48	\dashv	+	1									
_				\vdash		ayey Sand, fine to medium	sand, mottled bro	own and gray, very		SC				
13				-	ino	pist, low plasticity fines.			 					
				\vdash	+-									
B ¹⁴ —											<u> </u>			
15 —					\Box									
	0AI(7-4.6			١_	-				0					
16		48		+	+-									
				-	+				<u> </u>		Boring advar		low collection	of a
- 17		ļ		\vdash	+-						groundwater	sample.		
18									· · · · · · · · · · · · · · · · · · ·					
19				L	4						Total depth =	20 feet.		
-				\vdash	+	_								or investigation
20 —		,		-	+						Groundwater			et bgs.
											Boring groute	od with ne	at cernent.	
REVIEW	VED BY	: Til	N 0'	BR	IEN			LOGGED BY:	Scott Bow	ers				

SO	IL E	3 0	R	IN	G LOG					BORING	NO.	046	
┡						ו				<u> </u>		OAK-	<u> </u>
┛						PPO IFOT NA	145			SHEET	1	OF	_1
						PROJECT NA	ME: Caltra MBER: 575-9G0:	ns: 6th an	d Castro		40155		
7						NORTHINGS:		34		DATE: 5/			
4							MPANY: V&W	/ Drilling	Zio \/ict/	EASTING			
						DRILLING ME	THOD: Direct Pu	ish (macro	VIO AIST	t, California	···········		 -
7						BORING DIAM	METER: 2 inch	aon (macre	/~UIB)	DEPTH:	20 feet		
1								GROUN	DWATE	R LEVELS	20 169(•	
							ATE			MENTS		DEP	TH BGS
7						5/	19/99	·		tial			countered
						5/	19/99			ilized	_		8 feet
ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DES	SCRIPTION		PID (PPM)	USCS		RE	MARKS	
			Ш		Silty Sand with gravel, fine-g	rained sand, coars	se gravel, brown,		SM	Unpaved su	rface.		
1—	OAK8-0.15				damp, no odor.			0]				
-	OAK8-0.30	1		-				0					
2				-				<u> </u>					
3 —				-						<u> </u>			
"_	OAK8-0.90							0	f	moisture inc	racco to :	rame majes	
4		48	\prod					 		moistage are	Tease ID V	AGI Y MOISE	
_				<u> </u>				<u> </u>					<u> </u>
5—	OAK8-1.6										•		
	CAPUS-1.8			-				0					
6								_					
7_								 		 			
_								 -					
8		48	Ц.	-									
Γ —				Н				-					
9				\vdash							_		
10	ĺ					 					·		
	OAK8-3.0							0					
11				\square				-					
_				├─┤									
12		48	+		Clavey Sand fine to	Aand W **							
				┝┈┥	Clayey Sand, fine to medium moist, odor detected.	sariu, momed brot	wn and gray, very		SC				
13								 					
14													
<u> </u>													
15 —	DAK#4.5			$\vdash \vdash$									
	1							0					
16	Ì	ŀ		\vdash				 		Rorina = + = -			
17		J								Boring advangroundwater		ow collection	л of a
-	Į									· · · · · · · · · · · · · · · · ·			
_18	[
_]			-+									
19 —	l									Refusal at 20			
20_										Boring drilled Groundwater	encounte	ent depth fo	r investigation.
								 		Boring groute			er não.
HEVIEW	ÆD BY	: TIN	ı O'l	BRIE	 N		LOGGED BY:	Scott Bow		<u> </u>		, , , , , , , ,	
								OCUIL DOW	C15	·			

SO	IL E	3 0	R	N	G LOG				BORING	NO.	OAK-9	<u> </u>
				_		ī			SHEET		OF	 1
						PROJECT NAME: Caltr	ans: 6th an	d Castro		' -	<u> </u>	
						PROJECT NUMBER: 575-9G	034		DATE: 5/	20/99		······································
						NORTHINGS:			EASTING	S:		
-						DRILLING COMPANY: V&	V Drilling, I	Rio Vista	, California			
						DRILLING METHOD: Direct F	ush (macro	o-core)				
						BORING DIAMETER: 2 inch			DEPTH:	20 feet		
						DATE	GROUN		RLEVELS			
					:	DATE 5/20/99	+		IENTS	-		TH BGS
L						5/20/99		ini etabi	ized	— <u></u>		countered
			بد	1.				Stabi	ilzed		18	feet
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DES	SCRIPTION	PID (PPM)	USCS		RE	MARKS	
.					Silty Sand with gravel, fine-g	rained sand, coarse gravel, brown,		SM	Unpaved su	rface.		
1	CAK9-0.15 CAK9-0.30			Ī	damp, no odor.		0]				
	C04(9-0.30						0					
2—							 -	_	<u></u>		 .	
3 <u>—</u>			<u> </u>				+	1	 -			<u></u>
_	CAK9-0.90						0	1	moisture inc	rease to v	ery moist.	
4		48	⊬	 _]				
				-								
5—	OAK9-1.5						0			· · · · · · · · · · · · · · · · · · ·		
6—							 	ł		··		
				Ш				İ				
7—						 						
8_		48										
												
9				Ш								
<u> </u>												
10	QAK9-3.0		_1									
							0			<u>.</u>		
.							+ -			 ·		
12 —		48	\perp									
					Clayey Sand, fine to medium moist, low plasticity fines.	sand, mottled brown and gray, very		SC				
13—					morac, row plasticity fines.							
14								-				
								Ì			·	
15	Dare											
-	OAK9-4.5	48					0					
16		-		\dashv			 	}				
17 —]		İ				 	}		_		
-	j	-	ļ					ļ				
18			ŀ	-					Boring advan		ow collection	n of a
	ļ		-	\dashv			 -		groundwater:			
19 —		-					+		Total depth = Refusal at 20		gs.	
_20							 		Groundwater		red at 18 fee	et bas
				[Boring groute			
EVIEW	ÆD BY	: TIN	N O'E	BRIE	N	LOGGED BY:	Scott Bow					
												

SOIL BORING LOG BORING NO: OAK-10 SHEET 1 OF 1 PROJECT NAME: Catrans 8th and Castro PROJECT NAME: Catrans 8th and Catrans 8th and Catrans 8th and Catrans 8th and Catrans 8th and Catrans 8th and Catrans 8th and Catrans 8th and Catran	SO	II F	RO	R	IN	GIOG							-	
PROJECT NAME: Caltrans. 6th and Casto PROJECT NAME: 754-90034 PROJECT NAME: PROJECT NAME: EASTINGS: DRILLING COMPANY: V.8 W Drilling, Rio Vista, California DRILLING MET HOD: Dreet Push (macro-core) BORING DIAMETER: Pinch DATE: SCOWNENTS DEPTH BS SCOWN EVENS DATE: COMMENTS DEPTH BS SCOWN EVENS DEPTH BS SCOWN			_			<u> </u>	7						OAK-1	D
PROJECT NUMBER: 575-90-034 NORTHINGS: EASTINGS: DRILLING COMPANY: V.S.W Drilling, Rio Vista, Cambraia DRILLING COMPANY	L											1	OF	1
NORTHINGS: DRILLING COMPANY: V & W Drilling, Rio Vista, California DRILLING MET HOD: Direct Push (macro-core) BORING DIAMETER: 2 inch GROUNDWATER LEVELS DEPTH 19 feet GROUNDWATER LEVELS S/2099 stabilized 17 feet S/2099 stabilized 17 feet 17 events a service of the se									ns: 6th and	d Castro		_		
DRILLING COMPANY: V & W Drilling, Riv Veta, Celifornia DRILLING COMPANY: V & W Drilling, Riv Veta, Celifornia DRILLING METHOD: Direct Fush (macro-core) BORING DIAMETER: 2 inch GROUNDWATER LEVELS DATE COMMENTS DEPTH BIGS 5/20/99 Initial not encountered fatabilized 17 feet DESCRIPTION PID USCS REMARKS PMARKS PMARKS PMARKS DEPTH BIGS 1/2 PMARKS PMARKS PMARKS PMARKS PMARKS PMARKS PMARKS DESCRIPTION PID USCS REMARKS Departed surface. Departed surface. To company to	Ŧ							MBER: 575-9G03	34		DATE: 5/2	20/99		
DRILLING METHOD: Direct Push (macro-core)	1							-			EASTING	S:		
BORING DIAMETER: 2nch DEPTH: 19 feet GROUNDWATER LEVELS COMMENTS DEPTH BGS S72099 initial not encountered S72099 stabilized 17 feet S72099 stabilized 17 feet DESCRIPTION PID USCS REMARKS PID USCS REMARKS	Ì						DRILLING COM	IPANY: V&W	Drilling, F	Rio Vista	, California			
DATE COMMENTS DEPTH BGS S20/09 Initial Initi	ţ						DRILLING MET	HOD: Direct Pu	sh (macro	-core)				
DATE SCAMENTS DEPTH BGS SACADING Initial not anocumbred of 5/20/99 stabilized 17 feet of 17 feet of 18 feet of]						BORING DIAM	ETER: 2 inch	- <u></u> -			19 feet		
SCOUPS Initial not encountered St20199 stabilized 17 feet St20199 stabilized 17 feet St20199 stabilized 17 feet St20199 stabilized 17 feet USCS REMARKS PM	Ì								GROUNI					
STORY STATE OF THE									ļ				DEP	TH BGS
DESCRIPTION PID USCS REMARKS Part													not end	countered
Sity Sand with gravel, fine-grained sand, coarse gravel, brown, damp, no odor. Octobros Comparis Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Unpaved surface. SM Oncomparis SM Unpaved surface. SM Oncomparis SM Unpaved surface. SM Oncomparis SM Unpaved surface. SM Oncomparis SM Oncompar	_	T	т	Τ.	\top	T	5/2	:0/99		stabi	lized		17	feet
Cisyey Sand, fine to medium sand, motified brown and gray, very SC SC Sc Sc Sc Sc Sc Sc	ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DE	SCRIPTION			USCS		RE	MARKS	
Cisyey Sand, fine to medium sand, motified brown and gray, very SC SC Sc Sc Sc Sc Sc Sc	l					Silty Sand with gravel, fine-	rained sand, coarse	gravel, brown,		SM	Unpayed su	rface		
2 ONCHASE 3 ONCHASE 4 O O ONCHASE 4 O O ONCHASE 5 ONCHASE 6 ONCHASE 7 ONCHASE 8 O O ONCHASE 11 O ONCHASE 12 ONCHASE 13 ONCHASE 14 O O ONCHASE 15 ONCHASE 16 ONCHASE 17 ONCHASE 18 O O ONCHASE 18 O O ONCHASE 18 O O ONCHASE 19 O ONCHASE 19 O ONCHASE 19 O ONCHASE 10 O ONCHASE 11 O ONCHASE 12 O ONCHASE 13 O ONCHASE 14 O O ONCHASE 15 O ONCHASE 16 O ONCHASE 17 O ONCHASE 18 O O ONCHASE 18 O O ONCHASE 19 O ONCHASE 10 O ONCHASE 19 O O ONCHASE 19 O O O O O O O O O O O O O O O O O O O	1_	1	1						0		pavaa ou			
3 OMISSAS A 4 OMISSAS A 5 OMISSAS A 6 OMI		CAK10-0.39		F	Ļ				0]				
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00000000000000000000000000000000000000					\vdash									
4	3—	OAK10-0.96		Ш	-		 -				<u> </u>		<u> </u>	
5— OKINAS 44 Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. SC Boring advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs. Boring groundwater encountered at 17 feet bgs.	_		48	П	1-				u					
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OMILIAS OMI	5_		l	Ш					 	*			 .	-
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9 — 10 — 0xxxxxx 44	7—				\vdash		_							
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10 — ONCIO 3.3 11 —	9													
11 — 48						/								
11 — 12 — 14					_									
Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. 14		CAK10-3.0		-		<u> </u>			0				-	
Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. 14— 15— 00x10-15 16— 17— 18— 19— 19— 20— Clayey Sand, fine to medium sand, mottled brown and gray, very SC Boring advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neaf cement.	■11				\vdash									
Clayey Sand, fine to medium sand, mottled brown and gray, very moist, odor detected. 14— 15— 00x10-15 16— 17— 18— 19— 19— 20— Clayey Sand, fine to medium sand, mottled brown and gray, very SC Boring advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neaf cement.	_	·	48		-									
moist, odor detected. 14— 15— 16— 17— 18— 19— 20— moist, odor detected. 0 Defining advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	- 12					Clayey Sand, fine to medium	sand, mottled brow	n and grav very		SC	 -			
15— 16— 17— 18— 19— 20— 20— 20— 20— 20— 20— 20— 20— 20— 20	 					moist, odor detected.		g.=y, roif						
15 — OAK104.5 16 — He de de de de de de de de de de de de de	_				L						-			
ONXID-15 16 — 17 — 18 — 19 — 20 — 18 — 20 — 19 — 20 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 20 — 19 — 20 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 18 — 18 — 19 — 19 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 18 — 18 — 19 — 19 — 10 —	■ 14				<u></u>									
ONXID-15 16 — 17 — 18 — 19 — 20 — 18 — 20 — 19 — 20 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 19 — 19 — 20 — 19 — 20 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 18 — 18 — 19 — 19 — 10 — 10 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 16 — 17 — 18 — 18 — 19 — 19 — 10 —					\vdash									
16— 17— 18— 19— 20— 18— 20— 18— 20— 18— 20— 18— 20— 20— 20— 20— 20— 20— 20— 20— 20— 20	15	OAKID-45		į	-									
Boring advanced to allow collection of a groundwater sample, Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	• —		40		-				. 0					
Boring advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	_10		İ		†									
Boring advanced to allow collection of a groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	17_									i				
groundwater sample. Total depth = 19 feet bgs. Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	" _	}			匚						Boring advan	ced to all	ow collectio	n of a
Refusal at 19 feet bgs. Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	18													
Groundwater encountered at 17 feet bgs. Boring grouted with neat cement.	-]			├-									
20 — Boring grouted with neat cement.	19—	į	ļ		<u> </u>									
	~-	ļ			-									et bgs.
EVIEWED BY: TIM O'BRIEN LOGGED BY: Scott Bowers	20										poring groute	en milw be	at cement.	
	EVIEW	ÆD BY	: TIN	vi O'	BRI	EN	L	OGGED BY:	Scott Bow	/ers				

SO	11 F	30	R	N	G LOG							
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_									SHEET	1	OF	1
ľ						PROJECT NAME: Caltrai	ns: 6th and	d Castro				
•						PROJECT NUMBER: 575-9G03	34		DATE: 5/2			
						NORTHINGS:	<u></u>		EASTING			
Í						DRILLING COMPANY: V & W	/ Drilling, F	Rio Vista	, California			
ļ						DRILLING METHOD: Direct Pu	ish (macro	-core)				
						BORING DIAMETER: 2 inch			DEPTH: 2	20 feet		
i							GROUNI		R LEVELS			
						DATE	-		MENTS		DEPT	TH BGS
1						5/20/99	<u>-</u>		tial		not end	ountered
<u> </u>	T	T	Τ.	Т		5/20/99		stab	lized		18	feet
ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DES	SCRIPTION	PID (PPM)	USCS		RE	MARKS	
					Silty Sand with gravel, fine-gr	rained sand, coarse gravel, brown,		SM	Unpaved sur	rface		
1_	OAK11-0.15	1			damp, low plasticity fines, no	odor.	0	J	Suparou su	: KITUS.		
_	CAK11-0,30	i		Ļ			0					
2	İ			<u> </u>								
				<u> </u>								
3—	OAK11-0.90											
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<u> </u>	OAK11-1,5						0				<u> </u>	
6				<u> </u>								
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7—												
8—		48										
9												
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10	OAK11-3.0											
	Over 1 Face			-			0					
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12		48										
					Clayey Sand, fine to medium	sand, mottled brown and gray, very		SC				
13					moist, odor detected.			- 1	<u> </u>	 -		
_											 	
14												
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15	Q4K11-4.5						0					
16—		48					-	,				
		ſ							<u> </u>	 -		
17 —												
■ _	ļ	ļ							Boring advan		ow collection	ofa
_18	I	-							grou ndwater :	sample.		
10				-+					Total 4 "	00.1		
19—	İ								Total depth = Refusal at 20		gs.	
20_							 .		Groundwater		red at 18 for	et bas
									Boring groute			n vys.
EVIEW	ÆD BY	TIN	A O'F	RIF	N	LOGGED BY:	Can# C :-		9 3			
					· ·	LOGGED BT:	Scott Bow	ers			•	
											 ,	

SO	IL E	30	RI	N	G LOG									
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ľ						PROJECT NA			s: 6th and	d Castro				
"						PROJECT NU NORTHINGS:		9G034			DATE:		6/17/99	
.						DRILLING CO					EASTING			
H						DRILLING CO			UO: 1 OI		V&W	DRILL	ING	
•						BORING DIAM			HOLLOV					
_						BORING DIA	VIETER:		8 INCHE		DEPTH:		20 FEET	
							DATE		GROUNL		RLEVELS			
5							/17/99		INITIAL	COMM				TH BGS
	_					<u> </u>	11133		MALIPAL	GROOM	DWATER		14	4.5 FEET
1 2 3 4 5 6 7 7 8 9 10 11 12 13 14 15 16 17 17 16 17 17 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	SAMPLE NO.	8 RECOVERY (IN)	SAMPLE INTERVAL	7 9 20 330 35 40	Sand with gravel, fine to coal Sand, medium grained, brow Sand, as above.		rown, damp.		PID (PPM)		Some wood Groundwater	encoun encoun	tered.	and for
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18 —			f								well installation	n.		
19 —	j		ļ				_,	 -		/				
ا				\Box						/				
20				\bot					/	'				
							LOGGED	BY: (CHRIS ME	ERRITT				

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ı İ						PROJECT NA	ME	Caltrar	s: 6th and	Cootes	SHEE	1	OF	2
						PROJECT NU		9G034		Castro	DATE:		447/00	
						NORTHINGS:			 -	<u> </u>	EASTINGS		/17/99	
1					i	DRILLING CO								
						DRILLING ME			HOLLOV	W STEM	ALICED	RILLIN	G	
'						BORING DIAM			8 INCHE		DEPTH:		e ccct	
.											RLEVELS		.5 FEET	
							ATE		L	COMM		1	DEDT	11.000
'							17/99		INITIAL		DWATER			H BGS
									111111111111111111111111111111111111111	5110011	DWAILK		10	FEET
ОЕРТН (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DES	SCRIPTION			PID (PPM)	USCS		REI	MARKS	
					Silty Sand, fine to medium sa	and, brown, dry, lo	w plasticity			SM				·
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	1												TOTAL TILLIEN	<u> </u>
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.		18	1		Sand, brown, medium graine	d, damp.				SP				
6		10		16 24										
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] 7 —	i					· · · · · · · · · · · · · · · · · · ·							·	
8 _								_			Color change	to mottle	d creen	
'											Hydrocarbon		a green.	
9 —														
										[
10 —			┰	11	Sand, mottled green, otherwi	Pa de abour								
11 _		18		17	Ozara, motilod groom, burierwi	se as above.					Groundwater			
l '' 🗀				23							Strong hydrod	arbon od	or.	
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15					· · · · · · · · · · · · · · · · · · ·					}				
			П		Sand, dark green, otherwise a	as above.				ļ				···
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				!	Log continues downward.									
							LOGGED	BY:	CHRIS MI	ERRITT				

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						PROJECT NAM	ME: Caltra	ns: 6th and	d Castro			
						PROJECT NUM				DATE:	6/17/99	
•						NORTHINGS:				EASTINGS		
<u>.</u>						DRILLING COM				V&W D	RILLING	
						DRILLING ME						
•						BORING DIAM	ETER:			DEPTH:	21.5 FEE	T
•						<u> </u>		GROUNI		RLEVELS		
						D,	ATE	 	COMM	ENTS	DE	PTH BGS
•								 		<u> </u>		
			پ	"		<u> </u>		 		<u> </u>		
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT		SCRIPTION		PID (PPM)	USCS		REMARK	S
		18		16	Sand, green, wet, medium g	rained.	 		SP			
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2 _							, <u>,</u>			Total depth 21	5 foot	
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							PROJECT NAM	E: Caltrar	ns: 6th and	Castro		-	<u> </u>	
8							PROJECT NUM			<u> </u>	DATE:		6/17/99	
1							NORTHINGS:				EASTING			
							DRILLING COM				V&W	DRILLIN	1G	
•							DRILLING METI		HOLLOV					
						•	BORING DIAME	TER:	8 INCHE		DEPTH:	2	1 FEET	
t l									GROUND		LEVELS			
!							DA		15.15-71.4.1	COMM				TH BGS
							6/17	799	INTITAL	GROUNI	OWATER		9.	.5 FEET
DEPTH (FEET)	(SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DES	SCRIPTION		PID	USCS		RE	MARKS	
	i	SA	REC	SAMP	L	Silty Sand, fine to medium sa	and brown doc love	plantait.	(PPM)	SM SM			<u> </u>	
4	_					only come, mic to medium sa	ario, brown, dry, low	piasticity.		SM				
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5	-			\top	15	Sand, medium grained, brow	n damn			SP				
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									SHEE 2	OF 2
•l					PROJECT NA	AME: C	altrans: 6th and	Castro	<u> </u>	
					PROJECT N		G034		DATE:	6/17/99
•					NORTHINGS	<u>:</u>			EASTINGS:	
_					DRILLING CO		-		V&W DRILL	ING
					DRILLING ME	THOD:	,			
					BORING DIA	METER:			DEPTH:	<u> </u>
							GROUNI	WATER	LEVELS	
						DATE		СОММ	ENTS	DEPTH BGS
3										
	T			1						
DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION		PID (PPM)	USCS	R	EMARKS
H —	Ì	12			Sand, brown, medium, damp.			SC		
1 —			Ц.	50/6						
T . —				<u> — </u>					Total depth 21 feet.	
2 —									Boring terminated a well installation.	t depth sufficient for
з —									weii installation.	
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						LOGGED B	Y: CHRIS M	ERRITT		

MONI	TORING V	VELL CONST	RU	CTION DA	ATA	L	WELL/BORING NO:	MW-1
	, <u>.</u>						PERMIT NO:	
DATE:	17/99	PROJECT NAME:	C	ALTRANS 6TH	H ANI	D CASTRO	PROJECT NO: 9G0	134
WELL SÍ	TE LOCATION	PLAN:	SEC	C: TWN:	:	RGE:	LAT: L	ONG:
			DRI	LLING CO:	V&\	W DRILLING		
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							TE DOUBLE CASED	_
	WELL SCH	EMATIC	۲	TEMPORAR	tY.		OTHER	OTHER
4		TT1		DECC	ON.	STEAM CL SOAP WAS	EAN ☐ HIGH PRESSUR SH ☐ OTHER	
		TOC ABOV						·
		GROUND RISER BO	1 1	CASING TYP	PE: TS:	THREADS	STAINLESS TEFLOID WELDED CO	N DOTHER
		OR STICK				SCREWEE	OTHER	
		3 F	т. 📗	PIT CASIN	NG:	∐ YES □	NO DESCRIBE	
-	A C	1	= $ $	WELL SCREE	EN:	PVC 🗆	STAINLESS TEFLOR	OTHER
ŀ				SLC	=R: DT:	□ 2" □ □ 0.010 ■	4" G6" OTHER	IN
lг	ANNULAR	BOREHOL DIAMETE					M HOLLOW STEM	
	BACKFILL	•		METHO	DD:	AIR ROTAL	RY DIRECT PUSH	☐ HAND AUGER
		8 14	4.	RIT SIZ		OTHER	☐ 6" ■ 8" ☐ 12" [
j L	3 FT.		_	DRILLING MU	JD:	NONE	☐ WATER ☐ BE	OTHER IN
_	CEMENT	CASING DIAMETE		CENTRALIZE		□ OTHER □ YES I		
TOTAL WELL	BENTONITE							
DEPTH	GROUT□ SILICA SAND□	2 IN SCH. 40		LOCK TYP	ON: PE: 1	FLUSH MC ■ DOLPHIN	DUNT STICKUP MASTER KEYI	RISER BOX
FROM	NATIVE SOIL					OTHER		
,,,,,	j k						☐ 4'X4' ☐ OTHER	
20 FT.	-	<u> </u>		CUTTING	SS:	DRUMMED	NUMBER OF DRUMS	
	SEAL	☐ BENTONITE	İ					
	t FT.	☐ MASONRY SAN	ID	DEVELOPMEN METHO	NT ND· √	☐ NONE	■ BAILING □ PUMPIN BLOCK □ OTHER	G □ AIR LIFT
'		 	_	TIM	1E: 1	10 MIN	20 MIN DOTHE	R MIN
_			ļ	AMOUN WATER BEFOR	NT (RE: [☐ 5 GAL ☐ SILTY	☐ 10 GAL ☐ OTHE	RGAL DUE □ CLEAR
	FILTER PACK	WELL	_ _	WATER AFTE	R: [SILTY	TURBID OPAC	UE CLEAR
		SCREEN		EVIDENT ODO	HK: [YES	NO TYPE	
	16 FT.	LENGTH		DEVELOPMEN				
		15 F	т.				☐ TREATED ☐ PO	
"		■	_	WATER LEVE	L:	INITIAL 14	. <u>5_</u> FT □ BTOC [BGS
	<u> </u>		_	DAT	E:			FT BELOW TOC
•	OVER	WELL CLIME	\Box	DAT	E:			FT BELOW TOC
	X	WELL SUMF		NOTES:	(DES		-STANDARD METHODS & MA	
	CROSS OUT IF	11	y. [•
Ņ	IOT DRILLED)							
		35574°						
			DDE	DADED DV:		-:	OVIDIO *****	
			FKE	PARED BY:			CHRIS MERRITT	

MONITORING WELL CONST	RU	CTION DA	TA	WELL/BORING NO	D: MW 2
				PERMIT NO:	
DATE: 6/17/99 PROJECT NAME:		AI TRANS 6TH	AND CASTRO	PROJECT NO:	00004
WELL SITE LOCATION PLAN:		C: TWN:		LAT:	LONG:
	DRI		V&W DRILLING		
		ILL CREW:			
	-		SHALLOW	SINGLE CASED	MONITORING
				TE DOUBLE CAS	
	<u> </u>	TEMPORARY		OTHER	☐ OTHER
WELL SCHEMATIC			INSTA	LLATION DATA	•
TOC ABOV		DECO	N. STEAM CL	EAN HIGH PRES	SSURE WASH
GROUND RISER BC OR STICK	IF X	TMIOL	S: THREADE	STAINLESS TEI	FLON OTHER COUPLED
3 F	т.	PIT CASIN	G: YES	NO DESCRIBE	
1		DIAMETE	ર: 🔳 2" 🔲	STAINLESS TEI 4" 6" OTI 0.020 OTHER	HER IN
BOREHOL DIAMETE	R	DRILLIN METHO	G SOLID STED:	EM HOLLOW STE RY DIRECT PUSH	M MUD ROTARY HAND AUGER
3 FT. CASING	<u></u>	BIT SIZ		☐ 6* ■ 8" ☐ 1 ☐ WATER ☐	12" OTHER IN BENTONITE
CEMENT DIAMETE	R	CENTRALIZE	R: ☐YES Î	NO	
WELL GROUT 2 IN DEPTH SILICA SAND SCH. 40 FROM NATIVE SOIL 2		COMPLETION LOCK TYPE	N: FLUSH MO E: DOLPHIN	UNT STICKUP	RISER BOX
TOC OTHERD	_	PAI	=	☐ 4'X4' ☐ OTHER_	
20 FT. SEAL BENTONITE	_	CUTTING	S: DRUMMED SPREAD	NUMBER OF DRU	JMS
☐ MASONRY SAN	4D	METHO): SURGE & E	BAILING PUR	R
FILTER	_	AMOUN	T ∐ 5 GAL	20 MIN	DTHER MIN DTHER GAL DPAQUE CLEAR DPAQUE CLEAR
PACK WELL		EVIDENT ODOR	R: YES 🔲	NO TYPE HYP	POCARSON
16 FT, SCREEN LENGTH			T DRUMMED		
15 F		WATER LEVE	.: INITIAL 10	2_ FT □ ВТС	C BGS
* *	_	DATE	i:		FT BELOW TOC
OVER WELL SUMP	וה	DATE	<u> </u>		FT BELOW TOC
□ YES □ N	10	NOTES:	DESCRIBE ALL NON	I-STANDARD METHODS	& MATERIALS)
(CROSS OUT IF IN NOT DRILLED)	N.]				
	1				
	PRE	PARED BY:		CHRIS MERRI	T

MONITORING WELL CONSTI	RU	CTION DAT	Α	WELL/BORING NO:	MW 3
				PERMIT NO:	
DATE: 6/17/99 PROJECT NAME:	Ç	ALTRANS 6TH A	ND CASTRO	PROJECT NO: 9G0	034
WELL SIFE LOCATION PLAN:	SEC	C: TWN:	RGE:	LAT: L	ONG:
	DR	ILLING CO: V	&W DRILLING		
		LL CREW:			
				SINGLE CASED	
	"	TEMPORARY	□ INTERMEDIA □ DEÉP	TE DOUBLE CASED	☐ OTHER
WELL SCHEMATIC	_			LLATION DATA	COME
TOC ABOV	_	DECON.	STEAM CL	EAN ☐ HIGH PRESSUE	RE WASH
GROUND I RISER BO OR STICKL	x 📗	JOINTS:	THREADE	STAINLESS TEFLOID CONTROL CONT	N OTHER
3 F	<u>T.</u>]	WELL SCREEN:	PVC 🗆	STAINLESS TEFLOI	N OTHER
BOREHOL		SLOT:	0.010	0.020 OTHER _	IN
ANNULAR DIAMETER BACKFILL 8 IN		METHOD:	☐ AIR ROTAF	EM HOLLOW STEM RY DIRECT PUSH	HAND AUGER
3 FT. CASING	 	BIT SIZE: DRILLING MUD:	☐ 2* ☐ 4* ☐ 4* ☐ NONE ☐ OTHER	☐ 6" ■ 8" ☐ 12" ☐ BE	OTHER IN
TOTAL BENTONITE		CENTRALIZER;	_	NO	-
WELL GROUT 2 IN DEPTH SILICA SAND SCH. 40 FROM NATIVE SOIL TOC OTHER O		LOCK TYPE:	■ DOLPHIN □ OTHER	OUNT STICKUP MASTER KEY 4'X4' OTHER	NO
	_		TORUMMED	NUMBER OF DRUMS	
20 FT.			SPREAD	OTHER	
1 FT. □ MASONRY SAN □ OTHER	_	METHOD: TIME: AMOUNT	SURGE & E	BAILING PUMPIN BLOCK OTHER 20 MIN OTHE 10 GAL OTHE	ERMIN
FILTER WELL SCREEN		WATER BEFORE: WATER AFTER: EVIDENT ODOR:	SILTY	☐TURBID ☐ OPAC	QUE CLEAR
16 FT. LENGTH		DEVELOPMENT WATER:	DRUMMED SPREAD		
15 F		WATER LEVEL:	INITIAL 4.	<u>.</u> 5	BGS
*	_	DATE:			FT BELOW TOC
OVER RELL SUMP □ YES ■ N		DATE: NOTES: (DE			
(CROSS OUT IF IN	y.]				·
		PARED BY:	<u> </u>	CHRIS MERRITT	

WELL PURGING AND SAMPLING DATA

					•		WELL N	IO:	mw I
DATE:7	2/99	PROJECT	NAME: Q	ALTRAN	5 GH	Y-CAST	PROJEC	CT N	O:
WEATHER CONDITIONS: SUNNY, WARM									
WELL DIAMETER (IN.)									
SAMPLE TYPE: GROUNDWATER WASTEWATER SURFACE WATER OTHER									
WELL DE	PTH (TOC))	23.28	FT.	DEPTH TO WATER BEFORE PURGING (TOC) /9.89 FT.				
LENGTH (OF WATER	₹	FT.	CALCULATED ONE WELL VOLUME1: .57 x3 = 1.72 GAL					
PURGING DEVICE: DEDICATED DISPOSABLE DECONTAMINATED									
SAMPLING DEVICE: DEDICATED DISPOSABLE TO DECONTAMINATED									
☐ AL	EQUIP. DECON.								
CONTAIN	ER PRESE	RVATION	: LAB	PRESERVE) PRESERV	ED		
WATER A	NALYZER	MODEL &	SERIAL N	o: MYRO	20	ULTRAC	neter	. (602 155
ACTUAL TIME (MIN)	CUMUL. VOLUME PURGED (GAL)	TEMP "F "C	SPECIFIC CONDUCT.	рН	ORP	TURBIDITY (NTUS) TDS	WATER APPEAR CL≠CLEAR CO=CLOUDY TU=TURBID	(€	REMARKS VIDENT ODOR, COLOR, PID)
10:55	INITIAL	20.0	1597	6.95	117	1152	TY		,
11:02		19.2	1700	6.90	166	1223	Ти		:
11:05	1.25	19.5	1726	6.87	144	1250	Tu		
11:07	1.75	18.2	1774	6.87	161	1285	Ty		
,							·		· · · · · · · · · · · · · · · · · · ·
DEPTH TO WATER AFTER PURGING (TOC) FT. SAMPLE FILTERED YES NO SIZE									
NOTES:	NOTES: SAMPLE TIME: 1/10 ID#								ID#
			ا	DUPLICATE TIME: ID#:					
		·		EQUIP. BLANK: TIME: ID#:					
					PREPARED BY:				

MX

PSI 1 A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIPE Rev. 12/95

WELL PURGING AND SAMPLING DATA

							WELL	10: MWZ	
DATE: 7	2 9	PROJECT	NAME: (ACTEAN	15 Gth.	+ Castro	PROJE		
WEATHER CONDITIONS: SUNNY, WARM									
WELL DIA	WELL DIAMETER (IN.) ☐ 1 1 2 ☐ 4 ☐ 6 ☐ OTHER								
SAMPLE	SAMPLE TYPE: GROUNDWATER WASTEWATER SURFACE WATER OTHER								
WELL DE	PTH (TOC)	2	2.74	FT	DEPTH	TO WATER	RBEFORE	PURGING (TOC) 14.21 FT.	
LENGTH OF WATER 8.53 FT. CALCULATED ONE WELL VOL							DLUME1: 1.45 x 3 = 4.35 GAL.		
PURGING DEVICE: DEDICATED DISPOSABLE DECONTAMINATED									
	G DEVICE:				☐ DEDIC	CATED [] DISPOSA	BLE DECONTAMINATED	
AL	EQUIP. DECON. TAP WATER WASH ISOPROPANOL ANALYTE FREE FINAL RINSE ALCONOX WASH DIST/DEION 1 RINSE OTHER SOLVENT DIST/DEION FINAL RINSE LIQUINOX WASH DIST/DEION 2 RINSE TAP WATER FINAL RINSE AIR DRY								
1	ER PRESE		_			D PRESERV			
		MODEL &	SERIAL N	O: MYROI 	N L UC	TRAMET	FL G	002155	
ACTUAL TIME (MIN)	CUMUL VOLUME PURGED (GAL)	TEMP	SPECIFIC CONDUCT.	pН	ORP	TDS	WATER APPEAR CL=CLEAR CO=CLOUDY TU=TURBID	REMARKS (EVIDENT ODOR, COLOR, PID)	
1130	INITIAL	20.1	2211	6.78	93	1022	CO	hylrocarbon oder	
1135	1.0	20.6	2053	6.71	16	1506	TU	11	
1141	3.0	19.8	1658	6.53	-3	1195	Ty	11	
1147	4.35	19.5	1495	6.47	-19	1068	TY	\1	
						<u></u>			
DEPTH T	DEPTH TO WATER AFTER PURGING (TOC) FT. SAMPLE FILTERED YES NO SIZE								
NOTES:	NOTES: SAMPLE TIME: 1150 ID#								
					DUPLICATE TIME: ID#:				
E						EQUIP. BLANK: TIME: ID#:			
				· · · · · · · · · · · · · · · · · · ·	PREPARE	D BY:			

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PSI 1 A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIP

WELL PURGING AND SAMPLING DATA

							WELL I	NO: MW3	
DATE: 7	2199	PROJEC'	T NAME: (CALTRA	HN5 64	+CASTR	PROJE		
WEATHER CONDITIONS: WELL SUNNY, WARM									
WELL DIAMETER (IN.)									
SAMPLE	TYPE: (GROUN	DWATER	□was	TEWATER	SURI	ACE WATE	R OTHER	
WELL DEPTH (TOC) 22.54 FT. DEPTH TO WATER BEFORE PURGING (TOC) 14.51 F)14.51 FT.
LENGTH OF WATER 7.97 FT. CALCULATED ONE WELL VOLUME 1.1.35 × 5 11 3 TAL									
PURGING DEVICE: DEDICATED DISPOSABLE DECONTAMINATED									
	G DEVICE				☐ DEDI	CATED [DISPOSA	BLE EDECON	TAMINATED
EQUIP. D			P WATER V			ISOPROPA		ANALYTE FREE	FINAL RINSE
=	CONOX WA QUINOX WA		=	ION 1 RINS					
	ER PRESE			ION 2 RINS			R FINAL RII	NSE AIR D	RY
			SERIAL N			D PRESERV		602185	
	· · · · · · · · · · · · · · · · · · ·			·. [-1,7]		1 b-4-(1-1)	F1 5-K	@0T(2)	
ACTUAL TIME (MIN)	CUMUL. VOLUME PURGED (GAL)	TEMP "F "C	SPECIFIC CONDUCT.	ρΗ	ORP	TURBIBITY (NTUB)	WATER APPEAR CL=CLEAR CO=CLOUDY TU=TURBID	REMA (EVIDENT ODOR	
9:55	INITIAL	21.9	2105	6.86	\$5D	1537		(Slightly t	urbid
10:02	1.35	20.1	1790	6.86	83	1293	Tu	0	
10:07	2.70	19.7	1504	6.88	105	1068	Tu		
10:14	4.05	19.3	1327	6.44	114	935	Ty		
	-				,				
	-								
							<u></u>	,	
					<u> </u>				
			<u> </u>				<u> </u>		
DEPTH TO WATER AFTER PURGING (TOC) FT. SAMPLE FILTERED ☐ YES ☑ NO SIZE									
NOTES: SAMPLE TIME: 1020 ID#									
						DUPLICATE TIME: ID#:			
E						EQUIP. BLANK: TIME: ID#:			
					PREPARED BY:				

PSI 1 A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIP



APPENDIX C

LAND SURVEYOR REPORT



PSI Environmental, Inc. 1320 West Winton Avenue Hayward, CA 94545

Ph: (510) 785-1111 Fax: (510) 785-1192

Attn: Chris Merritt

Re: Vacant Lot @ the NW corner of 6th & Castro Streets.

Monitoring Well Locations & Elevations

MSE Project #: 99103

July 19, 1999

Dear Mr. Bowers,

According to your request, on July 2, 1999 our surveyors established the location and elevation of three (3) monitoring wells MW-1 through MW-3 in a vacant lot at the NW corner of 6th & Castro Streets, Oakland.

Basis of elevation: Found "[]" cut. Mid point return of the SE corner 6th & M.L. King Jr. El.= 20.23'. NGVD 29 datum

Co-ordinates & Elevations are given in tenths and hundredths of feet.

Well elevations are taken from marked points at the Northerly edge of the PVC pipes unless noted otherwise.

Northing	Easting	Elevation	Description
6136.92	2813.82	26.85	MW-1
6007.92	2759.21	21.56	MW-2
6009.08	2917.48	21.04	MW-3

Sincerely, MSE, INC.

Donna De Souza, LSIT Project Manager

Cc: File

Stanley T. Gray, F

EXP. 9/30/2000

PLS 6784

APPENDIX D

LABORATORY RESULTS AND CHAIN-OF-CUSTODY RECORDS



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY . CHEMICAL AND BIOLOGICAL ANALYSES

Client: PS

1320 W. Winton Ave. Haward, CA 94545

Date Sampled:

05/19/99

Date Received:

05/20/99

Job Number:

14919

Project: Caltrans: 6th/Castro

CASE NARRATIVE

The following information applies to samples which were received on 05/20/99:

No sample containers for sample WOAK-3 were received. The remaining samples were received at the laboratory chilled and samle containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.I. Laboratory Director

ELAP # 1184

DL: Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Soil ... Analyst: RVJ/RLB Date Sampled: 05/19/99
Date Received: 05/20/99

Date Digested: 05/21/99
Date Analyzed: 05/24/99
Batch Number: 6010S1216

Method Number: 6010

mg/kg 5:0 5.0 5.0	mg/kg ND 8.6
5.0	
NASA BANG SANGKIN IN IN SANGKAN SANGKAN KANTAN KANTAN MANAKAN MANAKAN KANTAN KANTAN MANAKAN MANAKAN MANAKAN MA	8.6
5.0	SECURE SECTION OF A SECURE SECURE SECTION OF THE PROPERTY OF A SECURE SECURE SECURE SECURE SECURE SECURE SECURE
	15
5.0	19
5.0	18
5.0	. 56
5.0	1,700
5.0	11
5.0	9.8
5.0	13
ramanan iran salas salas salah kecasa di kecasa salah salah salah salah salah salah salah salah salah salah sa T	
	5.0 5.0 5.0 5.0 5.0



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Soil Analyst: RVJ/RLB Date Sampled: 05/19/99 Date Received: 05/20/99

 Date Received:
 05/20/99

 Date Digested:
 05/24/99

 Date Analyzed:
 05/24-26/99

 Batch Number:
 6010S1217

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	ND.
OAK3-4.5	5.0	15
OAK4-0.15	5.0	110
OAK4-0.30	5.0	51
OAK4-0.90	5.0	77
OAK4-1.5	10	48
OAK4-3.0	5.0	18
OAK4-4.5	5.0	16
OAK5-0.15	5.0	100
OAK5-0.30	5.0	200
OAK5-0.90	5.0	18
OAK5-1.50	5.0.	
OAK5-3.0	5.0	
OAK5-4.5	5.0	9 to 10 titl 100 (100 til 100 til 100 til 100 til 100 til 100 til 100 til 100 til 100 til 100 til 100 til 100 34
OAK6-0.15	5.0	98
	2012 (1904) 1904 1905 1905 1905 1905 1905 1905 1905 1905 1905 1905 1905 1905 1905 	
sin ne lune nii enune une mestes helf-esulla ve helm usheel		
		1957 - Santania Baratan, 1984 - 1986 -



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Soil Analyst: RVJ

 Date Sampled:
 05/19/99

 Date Received:
 05/20/99

 Date Digested:
 05/25/99

 Date Analyzed:
 05/26/99

 Batch Number:
 6010S1219

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	NĐ
OAK6-0.30	5.0	21
OAK6-0.90	5.0	14
OAK6-1.5	5.0	11
OAK6-3:0	5.0	16
OAK6-4.5	5.0	17
- 일본교교대학생 원론경공		

Matrix: Soil Batch #: 6010S1216

Batch Accuracy Results

Compound	Spike Concentration mg/Kg	% Recovery LCS	cepta	% Recovery	bass/Fail
Lead	50	104.3	75 -	125	Pass

Analy	ical Notes:	_
-		

Batch Precision Results

MS/MSD Sample ID:	14927-8		± 6	Limit	
Compound	Spike Sample Recovery mg/K	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control I. RPD	Pass/Fail
Lead	72.0	68.7	5%	20%	Pass

MS. Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:
•

Matrix: Soil

Batch #: 6010S1217

Batch Accuracy Results

	Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
--	----------	------------------------------	----------------	---------------------------------	-----------

Analytic	cal Notes:	
		٠
		_
1		*

Batch Precision Results

MS/MSD Sample ID:	14936-4				
Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	67.3	67.6	0%	20%	Pass

S: Matrix Spike Sample	
ISD: Matrix Spike Duplicate	

Analytical I	Notes:	
·		

Matrix: Soil Batch #: 6010S1219

Batch Accuracy Results

Spike (mg/Kg Accept % Recc		e Concentration Kg	Recovery LCS	cceptance Limits Recovery	Pass/Fail
	Compound	Spik mg/		Acce	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 14926	nple mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Control Limit	ia:
Compound	Spike Sar Recovery	Spike Du Recovery	Relative Po	Upper RPD	Pass/Fail
Lead	58.7	60.8	4%	20%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:					



Client: PSI Date Sampled: 05/19/99 Project: Caltrans: 6th/Castro Date Received: 05/20/99 Job No.: 14919 Date Digested: 05/25/99 Matrix: Water Date Analyzed: 05/26/99 Analyst: **RVJ/RLB** Batch Number: 6010W1218 Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	0.10	ND
WOAK-2	0.10	0.26
WOAK-1	0.10	0.53
WOAK-5	0.10	0.33
WOAK-6	0.10	NO

Matrix: Water Batch #: 6010W1218

Batch Accuracy Results

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	10	106.3	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 14928		uplicate y.mg/L	Percent	Control Limit	
Compound	Spike Sample Recovery mg/	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD	Upper C RPD	Pass/Fail
Lead	1.096	1.101	0%	20%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:		
•		
	1	
		-



EPA 413.2 - Oil & Grease

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix: 14919 Soil

Analyst:

CP/JL

Date Sampled: 05/19/99

Date Received: 05/20/99

Date Extracted: 05/24/99

Date Analyzed: 05/24/99

Batch Number: 4132S1032

	Detection Limit	Total Oil & Grease
Sample ID	mg/kg	mg/kg
Method Blank	10	ND
OAK2-0.15	10	33
OAK2-0.30	10	29
OAK2-0.90	10	. 11
OAK2-1.50	10	ND
OAK2-3.0	- 10	ND
OAK2-4.5	10	63
OAK1-0.15	10	53
OAK1-0.30	10	23
OAK1-0.90	10	21
OAK1-1.50	10	22
OAK1-3.0	10	16
OAK1-4:5	10	53
OAK3-0.15	_. 10	22
OAK3-0.30	10	280
OAK3-0.90	10	문학을 문항하는 것으로 시간되었다. 이 가장 합니다. 전 49
OAK3-1.50	10	16
OAK3-3.0	10	12
OAK3-4.5	10	22
OAK4-0.15	10	27 0
OAK4-0.30	10	270 120



EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Soil Analyst: CP/JL Date Sampled: 05/19/99 Date Received: 05/20/99 Date Extracted: 05/24/99 Date Analyzed: 05/25/99 Batch Number: 4132S1033

	Detection Limit	Total Oil & Grease
Sample ID	mg/kg	mg/kg
Method Blank	10	ND
OAK4-0.90	10	430
OAK4-1.5	10	81
OAK4-3.0	10	13
OAK4-4.5	10	ND
OAK5-0.15	10	430
OAK5-0,30	10	200
OAK5-0.90	10	76
OAK5-1.50	10	16
OAK5-3.0	. 10	13
OAK5-4.5	10	120
OAK6-0.15	10	440
OAK6-0.30	10	180
OAK6-0.90	10	47
OAK6-1.5	10	46
OAK6-3.0	10	
OAK6-4.5	10	46

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil Batch #: 4132S1032

Batch Accuracy Results

1			
Spike Concentration	% Recovery LC	Acceptance Lim % Recovery	Pass/Fail

Analytical	Notes:	
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Batch Precision Results

MS/MSD Sample ID: OAK3		very	# (î	Limit	
Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control I RPD	Pass/Fail
Reference Oil	56.36	56.74	1%	22%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes	5 :
	* .
}	

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil Batch #: 4132S1033

Batch Accuracy Results

	entration	rcs	Limits	
Analyte	Spike Conce mg/Kg	% Recovery	Acceptance % Recovery	ass/Fail

Analytical Not	es:	
		<i>*</i> .
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		* *;
		*,

Batch Precision Results

MS/MSD Sample ID: OAK5	Rесоvегу	te Recovery	Percent ce (RPD)	Control Limit	
Analyte	Sample mg/Kg	Duplicate mg/Kg	Relative Po Difference	Upper C RPD	Pass/Fail
Reference Oil	64.7 6	64.28	1%	⊃ <u>~</u> 22%	<u>o</u> Pass

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:	
	-
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EPA 413.2 - Oil & Grease

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Water Analyst: CP/JL Date Sampled: 05/19/99 Date Received: 05/20/99 Date Extracted: 05/20/99 Date Analyzed: 05/20/99

Batch Number: 4132W1030

	Detection Limit	Total Oil & Grease
Sample ID	mg/L	mg/L
Method Blank	2.0	ND
WOAK-2	3.1	19
WOAK-1	3.6	12
WOAK-5	2.3	ND
WOAK-6	26	ND



QC Report - EPA 413.2 Oil & Grease

Matrix: Water

Batch #: 4132W1030

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	⊃ass/Fail
Reference Oil	10	113	70 - 13	

Analytic	al Not	es:		
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Recovery mg/Kg
Recovery mg/Kg
Relative Percent
Difference (RPD)
Analyte

Reference Oil

11.27 10.95 3% 25% Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate Analytical Notes:

Insufficient amount of sample available for MS/MSD analysis. An LCS/LCSD pair were analyzed to provide precision data for this batch.



Modified 8015 - Fuel Screen

Client:

PSI

Project:

Caltrans; 6th/Castro

Job No.; Matrix: 14919 Soil

Analyst:

NBP

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Extracted:

05/24-25/99

Date Analyzed:

05/24-25/99

Batch Number:

8015DS1637

Fuel Identified:	Gasoline	Motor Oil	Extractable Hydrocarbons	Detection Limits
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Blank	· ND	ND	ND ND	10
OAK2-0.15	. ND	ND	ND	10
OAK2-0.30	ND	ND	ND	10
OAK2-0.90	. ND	ND	ND	10
OAK2-1.50	ND ND	ND	ND	10
OAK2-3.0	ND	ND	ND	10
OAK2-4.5	48*	ND	ND	10
OAK1-0. 1 5	ND	ND	ND	10
OAK1-0.30	ND	ND	ND	10
OAK1-0.90	ND	· ND	ND	. 10
OAK1-1.50	ND	ND	ND	10
OAK1-3.0	ND	ND	ND	10
OAK1-4.5	120*	ND	ND	10
OAK3-0.15	ND	ND	ND	10
OAK3-0.30	ND ND	18*	ND	10
OAK3-0.90	ND	ND	ND	10
OAK3-1.50	ND	ND	ND	10
OAK3-3.0	ND	ND	ND	10
OAK3-4.5	ND	ND	ND	10
OAK4-0.15	ND	ND	13*	10
OAK4-0:30	ND	15*	ND	10

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as indicated.



Modified 8015 - Fuel Screen

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Soil Analyst: NBP Date Sampled: 05/19/99
Date Received: 05/20/99
Date Extracted: 05/24-25/99
Date Analyzed: 05/24-25/99

Date Analyzed: 05/24-25/99
Batch Number: 8015DS1638

Fuel Identified:	Gasoline	Motor Oil	Extractable Hydrocarbons	Detection Limits
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Blank	ND ND	ND	ND	10
DAK4-0.90	ND	18*	18*	10
DAK4-1.5	ND	ND	ND	10
DAK4-3.0	ND	ND	ND	10
DAK4-4.5	ND	ND	ND	10
DAK5-0.15	ND	13*	ND	10
DAK5-0.30	ND	13*	ND	10
DAK5-0.90	ND	ND	ND	10
DAK5-1,50	ND	ND	ND	10
DAK5-3.0	ND	ND	ND	10
DAK5-4.5	ND	ND	ND	10
DAK6-0.15	ND	ND	15*	10
DAK6-0.30	ND	ND	22*	10
PAK6-0.90	ND	ND	ND	10
DAK6-1.5	ND	ND	12*-	10
OAK6-3.0	ND	ND	ND	10
OAK6-4:5	ND	ND	ND	10
		and the second	maanaan ka ka maa ja sa marka sa sa sa sa sa sa sa sa sa sa sa sa sa	ent de Pall III de berege di de 1984 i 1985 en

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as indicated.



QC Sample Report - EPA 8015M Diesel

Matrix: Soil

Batch #: 8015DS1637

Batch Accuracy Results

Sample ID: Laboratory Con	·	s S	Limits	
Analyte	Spike Concentration mg/Kg	% Recovery L	Acceptance Li % Recovery	Pass/Fail
Diesel	100	101	70 - 130	Pass

Analytical Notes:	
r i i	
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Batch Precision Results

	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Analyte	Rec	Spik Reo	Rela	Upp RPD	Pass

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Analytical Notes:

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



QC Sample Report - EPA 8015M Diesel

Matrix: Soil Batch #: 8015DS1638

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	100	100	70 - 130	Pass

Analytic	al Note	es:		_
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Spike Sample
Recovery mg/Kg
Spike Duplicate
Recovery mg/Kg
Relative Percent
Ditterence (RPD)
Analyke
Dieset
Dieset
Pass/Fail

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	



Modified 8015 - Fuel Screen

Client: PSI Date Sampled: 05/19/99 Project: Caltrans: 6th/Castro Date Received: 05/20/99 Job No.: 14919 Date Extracted: 05/25/99 Matrix: Water Date Analyzed: 05/26/99 Analyst: NBP Batch Number: 8015DW1639

Fuel Identified:			Gasoline	Extractable Hydrocarbons	Detection Limits
Units:			mg/L_	mg/L	mg/L
Blank			ND	ND	0.40
WOAK-2	Addisonology con	::::::::::::::::::::::::::::::::::::	11*	ND	0.71
WOAK-1 WOAK-5			12*	ND	1.67
WOAK-6			ND ND	0.46* ND	0.43 0.53
			Eugaval Pere Eugaval Pere		

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as indicated.

QC Sample Report - EPA 8015M Diesel

Matrix: Water Batch #: 8015DW1639

Batch Accuracy Results

Analyte σ F $lpha$ $lpha$ $lpha$	Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	[∋] ass/Fail
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Analytical Notes:	
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Batch Precision Results

Spike Sample Recovery mg/L Spike Duplicate Recovery mg/L Relative Percent Difference (RPD) Upper Control Limit RPD	Diesel	0.79	0.72	9%	25%	Pass	
MS/MSD Sample ID: Laboratory Control Sample	Analyte	Sample ery mg/L			_	Pass/Fail	

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	
-	
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix:

14919 Soil

Analyst:

GR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/20/99

Batch Number:

8015GS2226

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/kg	mg/kg
Method Blank	0.50	ND.
OAK2-0.15	0.50	·. ND
OAK2-0.30	0.50	ND
OAK2-0.90	0.50	ND .
OAK2-1.50	0.50	ND
OAK2-3.0	0.50	ND
OAK2-4.5	12.5	99
OAK1-0.15	0.50	ND
OAK1-0.30	0.50	ND
OAK1-0.90	0.50	ND
OAK1-1.50	0.50	ND
OAK1-3.0	0.50	ND
OAK1-4.5	25	600
OAK3-0.15	0.50	ann a aiseach Gaireanach aiseach air a leach a geachan, an an 15 an 15 an 15 an 15 an 15 an 15 an 15 an 15 an 1 2.0
OAK3-0.30	0.50	N D
OAK3-0.90	0.50	1
OAK3-1,50	0.50	ND



Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst:

GR

Soil

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/25/99

Batch Number:

8015GS2231

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/kg	mg/kg
Method Blank	0.50	ND ND
OAK3-3.0	0.50	ND .
OAK3-4.5	0.50	ND
OAK4-0.15	0.50	nd .
OAK4-0.30	0.50	ND
OAK4-0.90	0.50	ND
OAK4-1.5	0.50	ND
OAK4-3.0	0.50	ND
OAK4-4.5	0.50	ND
OAK5-0.15	0.50	ND
OAK5-0.30	0.50	ND
OAK5-0.90	0.50	rasana rata kalendara kan barangan barangan baran baran baran baran baran baran baran baran baran baran baran b ND
OAK5-1.50	0.50	ND
OAK5-3.0	0.50	ND
OAK5-4.5	0.50	ND
OAK6-0.15	0.50	PERSONAL PROPERTY OF THE PROPE
OAK6-0.30	0,50	ND
OAK6-0.90	0.50	ND
OAK6-1.5	0.50	ND
OAK6-3.0	0.50	ND ND
OAK6-4.5	0.50	ND

QC Sample Report - EPA 8015M Gasoline

Matrix: Soil

Batch #: 8015GS2226

Batch Accuracy Results

Sample ID: Laboratory Con	Spike Concentration grammage may Kg	very LCS	nce Limits very	· .
Analyte	Spike C mg/Kg	% Reco	Acceptance % Recovery	Pass/Fai
Gasoline	10.0	95	70 - 130	Pass

Analytical Notes:	
	*2
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Batch Precision Results

MS/MSD Sample ID: 14917	, g	olicate mg/Kg	ercent (RPD)	Control Limit	
Analyte	Spike Sample Recovery mg/	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD	Upper Con RPD	Pass/Fail
Gasoline	9.89	9.29	6%	25%	Pass

110.11.10.0
MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:	

QC Sample Report - EPA 8015M Gasoline

Matrix: Soil

Batch #: 8015GS2231

Batch Accuracy Results

Sample ID: Laboratory Cont	Spike Concentration mg/Kg	Recovery LCS		cceptance Limits	Recovery	ss/Fail
Analyte Gasoline	<u>සි දි</u> 10.0	99 39	70	₹	ያ 130	Pass

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Batch Precision Results

MS/MSD Sample ID: I	_aboratory Cont	rol Samp	le		
Anaiyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.92	10.05	1%	25%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI Date Sampled: 05/19/99 Project: Caltrans: 6th/Castro Date Received: 05/20/99 Job No.: 14919 Date Analyzed: 05/21/99 Matrix: Water Batch Number: 8015GW2228 Analyst: GR

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/L	mg/L
Method Blank	0.5	ND:
WOAK-2	5.0	58
WOAK-1	5.0	39)
WOAK-5	0.5	. ND
WOAK-8	0.5	ND

QC Sample Report - EPA 8015M Gasoline

Matrix: Water

Batch #: 8015GW2228

Batch Accuracy Results

Sample ID: Laboratory	Control Sample	<u>e</u>		
Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	98	70 - 130	Pass

Analytical I	Notes:		· .
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		-	
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1			

Batch Precision Results

MS/MSD Sample ID: Labo	ratory Conf	rol Samp	le		
Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.75	9.07	7%	25%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes	<u>: </u>
-	
	-



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix:

Soil

Analyst:

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260\$1697, 8260\$1698

	Sample ID:	Blank	OAK2-0.15	OAK2-0.30	OAK2-0.90	OAK2-1.50	OAK2-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND .	ND	ND	ND
Benzene	0,001	ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	· ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ON	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	DN
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlarobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0,002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0:002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ane 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0,001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	NĎ	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene		ND	ND	ND	ND ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND ND	ND	ND .
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND ND	ND ND	ND ND	ND ND



Client:

PSI . Project: Caltrans: 6th/Castro

Job No.: 14919

Matrix: Soil Analyst: **JMR** Date Sampled:

05/19/99

Date Received: Date Analyzed: 05/20/99 05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

<u> </u>	Sample ID:	Blank	OAK2-0.15	OAK2-0.30	OAK2-0.90	OAK2-1.50	OAK2-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND:	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND.	ND
lsopropylbenzene	0.001	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	NĐ	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0,001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND -	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	0.003	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

	City) Entities, or	J = 100					
	Sample ID:	Blank	OAK2-0.1	5 OAK2-0.30	OAK2-0.90	OAK2-1.50	OAK2-3.0
Dibromofluoromethane		103	105	112	103	103	102
Toluene-d8		105	103	108	103	100	102
Bromofluorobenzene		108	104	104	103	112	103

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Client:

PS1

Project:

Caltrans: 6th/Castro

Job No.:

14919 Soil

JMR

Matrix:

Analyst:

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260S1697, 8260S1698

t-Butyl alcohol 0.050 ND ND ND ND ND ND ND ND ND ND ND ND ND		Sample ID:	Blank	OAK2-0.15	OAK2-0.30	OAK2-0.90	OAK2-1.50	OAK2-3.0
t-Butyl alcohol 0.050 ND ND ND ND ND ND ND ND ND ND ND ND ND	Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethyl-t-butyl ether 0.005 ND ND ND ND	-Butyl alcohol	0.050	ND	ND	ND ·	ND	ND	· ND
	Diisopropyl ether	0,005	ND .	ND	ND	ND	ND	ND
CSSS - decode approximation and the contract of the contract o	Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
t-Amyl-methyl ether 0.005 ND ND ND ND ND ND	t-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst: Soil **JMR**

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

. *		OAK1-0.15	OAK1-0.30	OAK1-0.90	OAK1-1.50	OAK1-3.0	OAK3-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ND .
Benzene	0.001	ND	ND	ND	ND	0.002	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND.	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	. ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	NĐ	ND	ND	ND	ND.
Carbon tetrachloride	0.001	· ND	ND	ND	ND	ND	ND
Chlarobenzene	0.001	ND	ND	ND	DM	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	NĐ	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	· ND
Dibromochloromethane	0.002	ND.	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ane 0.01	ND	MD	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	. IO
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND .	ND	ND .
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND ND	ND ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix:

Soil

Analyst:

JMR

Date Sampled:

.

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

	Sample ID:	OAK1-0.15	OAK1-0.30	OAK1-0.90	OAK1-1.50	OAK1-3.0	OAK3-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	0.13	0.006
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND ·	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	NO	ND	ND	0.035	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (Mt	BE) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	0.003	ND	ND	0.030	ND
n-Propylbenzene	0.001	ND	ND	ND	NĐ	0.20	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	0.002	0.002	ND	ND	0.12	0.001
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	0.048	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND ND
Xylenes (total)	0.003	ND	ND	ND	ND	0.096	0.025

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	OAK1-0.15	OAK1-0.30	OAK1-0.90	OAK1-1.50	OAK1-3.0	OAK3-0.15
Dibromofluoromethane	99	105	106	106	99	104
Toluene-d8	99	104	109	105	95	95
Bromofluorobenzene	93	112	104	111	95	88



Client:

PSI

Project:

Job No.;

Matrix:

Analyst:

Caltrans: 6th/Castro

14919 Soil

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260\$1697, 8260\$1698

	Sample ID:	OAK1-0.15	OAK1-0.30	OAK1-0.90	OAK1-1.50	OAK1-3.0	OAK3-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	. ND	ND	ND	ND	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
t-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND	ND
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Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix:

Soil

Analyst:

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260S1697, 8260S1698

	Sample ID:	OAK3-0.30	OAK3-0.90	OAK3-1.50	OAK3-3.0	OAK3-4.5	OAK4-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ND
Benzene	0.001	ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochioromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND .	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND .	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0,002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ane 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND .
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloraethene	0.005	ND	ND	ND	ND ND	ND	ND ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0,002	ND	ND	ND	ND	ND ND	DN D
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1,3-Dichloropropane	0.001	ND	ND	ND	ND ND	ND ND	ND ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	DI	ND	ND ND	ND ND	ND ND	and the second
cis-1,3-Dichloropropene	0.001	ND	ND	ND	the management of the first of the	All the control of the control of the con-	ND
trans-1,3-Dichloropropene		ND ND	ON D	Committee of the commit	ND ND	ND	ND
and the Dictionable belle	0.001	NU	NU	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix:

Soil

Analyst:

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed: Batch Number: 05/23-26/99

8260\$1695, 8260\$1696

8260\$1	697,	8260S1	698

	Sample ID:	OAK3-0.30	OAK3-0.90	OAK3-1.50	OAK3-3.0	OAK3-4.5	OAK4-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	ND
p-isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
r⊢Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sai	mple ID: C	AK3-0.30	OAK3-0.90	OAK3-1.50	OAK3-3.0	OAK3-4.5	OAK4-0.15
Dibromofluoromethane		110	101	105	103	103	107
Toluene-d8		99	97	99	102	103	101
Bromofluorobenzene		101	106	103	106	102	96



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919 Soil

JMR

Matrix: Analyst: Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

· · · · · · · · · · · · · · · · · · ·	Sample ID:	OAK3-0.30	OAK3-0.90	OAK3-1.50	OAK3-3.0	OAK3-4.5	OAK4-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	ND	ND	ND	ŊD	ND
Diisapropyl ether	0.005	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
t-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND	ND'



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst: Soil

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260\$1697, 8260\$1698

	Sample ID:	OAK4-0.30	OAK4-0.90	OAK4-1.50	OAK4-3.0	OAK4-4.5	OAK5-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND .	ND	ND	ND	ND :	ND
Benzene	0.001	ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND:	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0,005	ND	ND	ND	ND	ND	ND
Bromomethane.	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	DN	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND -	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND ·	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chiorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ne 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorabenzene	0.002	ND	ND	ND	ND ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND 1	ND	ND ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND ND	ND	ND ND	ND ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND ND	ND	ND ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

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Matrix: Analyst:

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JMR

Date Sampled:

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05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260S1697, 8260S1698

· · · · · · · · · · · · · · · · · · ·	Sample ID:	OAK4-0.30	OAK4-0.90	OAK4-1.50	OAK4-3.0	OAK4-4.5	OAK5-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (Mt	BE) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0,001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	DO	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND .	ND ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0,001	ND ND	ND ON	ND	ND ND	ND	ND ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	A CONTRACTOR OF STREET SECTION
1,2,4-Trimethylbenzene	0.001	ND	ND	0.001	ND ND	ND:	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND ND
Vinyl chloride	0.002	ND ND	ND	ND	ND	The State of the Section Co. Co.	ND NO
Xylenes (total)	0.003	ND	ND	ND	ND	ND ND	ND ND

Surrogates (% recovery) Limits: 80 - 130

				_		
Sample	ID: OAK4-0.30	OAK4-0.90	OAK4-1.50	OAK4-3.0	OAK4-4.5	OAK5-0.15
Dibromofluoromethane	105	106	110	107	104	107
Toluene-d8	97	100	101	104	104	100
Bromofluorobenzene	94	99	92	100	104	100
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Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

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Matrix: Analyst: Soil

JMR

Date Sampled:

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Date Received: Date Analyzed:

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Batch Number:

8260S1695, 8260S1696

8260S1697, 8260S1698

	Sample ID:	OAK4-0.30	OAK4-0.90	OAK4-1.50	OAK4-3.0	OAK4-4.5	OAK5-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
-Butyl alcohol	0.050	ND	ND	ND	ND	ND	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND.	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

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Matrix:

JMR.

Analyst:

Date Sampled: Date Received:

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Date Analyzed: 05/23-26/99

Batch Number: 8260S1695, 8260S1696

8260\$1697, 8260\$1698

	Sample ID:	OAK5-0.30	OAK5-0.90	OAK5-1.50	OAK5-3.0	OAK5-4.5	OAK6-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ŇD
Benzene	0.001	ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ŅD	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromeform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND ·	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ON	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlarobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chlaroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ane 0.01	NĐ	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	NO	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND	ND ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst: Soil

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260S1697, 8260S1698

	Sample ID:	OAK5-0.30	OAK5-0.90	OAK5-1.50	OAK5-3.0	OAK5-4.5	OAK6-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	ND	0.002
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropyibenzene	0,001	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	D.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	0.002	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	0.010

Surrogates (% recovery) Limits: 80 - 130

	ery) Emilio.	00 - 100					
	Sample ID:	OAK5-0.30	OAK5-0.90	OAK5-1.50	OAK5-3.0	OAK5-4.5	OAK6-0.15
Dibromofluoromethane		102	106		105	108	105
Toluene-d8		100	105	103	104	102	07
Bromofluorobenzene		99	100	107	106	102	91



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

JMR

Matrix:

Soil

Analyst:

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/23-26/99

Batch Number:

8260\$1695, 8260\$1696

8260S1697, 8260S1698

	Sample ID:	OAK5-0.30	OAK5-0.90	OAK5-1.50	OAK5-3.0	OAK5-4.5	OAK6-0.15
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	ND	ND	ND	ND	ND
Diisopropyl ether	0.005	ND	NO	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
t-Amyl-methyl ether	0.005	ND	NΩ	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst: Soil

JMR

Date Sampled:

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Date Analyzed:

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Batch Number:

8260\$1695, 8260\$1696

8260S1697, 8260S1698

	Sample ID:	OAK6-0.30	OAK6-0.90	OAK6-1.50	OAK6-3.0	OAK6-4.5
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND
Benzene	0.001	ND	ND	ND:	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	. ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND
2-Butanone (MEK)	0,01	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND .	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND
Carbon disulfide	0.01	. ND	ND	ND	ND:	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloroprop	ane 0.01	ND	ND	ND	. ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	NO	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND -
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND S
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix

Soil

Analyst:

JMR

Date Sampled:

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05/20/99

Date Analyzed: Batch Number: 05/23-26/99

8260\$1695, 8260\$1696

8260S1697, 8260S1698

	Sample ID:	OAK6-0.30	OAK6-0.90	OAK6-1.50	OAK6-3.0	OAK6-4.5	
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Ethylbenzene	0.001	ND	ND	ND .	ND	ND	
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	
2-Hexanone	0.01	ND	ND	ND	ND	ND	e e en en agon en en en anten de en en en en en en en en en en en en en
Isopropylbenzene	0.001	ND	OM	ND	ND	ND	
p-isopropyltoluene	0.002	ND	ND	ND	ND	ND	* **** **** **** **** **** ***
Methylene chloride	0.05	ND	ND	ND	ND	ND	
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND [.]	ND	
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	ND	
Napthalene	0.002	ND	ND	ND	ND	ND	en usa energia para lee la lee mara
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	
Styrene	0.001	ND	ND	ND	ND	ND	F 100 F. W.C. A. C. A. C. C. C. C. C. C. C. C. C. C. C. C. C.
1,1,1,2-Tetrachloroethane	0,001	ND	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	**************************************
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	
Toluene	0.001	ND	ND	ND	ND	ND	a Assistantini, ilo 82
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	. ND	ND	
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	** 1570557 875884 8 4.08
Trichloroethene	0.001	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	
Trichlorofluoromethane	0,001	ND	ND	ND	ND	ND	
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	in in the sample state at the Co
1,2,4-Trimethylbenzene	0.001	ND	ND	0.001	ND	ND	
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	1 munu 8 x 1.61
Vinyl chloride	0.002	ND	ND	ND	ND.	ND	
Xylenes (total)	0.003	ND	ND	ND	ND	ND	

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	OAK6-0.30	OAK6-0.90	OAK6-1.50	OAK6-3.0	OAK6-4.5	
Dibromofluoromethane	105	112	106	105	103	oj 4
Toluene-d8	97	100	101	102	99	802.54
Bromofluorobenzene	103	96	102	102	108	AS A



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919 Soil

Matrix: Analyst:

JMR

Date Sampled:

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Date Received:

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Date Analyzed:

05/23-26/99

Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

	Sample ID:	OAK6-0.30	OAK6-0.90	OAK6-1.50	OAK6-3.0	OAK6-4.5	5
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
t-Butyl alcohol	0.050	ND	ND	ND	ND -	ND	
Diisopropyl ether	0.005	ND	ND	ND	ND	ND	
Ethyl-t-butyl ether	0.005	ND	ND	ND	- ND	ND	
t-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND	
			e este ene promote por necessiones comos		vonesta esta esta con esta esta esta esta esta esta esta esta	enn tem, talibar talifani	-ma-si-essamasiqeaevia (1991)



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix:

14919

Analyst:

Soil JMR Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

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Batch Number: 8260S1695, 8260S1696

8260\$1697, 8260\$1698

	Sample ID:	OAK2-4,5	
Compounds	DL	mg/Kg	
Acetone	0.25	ND	
Benzene	0.005	0.21	
Bromobenzene	0.025	ND	
Bromochloromethane	0.025	ND	
Bromodichloromethane	0.005	ND	
Bromoform	0.025	ND	
Bromomethane	0.025	ND	
2-Butanone (MEK)	0.05	ND	
n-Butylbenzene	0.01	ND	
sec-Butylbenzene	0.01	ND	
tert-Butylbenzene	0.01	ND	
Carbon disulfide	0.05	ND	
Carbon tetrachloride	0.005	ND ,	
Chlorobenzene	0.005	ND	
Chloroethane	0.025	ND	
Chloroform	0.01	ND	
Chloromethane	0.005	ND	
2-Chlorotoluene	0.01	ND	
4-Chlorotoluene	0.01	ND	
Dibromochloromethane	0.01	ND	
1,2-Dibromoethane	0,01	ND	·
1,2-Dibromo-3-chloropropa	er og er er er er fra er fillstatt fra stillstatte fra er	ND	
Dibromomethane	0.005	ND	
1,2-Dichlorobenzene	0.005	ND .	
1,3-Dichlorobenzene	0.01	ND	
1,4-Dichlorobenzene	0.01	ND	
Dichlorodifluoromethane	0.025	ND	
1,1-Dichloroethane	0.005	ND	
1,2-Dichloroethane	0.005	ND	Karang Charang Bandaran ang kalang langgan kanang kanang panggan kanang panggan kanang kanang kanang kanang ka
1,1-Dichloroethene	0.025	ND	
cis-1,2-Dichloroethene	0.01	ND	ing. Constituities (Constituine transfer and the constituent of the constituent of the constituent of the constituent
trans-1,2-Dichloroethene	0:01	ND	
1,2-Dichloropropane	0.005	ND	O Missiffredia meneralista malikala di manjulasa di adalah di kecaman di emenan di adalah menerali di sebagai
1,3-Dichloropropane	0.005	ND	
2,2-Dichloropropane	0.005	ND	- 1 Marie - Frankrich Steiner - The Medicine Control of the Contro
1,1-Dichloropropene	0.005	ND	也是1984年1986年1984年,中国大学的基础,1985年1985年,1985年1985年
cis-1,3-Dichloropropene	0.005	ND	Na samatan tahun turun tahun kalendari samat samat samat samat samat samat samat samat samat samat samat samat
trans-1,3-Dichloropropene	0.005	ND	



Client:

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8260S1695, 8260S1696 8260S1697, 8260S1698

S	ample ID:	OAK2-4.5
Compounds	DL	mg/Kg
Ethylbenzene	0.005	8.2
Hexachlorobutadiene	0.005	ND
2-Hexanone	0.05	ND
Isopropylbenzene	0.005	0.17
p-Isopropyltoluene	0.01	ND
Methylene chloride	0.25	ND
4-Methyl-2-pentanone	0.05	ND
Methyl-tert-butyl ether (MtBE	0.025	ND
Napthalene	0.01	5.2
n-Propylbenzene	0.005	4.1
Styrene	0.005	ND
1,1,1,2-Tetrachioroethane	0,005	ND
1,1,2,2-Tetrachloroethane	0.01	ND
Tetrachloroethene	0.005	ND
Toluene	0.005	4.8
1,2,3-Trichlorabenzene	0.01	ND
1,2,4-Trichlorobenzene	0.01	ND .
1,1,1-Trichloroethane	0.005	ND
1,1,2-Trichloroethane	0.015	ND
Trichloroethene	0.005	ND
1,2,3-Trichloropropane	0.015	ND
Trichlorofluoromethane	0.005	
Trichlorotrifluoroethane	0.25	ND
1,2,4-Trimethylbenzene	0.005	22
1,3,5-Trimethylbenzene	0.005	7.4
Vinyl chloride	0.01	ND
Xylenes (total)	0.015	29

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	OAK2-4.5
Dibromofluoromethane	100
roluene-uo	95
Bromofluorobenzene	93



Client:

PSI

Project:

Caltrans: 6th/Castro

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JMR

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Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

	Sample ID:	OAK2-4.5	
Compounds	DL	mg/Kg	
t-Butyl alcohol	0.250	ND	
Diisopropyl ether	0.025	ND	
Ethyl-t-butyl ether	0.025	ND	: ***\$0.000.000.000
t-Amyl-methyl ether	0.025	ND	
en i en en ammende de desta de la compressió de la compre	· warmer manacations absence TEST (. (c)		4444500000878888



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919

Matrix: Soil Analyst: JMR Date Sampled: 05/19/99
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Batch Number: 8260S1695, 8260S1696 8260S1697, 8260S1698

S	ample ID:	OAK1-4.5		
Compounds	DL	mg/Kg		<u> </u>
Acetone	63	· ND		
Benzene	1.3	ND		
Bromobenzene	6.3	ND		.7502(7606)
Bromochloromethane	6.3	ND		
Bromodichloromethane	1.3	ND		,7585655650
Bromoform	6.3	ND		238
Bromomethane	6.3	ND		vite;ii.
2-Butanone (MEK)	13	ND		
n-Butylbenzene	2.5	ND		With 10
sec-Butylbenzene	2,5	ND		
tert-Butylbenzene	2.5	ND		Asokii
Carbon disulfide	12.5	ND		Naskii Valta
Carbon tetrachloride	1.3	ND		24. FUR
Chlorobenzene	1.3	ND		Po II
Chloroethane	6.3	ND		RATE
Chloroform	2:5	ND		
Chloromethane	1.3	ND		vitroja:
2-Chlorotoluene	2,5	ND		rivativa Visitaria Visitaria
4-Chlorotoluene	2.5	ND		4.0003
Dibromochloromethane	2.5	ND		
1,2-Dibromoethane	2.5	ND		1.18.08
1,2-Dibromo-3-chloropropan	e 13	ND		and a
Dibromomethane	1.3	ND		2.52.53
1,2-Dichlorobenzene	1.3	ND		49.0
1,3-Dichlorobenzene	2.5	ND	-	5 K 56 C
1,4-Dichlorobenzene	2.5	ND		e de la compa
Dichlorodifluoromethane	6.3	ND		142.21
1,1-Dichloroethane	1.3	ND		
1,2-Dichloroethane	1.3	ND		,
1,1-Dichloroethene	6.3	ND		1313
cis-1,2-Dichloroethene	2.5	ND		7240
trans-1,2-Dichloroethene	2.5	ND		
1,2-Dichloropropane	1.3	ND		roya.i
1,3-Dichtoropropane	×1.3	ND		1819
2,2-Dichloropropane	1.3	ND		.733
1,1-Dichtoropropene	1.3	ND		4.3
cis-1,3-Dichloropropene	1.3	ND	 And the second of the control of the second o	1414
trans-1,3-Dichloropropene	1.3	ND		47



Client:

PSI

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Batch Number:

8260\$1695, 8260\$1696

8260S1697, 8260S1698

Sar	nple ID:	OAK1-4.5
Compounds	DL	mg/Kg
Ethylbenzene	1.3	17
Hexachlorobutadiene	1.3	ND
2-Hexanone	13	ND
Isopropylbenzene	1.3	2.0
p-Isopropyltoluene	2.5	/ ND
Methylene chloride	63	ND
4-Methyl-2-pentanone	13	ND
Methyl-tert-butyl ether (MtBE)	6	ND
Napthalene	2.5	16
n-Propylbenzene	1.3	12
Styrene	1.3	ND
1,1,1,2-Tetrachloroethane	1.3	ND
1,1,2,2-Tetrachloroethane	2.5	ND
Tetrachloroethene	1.25	ND
Toluene	1.3	3.7
1,2,3-Trichlorobenzene	2.5	ND
1,2,4-Trichlorobenzene	2.5	ND .
1,1,1-Trichloroethane	1.3	ND
1,1,2-Trichloroethane	3.8	ND
Trichloroethene	1.3	ND
1,2,3-Trichloropropane	3.8	ND
Trichlorofluoromethane	1.3	ND
Trichlorotrifluoroethane	63	ND
1,2,4-Trimethylbenzene	1.3	61
1,3,5-Trimethylbenzene	1.3	21
Vinyl chloride	2.5	ND
Xylenes (total)	3.8	*

Surrogates (% recovery) Limits: 80 - 130

	Sample ID: OAK1-4.5
Dibromofluoromethane	104
oluene-a8	100
Bromofluorobenzene	105



Client:

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Batch Number:

8260S1695, 8260S1696

8260\$1697, 8260\$1698

1.0	Sample ID:	OAK1-4.5
Compounds	DL	mg/Kg
t-Butyl alcohol	63	ND
Diisopropyl ether	6.3	ND
Ethyl-t-butyl ether	6.3	ND
t-Amyl-methyl ether	6.3	ND
ti in the section of		



Matrix: Soil Batch #: 8260S1695

Batch Accuracy Results

Sample ID: Laboratory Cor	ntrol Sampl	<u>e</u>		
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	99	59 - 172	Pass
Benzene	0.020	99	66 - 142	Pass
Trichloroethene	0.020	100	. 71 - 137	Pass
Toluene	0.020	97	59 - 139	Pass
Chlorobenzene	0.020	104	60 - 133	Pass

Analytical Notes:

Batch Precision Results

WIS/WISD Sample ID: OAK	2 -0.15				
Апаlyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0224	0.0230	3%	22%	Pass
Benzene	0.0200	0.0194	3%	21%	Pass
Trichloroethene	0.0197	0.0206	4%	24%	Pass
Toluene	0.0197	0.0194	2%	21%	Pass
Chlorobenzene	0.0202	0.0209	3%	21%	Pass

An	alytica	i Not	es:	 _	
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Matrix: Soil

Batch #: 8260S1696

Batch Accuracy Results

Sample ID: Laboratory Con	troi Samp	е		
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	110	59 - 172	Pass
Benzene	0.020	103	66 - 142	Pass
Trichloroethene	0.020	108	71 - 137	Pass
Toluene	0.020	111	59 - 139	Pass
Chlorobenzene	0.020	107	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 1493	7-1		٠,		
Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0228	0.0214	6%	22%	Pass
Benzene	0.0220	0.0193	13%	21%	Pass
Trichloroethene	0.0235	0.0205	14%	24%	Pass
Toluene	0.0208	0.0191	9%	21%	Pass
Chlorobenzene	0.0207	0.0176	16%	21%	Pass

Analytical Notes:			
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Matrix: Soil

Batch #: 8260S1697

Batch Accuracy Results

Sample ID: Laboratory Con	troi Sampi	е .	<u> </u>	
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	116	59 - 172	Pass
Benzene	0.020	110	66 - 142	Pass
Trichloroethene	0.020	108	71 - 137	Pass
Toluene	0.020	111	59 - 139	Pass
Chlorobenzene	0.020	111	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 149	10-1				
Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0208	0.0227	9%	22%	Pass
Benzene	0.0202	0.0204	1%	21%	Pass
Trichloroethene	0.0183	0.0195	6%	24%	Pass
Taluene	0.0192	0.0193	1%	21%	Pass
Chlorobenzene	0.0190	0.0202	6%	21%	Pass

Matrix: Soil

Batch #: 8260S1698

Batch Accuracy Results

Sample ID: Laboratory Con	troi Samp	ie		
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	105	59 - 172	Pass
Benzene	0.020	102	66 - 142	Pass
Trichloroethene	0.020	103	71 - 137	Pass
Toluene	0.020	103	59 - 139	Pass
Chlorobenzene	0.020	101	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: OAK	6-4.5			_	
Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0198	0.0213	7%	22%	Pass
Benzene	0.0197	0.0211	7%	21%	Pass
Trichloroethene	0.0203	0.0210	3%	24%	Pass
Toluene	0.0202	0.0204	1%	21%	Pass
Chlorobenzene	0.0197	0.0199	1%	21%	Pass

MS: Matrix Spike Sample	
MSD: Matrix Spike Duplicate	•

Analytical Notes:



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Water Analyst: JMR Date Sampled:

05/19/99

Date Received: Date Analyzed: 05/20/99

Batch Number:

05/26/99 8260W1699

	Sample ID:	Blank	WOAK-5	WOAK-6	
Compounds	DL	μg/L	μg/L	μg/L	
Acetone	50	ND	ND	ND	
Benzene	0.5	ND	ND	ND	000000
Bromobenzene	1.0	ND	ND	ND	
Bromochloromethane	1.0	ND	ND	ND	
Bromodichloromethane	0.5	ND	ND	ND	6-60000-11-00
Bromoform	0.5	ND	ND	ND	
Bromomethane	0.5	ND	. ND	ND	
2-Butanone (MEK)	10	ND	ND	ND	
n-Butylbenzene	0.5	ND	ND	ND	1.12.28.1.21
sec-Butylbenzene	0.5	ND	ND	ND	
tert-Butylbenzene	0.5	ND	ND	ND	
Carbon disulfide	10	ND	ND	ND	areas John Jarana
Carbon tetrachloride	0.5	ND	ND	ND	A 90 200 0
Chlorobenzene	0.5	ND	ND	NO	
Chioroethane	0.5	ND	ND	ND	ile i i i i velice.
Chloroform	0.5	ND	ND	ND	
Chloromethane	0.5	ND	ND	ND	.c.; ; c.; ; c.; ; p.; ;
2-Chlorotoluene	0.5	ND	ND	NO	
4-Chlorotoluene	0.5	ND	ND	ND	
Dibromochloromethane	0.5	ND	ND	ND	
1,2-Dibromoethane	0.5	ND	ND	ND	
1,2-Dibromo-3-chloropropa	ne 10	ND	ND	NO	
Dibromomethane	0.5	ND	ND	ND	100000000000000000000000000000000000000
1,2-Dichlorobenzene	0.5	NĐ	ND	ND	şiriki.
1,3-Dichlorobenzene	0.5	ND	ND	ND	Prince conserve
1,4-Dichlorobenzene	0.5	ND	ND	ND	
Dichlorodifluoromethane	0.5	ND	ND	ND	1 11 88 V -
1,1-Dichloroethane	0,5	ND	ND	ŇĎ	
1,2-Dichloroethane	0.5	ND	ND	ND	
1,1-Dichloroethene	0.5	ND	ND	ND	
cis-1,2-Dichloroethene	0.5	ND	ND	ND	A. A. A. (2) 43
trans-1,2-Dichloroethene	0.5	ND	ND	ND	
1,2-Dichloropropane	0.5	ND	ND	ND	5-80-01 (1997)
1,3-Dichloropropane	0.5	ND	ND	ND	
2,2-Dichloropropane	0.5	ND	ND	ND	ବ୍ୟବ୍ୟ ପ୍ରଥମଣ୍ଡି ।
1,1-Dichloropropene	0.5	ND	ND		4 4.1 H
cis-1,3-Dichloropropene	0.5	ND	ND	ND	MATERIAL TA
trans-1,3-Dichloropropene	0.5	ND	ND		31.55

Page 56 of 62



Client:

PSI

Project:

Caltrans: 6th/Castro 14919

Job No.: Matrix:

Water **JMR**

Analyst:

Date Sampled:

Date Received: Date Analyzed: 05/19/99 05/20/99 05/26/99

Batch Number:

8260W1699

· · · · · · · · · · · · · · · · · · ·	Sample ID:	Blank	WOAK-5	WOAK-6	
Compounds	DL	μg/L	μg/L	μg/L	
Ethylbenzene	0.5	ND	ND	ND	
Hexachlorobutadiene	0.5	ND	ND	ND	
2-Hexanone	10	ND	ND	ND	
Isopropyibenzene	0,5	ND	ND	ON	
p-isopropyltoluene	0.5	ND	ND	ND	
Methylene chloride	50	ND	ND	GN	
4-Methyl-2-pentanone	5.0	ND	ND	ND	2010 600 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000 1 000
Methyl-tert-butyl ether (MtB	E) 1.0	ND	ND	ND	
Napthalene	0.5	ND	ND	ND	
n-Propylbenzene	0.5	ND	ND	ND	
Styrene	0.5	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	nnenne Heimet Hestert sossin antschafter für Frieder (1880) i den Ausbewickeligter (1891)
Tetrachloroethene	0.5	ND	ND	NÐ	
Totuene	0.5	ND	0.6	ND	ookkaan kaasan hiisaan kanan kanasa ka suu siisiin liisa sa daduudu dhaadaa ka hiisaa ka ka sa ka sa dhaada ka Ta'aan ahaan ahaa sa sa sa sa sa sa sa sa sa sa sa sa s
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	
1,1,1-Trichloroethane	0.5	ND	ND	ND	
1,1,2-Trichloroethane	0.5	ND	ND	ND	turk generative en tement storr in en 1960 (1960 al 1971) het vegen tep grante.
Trichloroethene	0.5	ND	ND	ND	
1,2,3-Trichloropropane	0.5	ND	ND	ND	menter liter et la commissa de commune de la commune de la commune de la granda de la granda de la granda de l La commune de la commune de la commune de la commune de la commune de la commune de la commune de la commune d
Trichlorofluoromethane	0.5	ND	ND	ND	
Trichlorotrifluoroethane	5.0	ND	ND	ND	adalah darabasa berahark kerkelek int merapa darah perlapa terbanya apada yan Gertuan Jere. Terbanyak
1,2,4-Trimethylbenzene	0.5	ND	0.6	ND	
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	an derreet en en statistik valdet. Die Ferrynsk het valeren het et fil tij 1975 blie D
Vinyl chloride	0.5	ND	ND	ND	
Xylenes (total)	1.5	ND	ND	ND	onnerske de se en en en 1900 jaren 1932 bl. 1914 bl. 1915 bl. 1916 bl. 1916 bl. 1916 bl. 1916 bl. 1916 bl. 191 Transporter

Surrogates (% recovery) Limits: 80 - 130

	Sample ID:	Blank	WOAK-5	WOAK-6		
Dibromofluoromethane		103	94	101		
Toluene-d8		101	97	100	The second of th	
Bromofluorobenzene		107	99	102		



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14919

Matrix: Analyst: Water JMR Date Sampled:

05/19/99

Date Received:

05/19/99

Date Analyzed:

05/20/99 05/26/99

Batch Number:

8260W1699

	Sample ID:	Blank	WOAK-5	WOAK-6	
Compounds	DL	μg/L	μg/L	μg/L	
t-Butyl alcohol	50	ND	ND	ND	
Diisopropyl ether	5.0	ND	ND	NO	
Ethyl-t-butyl ether	5.0	ND	ND	ND	
t-Amyl-methyl ether	5.0	ND	ND		
	**************************************	ייי	N.	NU	•



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919 Matrix: Water Analyst: JMR Date Sampled:

05/19/99

Date Received: Date Analyzed: 05/20/99

Batch Number:

05/26/99 8260W1699

- 1	Sample ID:	WOAK-2	WOAK-1	·	<u> </u>
Compounds	DL	μg/L	μ g/L		· · ·
Acetone	5000	ND	ND		
Benzene	50	3,900	3,700		CA SEVERITE CONTRACTOR
Bromobenzene	100	ND	ND		042 043 041 041 041 041 041 041 042 052 052 052 052 052 052 052 052 052 05
Bromochloromethane	100	ND	ND		98.80c (chapter)
Bromodichloromethane	50	ND	ND	The common access to the common access and access of the Common access to the Common access t	**************************************
Bromoform	50	ND	ND		
Bromomethane	50	ND	ND		
2-Butanone (MEK)	1000	ND	ND		
n-Butylbenzene	50	ND	ND	www.wego-e	Androna Antonio (1999) (1999)
sec-Butylbenzene	50	ND	ND		
tert-Butylbenzene	50	ND	ND	reaction and the contraction of	central programme would like blocker differ to
Carbon disulfide	1000	ND	ND		
Carbon tetrachloride	50	ND	ND	outer a processor money of the total organization (1995)	pana pulaukulus ana in normanalus isa 200
Chlorobenzene	50	ND	ND		
Chloroethane	50	ND	ND		the terror in the decision of the considerate
Chlaroform	50	ND	ND		
Chloromethane	50	ND	ND	Control Carlo Colo Colo Colo Colo Carlo Carlo Colo Carlo Carlo Carlo Carlo Carlo Carlo Carlo Carlo Carlo Carlo	content west bus not be up 1881 A. J. et
2-Chlorotoluene	50	ND	ND		
4-Chlorotoluene	50	ND	ND	Service (44 p. 17 Service) (54 p. 17 p. 17 p. 17 p. 17 de	uddilidakin (1999-jer, 1901)
Dibromochloromethane	50	ND	ND		
1,2-Dibromoethane	50	ND	ND	Assembly and a second s	DOMESTICAL PROPERTY OF A STATE OF
1,2-Dibromo-3-chloropropa	ne 1000	ND	ND		
Dibromomethane	50	ND	ND	www.ko.ne.comment.idusinsii gaalaanii ilinii ja i	CARBARCA A HARANTAS BERGIOSEN
1,2-Dichlorobenzene	50	ND	ND		
1,3-Dichlorobenzene	50	ND	ND	 A service of a section of the Control	CORRECTED OF SOME PARTY OF MICHOL
1,4-Dichlorobenzene	50	ND	ND		
Dichlorodifluoromethane	50	ND	ND	and the entire the second of t	tis tiwawa na sasai San sa sa partiji
1,1-Dichloroethane	50	ND	ND		
1,2-Dichloroethane	50	ND	ND	aller, dependencia de la tratta de la Pripa de	de dourse interes PR, Libeta e en e Phyt
1,1-Dichloroethene	50	ND	ND		
cis-1,2-Dichloroethene	50	ND	ND	revisionali ob reviserative ti ristili. Sugiti	\$1.00.00.00.00.00.00.00.00.00.00.00.00.00
trans-1,2-Dichloroethene	50	ND	ND		
1,2-Dichloropropane	50	ND	ND	Here work betakte te takar 1979 (1979 (1970), 1999)	paks, paks Pissa karabarat tudha dashiri (1916)
1,3-Dichloropropane	50	ND	ND		
2,2-Dichloropropane	50	ND	ND	es cuesarte de distributar la cualitata de di 2000.	
1,1-Dichloropropene	50	ND	ND		
cis-1,3-Dichloropropene	50	ND	ND	war and Marin Thousand Institution of the	in ta tenere in Stitute (Self) Time
trans-1,3-Dichloropropene	50	ND	ND	er daggeret i gerent	Nagy praeduced



Client:

PSI 1

Project:

Caltrans: 6th/Castro

Job No.: Matrix:

Water

JMR

Analyst:

14919

Date Sampled:

05/19/99

Date Received: Date Analyzed: 05/20/99 05/26/99

Batch Number:

8260W1699

	Sample ID:	WOAK-2	WOAK-1	
Compounds	DL	μg/L	μg/∟	
Ethylbenzene	50	3,700	3,200	
Hexachlorobutadiene	50	ND	ND	
2-Hexanone	1000	ND	ND	
Isopropylbenzene	50	94	110	
p-Isopropyltoluene	50	ND	ND	
Methylene chloride	5000	ND	ND	
4-Methyl-2-pentanone	500	ND	ND	
Methyl-tert-butyl ether (MtBl	E) 100	ND	ND	
Napthalene	50	950	920	
n-Propylbenzene	50	410	450	
Styrene	50	ND	ND	
1,1,1,2-Tetrachloroethane	50	ND	ND	
1,1,2,2-Tetrachioroethane	100	ND	ND	
Tetrachloroethene	50	ND	ND	
Toluene	50	14,000	1,100	militari (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (1990) (19
1,2,3-Trichlorobenzene	50	ND	ND	
1,2,4-Trichlorobenzene	50	ND	ND	FERREITE BERGER AND AND AND AND AND AND AND AND AND AND
1,1,1-Trichloroethane	50	ND	ND	
1,1,2-Trichloroethane	50	ND	ND	etinet di 1180 Nicolini vina i normana o del monte del documento per el ples de la figlia de la general de la O del como del monte del monte del monte del monte del monte del monte del monte del monte del monte del monte
Trichloroethene	50	ND	ND	
1,2,3-Trichloropropane	50	ND	ND	
Trichlorofluoromethane	50	ND	ND	
Trichlorotrifluoroethane	500	ND	ND	rasarangganyan kuluk-kekebadi dan kilingkan dibig Primbadban dibiggasay ili 1990-1990. Sasabada (199
1,2,4-Trimethylbenzene	50	2,600	2,200	
1,3,5-Trimethylbenzene	50	710	800	rate ambum bada da españo sou de sous de la mise españo de entre de españo de entre españo de entre españo de e Transportante de la companya de la companya de la companya de la companya de la companya de la companya de la c
Vinyl chloride	50	ND	ND	
Xylenes (total)	150	12,000	5,100	995 996 1966 1966 1966 1966 1966 1966 19

Surrogates (% recovery) Limits: 80 - 130

San	nple ID: WOAK-2 WOAK-1	
Dibromofluoromethane	99 104	
l oluene-d8	100 103	FE SEAT FOR U.S. BESTELLE WESTERN STORM STORM SECTION
Bromofluorobenzene	104 104	



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix:

14919

Water

Analyst:

JMR

Date Sampled:

05/19/99

Date Received:

05/20/99

Date Analyzed:

05/26/99

Batch Number:

8260W1699

	Sample ID:	WOAK-2	WOAK-1			
Compounds	DL	μg/L	μg/L	į.		
t-Butyl alcohol	5000	ND	ND	Maria de la compansión de la compansión de la compansión de la compansión de la compansión de la compansión de		*
Diisopropyl ether	500	ND	ND			
Ethyl-t-butyl ether	500	ND	ND			
t-Amyl-methyl ether	500	ND	NO			
		ennennen en en mennennen	nor na communació, desenventes se especiales	rionagenes in controlled to door to be to a 1 to 100 in 1 to	-	211112111002012014000110000

Matrix: Water Batch #: 8260W1699

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration μg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20.0	105	59 - 172	Pass
Benzene	20.0	102	66 - 142	Pass
Trichloroethene	20.0	103	71 - 137	Pass
Toluene	20.0	103	59 - 139	Pass
Chlorobenzene	20.0	101	60 - 133	Pass

Analytical	Notes):	
	•		
		4	

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	21.0	23.1	10%	22%	Pass
Benzene	20.5	22.0	7%	21%	Pass
Trichloroethene	20.6	21.6	5%	24%	Pass
Toluene	20.7	22.4	8%	21%	Pass
Chlorobenzene	20.1	22.2	10%	21%	Pass

MS:	Ma	trix 5	pike	Sa	mple	•
MSE): M	atrix	Spik	æ C	ilau(cate

Analytical Notes:	
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290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

											Anal	yses	Rec	ueste	ad					
:.Project No	75-96034		Project N	ame: Ecamos	6th/Castm		d	CB		ă.	4	. :		0	8	2	ر زار	(Pag		Turn-around time
Project Man Fra	ader:		Phone: 5/0	785-	6+h/Castro 11/1 (570) 785-1	192	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3s Pest/PCB		TO Case	Powery	929	PP RCR	(9060	octivity C	Hex Chrome	0-0	. 1	Conte	☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH*
Client Name Company)	PSI		Address:				4	des PCBs	sel Peret	oline and	REH) Sai/	6: 8270 625	C(CAM)	TOC.	S Cond	-luoride	6991	~	lg	Normal TAT Requires prior approval additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)		Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides	B015M: Diesel No	8015M: Gasoline -8930 Cac/BTEX		Semivolatiles:	Metals: TTLC(CAM) PP. RCRA	,	pH TDS TSS Conductivity	1	t.PA .	6010	Moist	Remarks/ Special Instructions
	OAK 2 -0.15	5/19/99	9:30	S			X		X	X							X	X		
2	-0.30		9:35											·						
3	-0.90		9:40	Ť,	•					\perp							Ц	\perp		
4	- 1,50		945								4	Δ								
5	- 3.0		9:50			- 745.4				╧	1/2	M	,	X				7		NS
6	- 4.5		10:00	V								·					Ш			
7	WOAK-2		10:30	W																
8	OAK1-0.15		1040	5											1					
9	-0.30		1045		•															
10	~0.90	V	1050	. •			\bigvee		$\sqrt{ }$	\sqrt{N}						^	V			
elinquished by	y: (Şampler's Signature)		37/19/99	Time /700	Relinquished by:	•	Date		Time	:	Тор	e com	pletec	i by lab	orator	ry pen	sonne	d:		Sample Disposal
eceived by:			Date	Time	Received by:		Date	Ì	Time		1			Yes				•		☐ Client will pick up
_	f samples and the signatu			tody form	Relinquished by:		Date		Time	•	1	-		iners in			es 🗆	No		☐ Return to client
constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof. Date Time Courier UPS/Fed Ex Hand carried Lab december Courier UPS/Fed Ex Hand carried Lab december Lab decembe												☐ `Lab disposal fee \$5								
aboratory N	lotes: Includ	و د	EDB,	nades EDC	in 8200	= 1	<u> </u>	1												Sample Locator No.

290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Centrum Job # | 4919

Page 2 of 5

Analyses Requested																				
	75-96034		` 	ame: (trans	s: 6th/Castro	.0	24.2	PestrPCB		Gas/BTEX	Porosity)RA	9060)	COD	rome	16)	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	+	Turn-around time
Project Man	ager:		Phone:		Fax:		8010 524.2	Se Per	Fuel Screen	8	4	625	PP R	Cg.	Conductivity	Hex C	0)	7	Control	☐ 48 Hr. RUSH*
Client Name (Company)	PSI		Address:	•			8240	des PCBs		oline 8020	. S.:	: 8270 625	C(CAM)	700	S Cond	Norioe	(2+0),599)			Normal TAT Requires prior approvel, additional charges apply
Centrum ID (Lab use only)	Sample ID (As It should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080; Pesticides	8015M: Diesel	8015M: Gasoline	ZHENET!	Semivolatites:	Metals: TTLC(CAM) PP RCRA	A Company	PH TDS TSS	Flashpoint Fluoride Hex Chrome	E}A	0109	Moista	Remarks/ Special Instructions
	OAK1-1,50	5/19/99	1055	S			X		X	X							X	X		
12	-30	1	1100			r	İ			Ĺ	*	Ž	,	星			Ĺ	1	玄	NO
13	-4.5		1105	\bigvee																
14	WOAK-1	1	1115	W					Ц											
15	OAK3-0.15	\perp	1200	S													1	\perp		·
16	- 0.30		1205			2												\perp		
17	-0.90		1210				Ц													
18	- 1,50		1220			·											\bot	\perp		
19	- 3.0	1	1225				Ц		Ц							,	Ţ			
20	- 4.5	4	1230	V	·		1		1	\bigvee							<u>V</u>	1		
Relinquished b	y: (Sampler's Signature)		5/14/9	Time	Relinquished by:		Date		Time		Tot	e con	plete	d by la	borat	ory pa	rsorv	nel:		Sample Disposal
Received by:			Date	Time	Received by:	÷	Date		Time					Y X 1						. Client will pick up
-	of samples and the signatu			-	Relinquished by:	1 A	Date		Time		Alls	ample	cont	ainers	intact	ים מ	íos [⊒ No		☐ Return to client
	uthorization to perform the id Conditions set forth on the	•		ove under	Received for Laboratory by:	T. Area C			Time) **	Courier UPS/Fed Ex Hand carri									□ Lab disposal fee \$5
Laboratory N	Notes:		-																	Sample Locator No.

Centrum Job #

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Page 3 of 5

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Project No.: 5 7	25 - 9G039	4	Project N	lame: Frans =	6th/Costro	, Es		Pest/PCB		BTEX	2007		\$	906	COD	ome	1	-		Turn-around time
Project Man	ager:		Phone:		Fax:				Fuel Screen	8020 Gas/BTEX			P RC	26	tivity	ទី	5	3	Content	☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH*
Client Name (Company)	PSI		Address:			· • • • • • • • • • • • • • • • • • • •	Ī	des PCB			8	: 8270 625	(CAM) P	70C	TSS Conductivity	Noride H) hag	4 ∠≥	t 60,	Normal TAT Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080; Pesticides PCBs	8015M: Diesel	8015M: Gasoline	446 CHIEFTE	Serrivolatiles:	Metals: TTLC(CAM) PP RCRA		PH TOS TS	Fashpoint Fluoride Hex Chrome	FPA	6010	Moisture	Remarks/ Special Instructions
21	WOAK-3	5/19/99	1258	W	,		X		X	X					·		X	X		SAMPLE
22	OAK4 -0.15	<u>.</u>	1255	5		·														5%
23	- 0.30		1300																	
24	- 0.90		1305							\perp										
25	- 1.5		1310			ļ											\perp	\perp		
26	- 3.0		1315														\perp			
27	-45		1320	V																
28	OAK5-0.15		1400	1635			\perp		Ш				·							
25	- 0.30		1405	ς													\perp	\perp		
30	- 0,90	·	1410	5			V			J		Ì					\bigvee	ψ		
Relinquished b	x; (Sampler's Signature)		Date/19/99	Time 1700	Relinquished by:		Date		Time	٠	ТоЬ	e con	pletec	l by la	borate	ory pe	rsonr	nel:		Sample Disposal
Received by:			Date	Time	Received by:		Date		Time		l.		:hilled1 eals?	וי 7						☐ Client will pick up
	of samples and the signatu				Relinquished by:	``	Date	,	Time		1	•	conta				Yes [] No		☐ Return to client
constitutes au the Terms and	thorization to perform the a	analyses sp ne back her	ecified aboreof.	ove under	Received for Laboratory by:	79	240 124	4	Time 7'				الات				and c	arried	l	Lab disposal fee \$5
Laboratory N	lotes:					(, –	-				-				Sample Locator No.

Centrum Job #

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Page 4 of 3

					,						Ana	lyses	Rec	uest	ed					
Project No.:	75-9603	54	Project N	ame:	: 6th/Cestro	,	570	a S S S		Ĭ			\$	1	GOD	ome	\$	Land	•	Turn-around time
Project Mar	nager:		Phone:		Fax:			Pest	1	1		g,	, RCRA			Ş	0	· 🛰	1	☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH*
Client Name (Company)	PSI		Address:					des PCBs	10.	Aline Begge		: 8270 625	(CAM) PE		S Conductivity	luoride He	16641	Ctok		Normal TAT Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides PCBs Pest/PCB	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles: 8270	Metals: TTLC(CAM) PP	Lead Only	PH TDS TSS	Flashpoint Fluoride Hex Chrome	EPA 1	0109		Remarks/ Special Instructions
31	OAK5-1.50	5/14/49	1415	S			X		X	X							X	X		
32	- 3.0		1420	1					1	1								1		
33	- 4.5		1475	\bot	<u>.</u>														-	
34	WOAK-5	:	1455	\mathcal{W}					Ш											
35	OAK6-0.15	<u> </u>	1500	S					Ш											<u>.</u>
36	-0,30		1505				\perp		Ц											्रे र
37	-0.96		1510			. '						2.3								
38	- 1.5		1515															\perp		
39	- 3.0	*	1520	1,						1,								1		-
40	- 4.5		1525	V	·		1		V								$ \psi $			
Relinquished b	y: (Sampler's Signature)	_ .	5/14/99	Time 1700	Relinquished by:		Date		Time	,	Tok	e con	pietec	i by la	borat	ory po	ersom	el:		Sample Disposal
Received by:			Date	Time	Received by:	18.47	Date		Time				:hilled eals?	/ `						☐ Client will pick up
	of samples and the signatu				Relinquished by:	\$ E	Date		Time		Alis	ample	conta	iners	Intact	? 🗆 '	Yes [⊒ No		☐ Return to client
	thorization to perform the did Conditions set forth on t			ve under	Received for Laboratory by:	1	Dayo 722	1	Time	V			_ 1/1.					алied		☐ Lab disposal fee \$5
Laboratory N	Notes:				- /										54					Sample Locator No.
																4. •4.				,

Centrum Job #

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Page 5 or 5

					_	•					Ana	lyses	Req	uest	ed					
	75 -960	34	Project N	ame: (+ rang	: 6th cost	70	A A	Pest/PCB	_	Ď			RCRA		COD	Hex Chrome	2			Turn-around time
Project Mar	nager:		Phone:		Pax.			a a				ĸ	PP R		∯.	℧. Xi	1	1		☐ 48 Hr. RUSH*
Client Nam (Company)	e:		Address:				8260 -8245-8010-554 2	des PCBs		oline ada		: 8270 625	(CAM) P		S Conductivity	Fluoride H	9	b		Normal TAT * Requires prior approvel, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides	8015M: D	8015M: Gasoline	418.1 (TRPH)	Semivolatiles:	Metals: TTLC(CAM)	Lead Only	PH TDS TSS	Flashpoint F	10/2	3		Remarks/ Special Instructions
41	INOAK-6	5/19/99	1600	W			X		X	X					·			X		
					7	<u>h</u> _						2					'n	_		
			<u> </u>						/											
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														\Box						
Relinquished	(Sampler's Signature)		7/19/gg	Time / 700	Relinquished by:		Date		Time	•	Tot	e con	npleted	d by is	borat	ory pa	ersonr	nel:		Sample Disposal
Received by:			Date	Time	Received by:	,	Date		Time			•	chilled seals?	71						☐ Client will pick up
Relinquished by: The delivery of samples and the signature on this chain of custody form					All sample containers intact? ☐ Yes ☐ No					Cl Return to client										
constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			Received for Laboratory by:		72	Time Top		Courier UPS/Fed Ex Hand carried					☐ Lab disposal fee \$5							
Laboratory	Notes:							-	. —		-				-					Sample Locator No.



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY . CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI

1320 W. Winton Ave.

Hayward, CA 94545

Date Sampled:

05/20/99

Date Received: Job Number:

05/21/99 14928

Project: Caltrans: 6th/Castro

CASE NARRATIVE

The following information applies to samples which were received on 05/21/99:

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D. Laboratory Director

ELAP # 1184

DL: Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.



Lead By ICP

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Soil Analyst: RVJ/RLB Date Sampled: 05/20/99

Date Received: 05/21/99

Date Digested: 05/25/99

Date Analyzed: 05/26/99

6010S1219

Method Number: 6010

Batch Number:

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	NĐ
OAK7-0.15	5.0	98
OAK7-0.30	5.0	79
OAK7-0.90	5.0	11
OAK7-1.50	5.0	8.8
OAK7-3.0	5.0	16
OAK7-4.5	5.0	14
OAK9-0.15	5.0	83
OAK9-0.30	5.0	150
OAK9-0.90	5.0	10
OAK9-1.50	5.0	11
OAK9-3.0	5,0	15
OAK9-4.5	5,0	14
OAK10-0.15	5.0	90
OAK10-0.30	5,0	56
OAK10-0.90	uarus talantiiki akkei 49,4 1991. Ruotinasti assi mitu estatu atai talatan talantii yurtinyuutsi kuuritaa. 5.0	eusen hittere trese etimule, lefer, em hande viktarit hut i vikta i v 9.1
8-1 11 11/11/90 prisina - Educity 60 9000 (1906) (1908)	888646800000000000000000000000000000000	



Lead By ICP

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix: 14928 Soil

Analyst:

RVJ/RLB

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Digested:

05/26/99

Date Analyzed:

05/26/99

Batch Number:

6010S1220

Method Number: 6010

. 00103

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	ND
OAK10-1.50	5.0	16
OAK10-3.0	5.0	9.0
OAK10-4.5	5.0	12
OAK11-0.15	5.0	240
OAK11-0.30	5.0	10
OAK11-0.90	5.0	11
OAK11-1.50	5.0	18
OAK11-3.0	5.0	16
OAK11-4.5	5.0	12
OAK8-0.15	5.0	36
OAK8-0.30	5.0	77
OAK8-0.90	5.0	300
OAK8-1.50	5.0	9.4
OAK8-3.0	5.0	15
OAK8-4.5	5.0	14
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QC Sample Report - Metals

Matrix: Soil Batch #: 6010S1219

Batch Accuracy Results

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	oass/Fail
Lead	50	107	75 - 125	Pass

Analytical Notes:						
	٠			-		
			٠.			
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			-			

Batch Precision Results

MS/MSD Sample ID: OAK1	0-0.90				
Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	58.7	60.8	4%	20%	Pass

Analytical Notes:	
	•



QC Sample Report - Metals

Matrix: Soil

Batch #: 6010S1220

Batch Accuracy Results

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	iass/Fail
Lead	50	98.82	75 - 125	Pass

Analytical Notes:					
		- '			
,					
<u> </u>					

Batch Precision Results

MS/MSD Sample ID: 14939	\$	plicate mg/Kg	Percent e (RPD)	Control Limit	
Compound	Spike Sample Recovery mg/	Spike Duplicate Recovery mg/K,	Relative P Difference	Upper Co RPD	Pass/Fail
Lead	54.8	51.8	6%	20%	Pass .

MS: Matrix Spike Sample	
MSD: Matrix Spike Duplica	t

Analytical Notes:	
	•



Lead By ICP

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Water Analyst: RVJ/RLB
 Date Sampled:
 05/20/99

 Date Received:
 05/21/99

 Date Digested:
 05/25/99

Date Analyzed: 05/26/99 Batch Number: 6010W1218

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	0:10	ND "
WOAK-7	0.10	ND
WOAK-9	0.10	0.26
WOAK-10	0.10	ND .
WOAK-11	0.10	0,12
WOAK-8	0.10	0.12
WOAK-3	0.10	ND:
		ergener between de hoogstelde voord in 1910 de engeleer en 1910.
e, e ki sire jen mazalasia asalah matemite seki.	n organization and a more appropriate contract of the contract	
e 8759 C. CommoNeSterranscommission		



QC Sample Report - Metals

Matrix: Water Batch #: 6010W1218

Batch Accuracy Results

Sample ID: Laboratory Co.	Concentration	very LCS	cceptance Limits 6 Recovery	ass/Fail
Compound	Spike mg/L	% Reco	Accel	Pass
Lead	1.0	106.3	75 - 125	Pass

Α	Analytical Notes:					
	-					
l						
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Batch Precision Results

MS/MSD Sample ID: Wookery mg/L
Spike Sample
Recovery mg/L
Relative Percent
Difference (RPD)
Upper Control Limit
RPD
Pass/Fail

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	
1	
1	



EPA 413.2 - Oil & Grease

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Soil Analyst: CP/JL Date Sampled: 05/20/99 Date Received: 05/21/99 Date Extracted: 05/27/99

Date Analyzed: 05/27/99 Batch Number: 4181S1036

	Detection Limit	Total Oil & Grease
Sample ID	mg/kg	mg/kg
Method Blank	10	ND
OAK7-0.15	10	130
OAK7-0.30	1,000	3,000
OAK7-0.90	10	240
OAK7-1.50	10	20
OAK7-3.0	10	20
OAK7-4.5	10	ND
OAK9-0.15	10	82
OAK9-0.30	10	580
OAK9-0.90	10	140
OAK9-1.50	10	46
OAK9-3.0	. 10	11
OAK9-4.5	10	10
OAK10-0.15	10	380
OAK10-0.30	10	150
OAK10-0.90	10	46
OAK10-1.50	10	11
OAK10-3.0	10	ND
OAK10-4.5	10	13
OAK11-0,15	10	27
OAK11-0.30	10	18



EPA 413.2 - Oil & Grease

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Soil Analyst: CP/JL Date Sampled: 05/20/99

Date Received: 05/21/99 Date Extracted: 05/27/99 Date Analyzed: 05/28/99 Batch Number: 4181S1037

	Detection Limit	Total Oil & Grease
Sample ID	mg/kg	mg/kg
Method Blank	10	ND
OAK11-0.90	10	27
OAK11-1.50	10	14
OAK11-3.0	10	. ND
OAK11-4.5	10	ND ND
OAK8-0.15	10	260
OAK8-0,30	10	340
OAK8-0.90	10	2,600
OAK8-1.50	10	ND
OAK8-3.0	10	13
OAK8-4,5	10	10

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil

Batch #: 4132S1036

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	Recovery LCS	cceptance Limits 6 Recovery	Pass/Fail
Reference Oil	40	123	72 - 131	Pass

Analytical Notes:

Batch Precision Results

Analyte	Sample Recovery 66 mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil		58.72		22%	Pass

MS: Matrix Spike Sample	
MSD: Matrix Spike Duplicat	e

Analytical Notes:	

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil Batch #: 4132S1037

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	40	125	72 - 131	Pass

Analytical Notes:	
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Batch Precision Results

MS/MSD Sample ID: OAK	11-3.0		-	<u>.</u>	
Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil	59,94	59.08	1%	22%	Pass

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:	
	-
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EPA 413.2 - Oil & Grease

 Client:
 PSI
 Date Sampled:
 05/20/99

 Project:
 Caltrans: 6th/Castro
 Date Received:
 05/21/99

 Job No.:
 14928
 Date Extracted:
 05/26/99

 Matrix:
 Water
 Date Analyzed:
 05/28/99

 Analyst:
 CP/JL
 Batch Number:
 4132W1034

	Detection Limit	Total Oil & Grease
Sample ID	mg/L	mg/L
Method Blank	2.0	DN
WOAK-7	2.7	ND
P-NAOW	27	ND
WOAK-10	2.9	3.0
WOAK-11	3.6	3.7
WOAK-8	3.0	ND
WOAK-3	2.6	4:1
COSE : Prost VIII 1882 programma papara a transcensor		· · · · · · · · · · · · · · · · · · ·
		i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co
en i Serbrigger al <mark>Garactico W</mark> assin	A 1997 (1904), A Marya esta 1994 (1907), de permuto technologo esta esta esta esta esta esta esta esta	ing and the state of the state



QC Report - EPA 413.2 Oil & Grease

Matrix: Water Batch #: 4132W1034

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	10	104	전 왕 70 - 130	Pass

Analyti	cal Note	es:	
	•		
			é
i			

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Recovery mg/Kg
Spike Duplicate
Recovery mg/Kg
Relative Percent
Difference (RPD)
Analyte
Reference Oil
Reference Oil
10.43 10.63 2% 25% Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate Analytical Notes:

Insufficient amount of sample available for MS/MSD analysis. An LCS/LCSD pair were analyzed to provide precision data for this batch.



Modified 8015 - Fuel Screen

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix;

14928 Soil

Analyst:

NBP

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Extracted: Date Analyzed:

05/26/99 05/26-27/99

Batch Number:

8015DS1640

Fuel Identified:	Motor Oil	Extractable Hydrocarbons	Detection Limits
Units:	mg/kg	mg/kg	mg/kg
Blank	ND ND	ND	10
OAK7-0.15	ND	13*	10
OAK7-0.30	ND	ND	10
OAK7-0.90	ND	12*	10
OAK7-1.50	ND	11*	10
OAK7-3.0	ND	11*	10
OAK7-4.5	ND	ND	10
OAK9-0.15	ND	24*	10
OAK9-0:30	69*	ND	10
OAK9-0.90	, ND	ND	10
OAK9-1.50	ND	ND	10
OAK9-3.0	ND	ND	10
OAK9-4.5	ND	20*	10
OAK10-0.15	58*	ND	10
OAK10-0.30	ND	ND	10
OAK10-0.90	ND	ND	10
OAK10-1.50	ND	ND	10
		entermore en in mont mod tribut i de escumbany en la mas	man de la companya de la companya de la companya de la companya de la companya de la companya de la companya d
	oren arrana Longestock (1985 <u>). Heresten (j. 1</u> . a <u>rratis (1967).</u>		
			554955 14655

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as indicated.



Modified 8015 - Fuel Screen

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix: 14928

Analyst:

Soil NBP Date Sampled:

05/20/99

Date Received:

05/21/99

Date Extracted:

05/26/99

Date Analyzed:

05/26-27/99

Batch Number:

8015DS1641

Fuel Identified:	Motor Oil	Extractable Hydrocarbons	Detection Limits
Units:	mg/kg	mg/kg	mg/kg
Blank	ND	ND	10
OAK10-3.0	ND	ND	10
OAK10-4:5	ND	ND	10
OAK11-0.15	ND	ND	10
OAK11-0.30	ND	ND	10
OAK11-0.90	ND	ND	10 -
OAK11-1.50	NO NO	ND	10
OAK11-3.0	ND	ND	10
OAK11-4.5	ND	ND	10
OAK8-0.15	ND	20*	10
OAK8-0,30	30*	ND	10
OAK8-0.90	ND	120*	100
OAK8-1.50	ND	ND	10
OAK8-3.0	ND	ND	10
OAK8-4.5	ND	ND	10
: 110 November to consequence of particles		naria na manada an iliberar dukubak beliere yanga an igi ili	 Consideration of the property of
		distribution service (Section Application)	HAMETER PLANE
		#GB#018#618EBB\$010801.2EE.ETT[]EE	

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as indicated.

QC Sample Report - EPA 8015M Diesel

Matrix: Soil Batch #: 8015DS1640

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	100	111	70 - 130	Pass

		•	
:			

Batch Precision Results

MS/MSD Sample ID: OAK1	kg.	ite 1Kg	ercent (RPD)	Limit	
Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD	Upper Control Limit RPD	Pass/Fail
Diesef	103	104	1%	29%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Ana	lytic	al No	tes:		
l					
1					

QC Sample Report - EPA 8015M Diesel

Matrix: Soil Batch #: 8015DS1641

Batch Accuracy Results

	Spike Concentration mg/Kg	Recovery LCS	Acceptance Limits % Recovery	ss/Fail
Analyte Diesel	<u>ගී දී</u> 100	104	₹ % 70 - 130	/ssed

Analytical Notes:	
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Recovery mg/Kg
Spike Duplicate
Recovery mg/Kg
Spike Duplicate
Recovery mg/Kg
Analyte
Pass/Faii
Diesel

104
103
196
Pass

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

al Not	es:		
			•
	zal Not	cal Notes	zal Notes:



Modified 8015 - Fuel Screen

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix: 14928 Water

Matrix: Analyst:

NBP

Date Sampled:

. 0

05/20/99

Date Received:

05/21/99

Date Extracted:

05/25/99

Date Analyzed:

05/26/99

Batch Number:

8015DW1639

Fuel Identified:	Gasol		xtractable trocarbons	Detection Limits
Units:	mg/	L_	mg/L	mg/L
Blank	ND		NĐ	0.40
WOAK-7	ND.	. Al Armir o colocio con con con	ND	0.53
WOAK-9 WOAK-10	ND	MAI . 11. 3 ROBER 4 BERTH	ND	0.53
WOAK-10	ND	Strangen er	ND	0.59
WOAK-8	ND		.ND	0.71
WOAK-3	ND	NAMES OF STREET AND AND AND AND AND AND AND AND AND AND	ND	0.71
	0.64		ND	0.43 ·
	one en en en en en en en en en en en en e	Bare Intible well	Print ting thing :	mirodi ili emiliti T
(a. 1) (b. 1980) (b. 1980)		- American and Section 119	an deutschen an Martine (1921) -	Aleka baran da 1991 (1991)
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	e O producero de como estado de como estado de como estado de como estado de como estado de como estado de como e	e Bidden ne week vez en	of Noorman survey	

^{*}The concentration of petroleum hydrocarbons has been quantitated against diesel and reported as Gasoline.

QC Sample Report - EPA 8015M Diesel

Matrix: Water

Batch #: 8015DW1639

Batch Accuracy Results

Analyte	Spike Concentration mg/L	% Recovery LCS	cceptance Limits s Recovery	ass/Fail
Diesel	0.8	98	건 공 70 - 130	Pass

Analytical Notes:	
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	N. 1
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Diesel	0.79	0.72	9%	25%	Pass

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Analytical Notes:

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



05/20/99

Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI Date Sampled: Project: Caltrans: 6th/Castro Date Received:

Project: Caltrans: 6th/Castro Date Received: 05/21/99

Job No.: 14928 Date Analyzed: 05/26/99

Matrix: Soil Batch Number: 8015GS2232

Analyst: GR

·	Detection	Petroleum Hydrocarbons as
Sample ID	Limit	Gasoline
Method Blank	mg/kg	mg/kg
	0.50	NO NO
OAK7-0.15	0.50	ND
OAK7-0.30	0.50	ND
OAK7-0.90	0.50	ND .
OAK7-1.50	0.50	ND
OAK7-3.0	0.50	ND
OAK7-4.5	0.50	ND
OAK9-0.15	0.50	, ND
OAK9-0:30	0.50	ND ND
OAK9-0.90	0.50	
OAK9-1.50		ND
	0.50	ND
n 1815 - Silving Galling Water States of a		
		경영원 경영원 및 공연원 학교 전상을 보고 있었다. 그런 이 보고 있는 것으로 되었다. 교통 이 대통령은 프로젝트 (1982년 1985년 1982년 1982년 1987년 1987년 1987년 1987년 1987년 1987년 1987년 1987년 1987년 1987년 1987년 198
en er i 10 kg/men 1980 og skriveren er er er er er er er er er er er er er	manaka da aka kada kerenjia da da da da da da da da da da da da da	
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Soil Analyst: GR Date Sampled: 05/20/99

Date Received: 05/21/99

Date Analyzed: 05/30-31/99

Batch Number: 8015GS2239

	Detection	Petroleum Hydrocarbons as	
Carrada ID	Limit	Gasoline	·
Sample ID Method Blank	mg/kg	mg/kg	
	0.50	DO	
OAK9-3.0	0.50	ND	: 65: 65:55 \$1.51. paga 50
OAK9-4.5	0.50	ND	
OAK10-0.15	0.50	ND	
OAK10-0.30	0.50	ND	
OAK10-0.90	0.50	ND	100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
OAK10-1.50	0.50	ND	
OAK10-3.0	0.50	ND	: 1946 AMMONETYPPET
OAK10-4.5	0.50	ND	
OAK11-0.15	0.50	ND	
OAK11-0:30	0.50	ND	
n i Transina (1906) e e e e e e e e e e e e e e e e e e e	kan dikabin 1984 dalah 1984 Pelabin berada 1990 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1 Banaran 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 1991 dalam 199		
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.: Matrix:

14928 Soil

Analyst:

GR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

06/01/99

Batch Number:

8015GS2240

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/kg	mg/kg
Method Blank	0.50	ΟΝ
OAK11-0.90	0.50	ND
OAK11-1.50	0.50	ND
OAK11-3.0	0.50	ND .
OAK11-4.5	0,50	ND
OAK 8-0.15	0.50	, ND
OAK 8-0.30	0.50	ND:
OAK 8-0.90	0.50	ND
OAK 8-1:50	0.50	ND
OAK 8-3.0	0.50	ND
OAK 8-4.5	0.50	ND
 Compared to the c	1. F. 6 (1995)	n Partin de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Compa La Companya de la Companya de
The first statement of a motion designation to produce the		BERBERT HER STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL ST STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL STEEL ST

Matrix: Soil

Batch #: 8015GS2232

Batch Accuracy Results

	Spike Concentration mg/Kg	Recovery LCS	cceptance Limits 6 Recovery	ass/Fail
Analyte	Spike (mg/Kg	~~~ ~	Aco R	Pas

Analytic	cal Notes:	
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Batch Precision Results

MS/MSD Sample ID: Labora	Spike Sample And Recovery mg/Kg	Spike Duplicate	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Analyte Gasoline		<u>க்க</u> 10.06	<u>& 6</u>	<u>5 25</u>	മ് Pass

Analytical Notes:	

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Matrix: Soil

Batch #: 8015GS2239

Batch Accuracy Results

Sample ID: Laboratory Cont	Spike Concentration gamma/Kg	ay ∟CS	ce Limits	
Analyte	Spike Cor mg/Kg	% Recove	Acceptance % Recovery	Pass/Fail
Gasoline	10.0	99	70 - 130	Pass

Analytical Notes:	
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Batch Precision Results

MS/MSD Sample ID: 149	nple mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	· Control Limit	Ta Ta
Analyte	Spike Sar Recovery	Spike Du Recovery	Relati	Upper RPD	Pass/Fail
Gasoline	9.55	9.29	3%	25%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analyti	cal Note	es:	

Matrix: Soil

Batch #: 8015GS2240

Batch Accuracy Results

Analyte	Spike Concentration mg/Kg	% Recovery LCS		Acceptance Limits	% Recovery	ass/Fail
Gasoline	10.0	94	70	y į	130	Pass

Analytical Notes:	

Batch Precision Results

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.40	10.05	7%	25%	Pass

MS:	Matr	ix Spi	ike S	amp	ie
MSE	D: Ma	ıtrix S	pike	Dup	licate

_	Analytical	Notes:		
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

PSI Client: 05/20/99 Date Sampled: Project: Caltrans: 6th/Castro Date Received: 05/21/99 Job No.: 14928 Date Analyzed: 05/21/99 Matrix: Water Batch Number: 8015GW2228 GR : Analyst:

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/L	mg/L
Method Blank	0.5	NO
WOAK-7	0.5	ND
WOAK-9	0.5	ND
WOAK-10	0.5	ND
WOAK-11	0.5	ND
WOAK-8	0.5	ND "
WOAK-3	0:5	0.90

Matrix: Water

Batch #: 8015GW2228

Batch Accuracy Results

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	98	70 - 130	Pass

Analytical Notes:	
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.75	9,07	7%	25%	Pass

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MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil

Analyst:

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260S1704,8260S1706

	Sample ID:	Blank	OAK7-0.15	OAK7-0.30	OAK7-0.90	OAK7-1.5	OAK7-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ND
Benzene	0,001	ND	ND	ND	ND	ND	ND:
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	NO	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND .	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND .	ND	ND	ND	ND	ND
sec-Butylbenzene	0,002	ND	ND	ND	ND .	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	.ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND.	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chloratoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromachloromethane	0.002	ND	ND	ND	ND	ND	NĐ
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ne 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0,001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil JMR

Analyst:

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260\$1704,8260\$1706

	Sample ID:	Blank	OAK7-0.15	OAK7-0.30	OAK7-0.90	OAK7-1.5	OAK7-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND ·	ND	ND	ŅD	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ON	ND :	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (Mtl	3E) 0.005	ND	ND	ND	ND	DA	ND
Napthalene	0.002	ND	ND	0.17	ND	ND	ND
n-Propylbenzerie	0.001	ND	ND	ND	. ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachioroethene	0.001	ND	ND	ND	ND	ND	ND.
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0,001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND:	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	. ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	OAK7-0.15	OAK7-0.30	OAK7-0.90	OAK7-1.5	OAK7-3.0
Dibromofluoromethane	103	105	107	103	109	93
Toluene-d8	101	99	93	104	102	101
Bromafluorobenzene	107	98	92	102	106	95



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst:

Soil **JMR**

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260\$1704,8260\$1706

	Sample ID:	Blank	OAK7-0.15	OAK7-0.30	OAK7-0.90	OAK7-1.5	OAK7-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	ND	ND	ND	ND	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928

Matrix: Soil Analyst: JMR Date Sampled: 05/20/99

Date Received: 05/21/99
Date Analyzed: 05/25-30/99

Batch Number: 8260S1700,8260S1703

8260\$1704,8260\$1706

	Sample ID:	OAK7-4.5	OAK9-0.15	OAK9-0.30	OAK9-0.90	OAK9-1.5	OAK9-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ND
Benzene	0.001	ND	ND	ND	ND	ND	NĐ
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ОИ	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND.	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0,002	ND	ND	ND	NĐ	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ne 0.01	ND	ND CIN	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	DO	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	NO	ND	ND ND	ND ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil **JMR**

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed: Batch Number: 05/25-30/99

8260S1700,8260S1703 8260S1704,8260S1706

•	Sample ID:	OAK7-4.5	OAK9-0.15	OAK9-0.30	OAK9-0.90	OAK9-1.5	OAK9-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	NĐ :
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	DM	ND	ND
p-isopropyitoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND	GN	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	GN	ND
Napthalene	0.002	ND	0.006	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND .	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND ×
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0,001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	0.002	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID): OAK7-4.5	OAK9-0.15	OAK9-0.30	OAK9-0.90	OAK9-1.5	OAK9-3.0
Dibromofluoromethane	106	104	100	106	104	100
Toluene-d8	102	101	100	100	99	98
Bromofluorobenzene	108	103	86	98	106	106



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260S1704,8260S1706

-	Sample ID:	OAK7-4.5	OAK9-0.15	OAK9-0.30	OAK9-0.90	OAK9-1.5	OAK9-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	ND	ND	ND	ND	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil

Analyst:

14920

JMR

Date Sampled:

led: 05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260\$1704,8260\$1706

	Sample ID:	OAK9-4.5	OAK10-0.15	OAK10-0.30	OAK10-0.90	OAK10-1.5	OAK10-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND .	ND	ND	ND
Benzene	0.001	.ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ОИ	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND :
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	DM	ND	ND.
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ine 0,01	ND	ND	ND	ND	ND	NĐ
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND .	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0,005	ND	ND	ND	ND	ON	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ON C	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928 -

Matrix: Analyst: Soil

JMR

Date Sampled:

05/20/99

Date Received:

Date Analyzed:

05/21/99 05/25-30/99

Batch Number:

8260S1700,8260S1703

8260\$1704,8260\$1706

	Sample ID:	OAK9-4.5	OAK10-0.15	OAK10-0.30	OAK10-0.90	OAK10-1.5	OAK10-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND .	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND -	ND	ND	ND	ND
Isopropylbenzene	0,001	ND	ND	ND	ND	ND	ND .
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND .	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	- ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	NĐ	MD
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	NĐ	ND	ND	ND	ND
1,1,2,2-Tetrachioroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	NO	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ON	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	NÐ	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

ourrogates (70 recove							
	Sample ID:	OAK9-4,5	OAK10-0.15	OAK10-0.30	OAK10-0.90	OAK10-1.5	OAK10-3.0
Dibromofluoromethane		104	104	105	106	102	104
Toluene-d8		102	103	100	100	101	99
Bromafluorabenzene		103	100	105	106	100	103



Client:

PSI

Project:

Job No.:

14928

Matrix: Analyst:

Sail **JMR**

Caltrans: 6th/Castro

Date Sampled: Date Received: 05/20/99

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260S1704,8260S1706

	Sample ID:	OAK9-4.5	OAK10-0.15	OAK10-0.30	OAK10-0.90	OAK10-1.5	OAK10-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
-Butyl alcohol	0.050	ND	ND	ND	ND	. ND	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	ON	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
-Amyl-methyl ether	0.005	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil

Analyst:

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260S1704,8260S1706

	Sample ID:	OAK10-4.5	OAK11-0.15	OAK11-0.30	OAK11-0.90	OAK11-1.5	OAK11-3,0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	ND	ND
Benzene	0,001	ND	ND	ND	ND	. ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0,005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	. ND
Bromaform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chlaroprop	ane 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0,001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	DM	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0,001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0,001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND .	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil

Analyst: **JMR** Date Sampled:

05/20/99

Date Received:

Date Analyzed:

05/21/99

Batch Number:

05/25-30/99

8260\$1700,8260\$1703

8260\$1704,8260\$1706

	Sample ID:	OAK10-4.5	OAK11-0.15	OAK11-0.30	OAK11-0.90	OAK11-1.5	OAK11-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	.ND	ND	ND	ND.	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	ND.
p-isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	ND .	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND	ND	ND	ND	NO	ND
Napthalene	0.002	ND	ND.	0.002	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	NĐ	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachioroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachioroethene	0.001	ND	ND	ND	NĐ	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	.ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	OAK10-4.5	OAK11-0.15	OAK11-0.30	OAK11-0.90	OAK11-1.5	OAK11-3.0
Dibromofluoromethane	97	107	106	107	103	104
Toluene-d8	100	97	99	102	101	101
Bromofluorobenzene	100	91	15	105	102	105



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260\$1704,8260\$1706

• •	Sample ID:	OAK10-4.5	OAK11-0.15	OAK11-0.30	OAK11-0.90	OAK11-1.5	OAK11-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
-Butyl alcohol	0.050	. ND	ND	ND	ND	ND ·	ND
Diisopropyl ether	0.005	ND	ND	ND	ND	. ND	· · · NĐ · ·
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND
-Amyl-methyl ether	0,005	ND	ND	ND	ND 1	NĐ	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil JMR

Analyst:

Date Sampled:

05/20/99

Date Received:

05/20/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260S1704,8260S1706

	Sample ID:	OAK11-4.5	OAK8-0,15	OAK8-0.30	OAK8-0.90	OAK8-1.5	OAK8-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.05	ND	ND	ND	ND	· ND	ND
Benzene	0.001	ND	ND	ND	NÐ	ND.	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromofarm	0.005	ND	ND	ND	ND .	ND	NĐ
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	0.01	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon disulfide	0.01	ND	ND	ND	ND	ND	ND .
Carbon tetrachloride	0.001	ND	ND	ND	ND	. ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND.	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	NO
4-Chloratoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND .	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropa	ane 0.01	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0,001	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0,002	ND	ND	ND	ND	. ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260S1704,8260S1706

	Sample ID:	OAK11-4.5	OAK8-0.15	OAK8-0.30	OAK8-0.90	OAK8-1.5	OAK8-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
2-Hexanone	0.01	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	NĐ
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.05	ND	ND	ND	GN	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtE	3E) 0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	ND	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	NĐ	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	0.05	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	OAK11-4.5	OAK8-0.15	OAK8-0.30	OAK8-0.90	OAK8-1.5	OAK8-3.0
Dibromofluoromethane	105	106	103	102	105	107
Toluene-d8	100	101	98	97	105	102
Bromofluorobenzene	108	96	103	107	104	108



Client:

PSI

Project:

Job No.:

Matrix: Analyst: Soil

Caltrans: 6th/Castro

14928

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260\$1700,8260\$1703

8260\$1704,8260\$1706

	Sample ID:	OAK11-4.5	OAK8-0.15	ÓAK8-0.30	OAK8-0.90	OAK8-1.5	OAK8-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
t-Butyl alcohol	0.050	ND	ND	ND	ND	ND	ND
Diisopropyl ether	0,005	ND	ND	ND	ND	NĐ	ND
Ethyl-t-butyl ether	0.005	ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil

JMR

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260S1704,8260S1706

	Sample ID:	OAK8-4.5
Compounds	DL	mg/Kg
Acetone	0.05	ND
Benzene	0,001	ND
Bromobenzene	0,005	ND
Bromochloromethane	0.005	ND.
Bromodichloromethane	0.001	ND
Bromaform	0.005	ND
Bromomethane	0.005	ND
2-Butanone (MEK)	0.01	ND
n-Butylbenzene	0.002	ND
sec-Butylbenzene	0.002	ND
tert-Butylbenzene	0.002	ND
Carbon disulfide	0.01	ND
Carbon tetrachloride	0.001	ND
Chlorobenzene	0.001	ND
Chloroethane	0.005	ND
Chloroform	0.002	ND
Chloromethane	0.001	ND
2-Chlorotoluene	0.002	ND
4-Chlorotoluene	0.002	ND
Dibromochloromethane	0.002	ND
1,2-Dibromoethane	0.002	ND
1,2-Dibromo-3-chloropropa	ne 0.01	ND
Dibromomethane	0.001	ND
1,2-Dichlorobenzene	0.001	ND
1,3-Dichlorobenzene	0.002	ND
1,4-Dichlorobenzene	0.002	ND
Dichlorodifluoromethane	0.005	ND
1,1-Dichloroethane	0.001	ND
1,2-Dichloroethane	0.001	ND
1,1-Dichloroethene	0.005	ND
cis-1,2-Dichloroethene	0.002	ND
trans-1,2-Dichloroethene	0.002	ND
1,2-Dichloropropane	0.001	ND
1,3-Dichloropropane	0.001	ND
2,2-Dichloropropane	0.001	ND .
1,1-Dichloropropene	0.001	ND
cis-1,3-Dichloropropene	0.001	ND
trans-1,3-Dichloropropene	The state of the s	ND.



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Soil

JMR,

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/25-30/99

Batch Number:

8260S1700,8260S1703

8260\$1704,8260\$1706

•	Sample ID:	OAK8-4.5
Compounds	DL	mg/Kg
Ethylbenzene	0.001	ND
Hexachlorobutadiene	0.001	ND
2-Hexanone	0.01	ND
Isopropyibenzene	0.001	ND ND
p-isopropyltoluene	0.002	ND
Methylene chloride	0.05	ND
4-Methyl-2-pentanone	0.01	ND
Methyl-tert-butyl ether (MtB	E) 0.005	ND .
Napthalene	0.002	ND
n-Propylbenzene	0.001	ND
Styrene	0.001	ND .
1,1,1,2-Tetrachloroethane	0.001	ND
1,1,2,2-Tetrachloroethane	0.002	ND:
Tetrachloroethene	0.001	ND
Toluene	0,001	ND
1,2,3-Trichlorobenzene	0.002	ND.
1,2,4-Trichlorobenzene	0.002	ND .
1,1,1-Trichloroethane	0.001	ND
1,1,2-Trichloroethane	0.003	ND ND
Trichloroethene	0.001	ND
1,2,3-Trichloropropane	0.003	ND
Trichlorofluoromethane	0.001	ND
Trichlorotrifluoroethane	0.05	ND
1,2,4-Trimethylbenzene	0.001	ND
1,3,5-Trimethylbenzene	0.001	ND
Vinyl chloride	0.002	ND
Xylenes (total)	0.003	ND

Surrogates (% recovery) Limits: 80 - 130

	Sample ID: OAK8-4.5
Dibromofluoromethan	ne 103
Toluene-d8	100
Bromofluorobenzene	98



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix:

Soil Analyst: JMR. Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed: Batch Number: 05/25-30/99 8260S1700,8260S1703

8260S1704,8260S1706

mg/Kg ND ND	
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05	05 ND

Matrix: Soil

Batch #: 8260S1700 -

Batch Accuracy Results

Sample ID: Laboratory Co	ontrol Sample	<u> </u>	·	
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	118	59 - 172	Pass
Benzene	0.020	109	66 - 142	Pass
Trichloroethene	0.020	107	71 - 137	Pass
Toluene	0.020	107	59 - 139	Pass
Chlorobenzene	0.020	106	60 - 133	Pass

Analytical N	Votes	:		
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Batch Precision Results

MS/MSD Sample ID: OAK9-3.0

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0218	0.0253	15%	22%	Pass
Benzene	0.0199	0.0217	9%	21%	Pass
Trichloroethene	0.0194	0.0221	13%	24%	Pass
Toluene	0.0201	0.0217	8%	21%	Pass
Chlorobenzene	0.0202	0.0228	12%	21%	Pass

Α	nalytic	al Not	es:		
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MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Matrix: Soil

Batch #. 8260S1703

Batch Accuracy Results

Sample ID: Laboratory Co	AILLOI Sallipi	7		
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fall
1,1-Dichloroethene	0.020	118	59 - 172	Pass
Benzene	0.020	114	66 - 142	Pass
Trichloroethene	0.020	106	71 - 137	Pass
Toluene	0.020	112	59 - 139	Pass
Chlorobenzene	0.020	112	60 - 133	Pass

Analytical Notes:		
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Batch Precision Results

MS/MSD Sample ID: OAK10-0.30

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0210	0.0248	17%	22%	Pass
Benzene	0.0202	0.0222	9%	21%	Pass
Trichloroethene	0.0204	0.0211	4%	24%	Pass
Toluene	0.0201	0.0224	11%	21%	Pass
Chlorobenzene	0.0202	0.0223	10%	21%	Pass

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Analytical Notes

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Matrix: Soil

Batch #: 8260S1704

Batch Accuracy Results

Sample ID: Laboratory C	ontroi Sampi	<u> </u>		
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	124	59 - 172	Pass
Benzene	0.020	112	66 - 142	Pass
Trichloroethene	0.020	109	71 - 137	Pass
Toluene	0.020	108	59 - 139	Pass
Chlorobenzene	0.020	110	60 - 133	Pass

Analytical Notes:					

Batch Precision Results

MS/MSD Sample ID: OAK8	3-0.90	-			•
Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0206	0.0195	6%	22%	Pass
Benzene	0.0184	0.0175	5%	21%	Pass
Trichloroethene	0.0179	0.0183	2%	24%	Pass
Toluene	0.0189	0.0173	9%	21%	Pass
Chlorobenzene	0.0186	0.0180	3%	21%	Pass

MS: Matrix Spike Samı	ole
MSD: Matrix Spike Dur	olicate

Analytical Notes:	
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Matrix: Soil

Batch #: 8260S1706

Batch Accuracy Results

Sample ID: Laboratory Cont	rol Sample	• •	<u> </u>	·
Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	125	59 - 172	Pass
Benzene	0.020	119	66 - 142	Pass
Trichloroethene	0.020	117	71 - 137	Pass
Toluene	0,020	117	59 - 139	Pass
Chlorobenzene	0.020	119	60 - 133	Pass

Analytical	Notes	:	•	
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Batch Precision Results

MS/MSD Sample ID: 14926-10

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0241	0.0260	8%	22%	Pass
Benzene	0.0221	0.0246	10%	21%	Pass
Trichloroethene	0.0208	0.0238	13%	24%	Pass
Toluene	0.0215	0.0249	15%	21%	Pass
Chlorobenzene	0.0224	0.0249	11%	21%	Pass

	Analytical Notes:	
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MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Water Analyst: JMR Date Sampled: 05/20/99 Date Received: 05/21/99

Date Analyzed: 05/26-29/99

Batch Number: 8260W1699

8260W1702 8260W1705

	Sample ID:	Blank	WOAK-7	WOAK-9	WOAK-10	WOAK-11	WOAK-8
Compounds	DL	μg/L	μg/L	μ g/L	μg/L_	μg/L	μg/L
Acetone	50	ND	ND	ND	ND	ND	ND
Benzene	0.5	ND	ND	ND	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND `	"ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND:	ND	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND	ND.	ND
Carbon disulfide	10	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.5	ND	NĐ	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND	NĐ	ND
Chloromethane	0.5	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	DM	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND		ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chlaroprop	ane 10	ND	ND	ND	ND	ND	ND
Dibromomethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ON	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0,5	ND	ND	ND	ND	NĐ	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene		ND	ND	ND	ND	ND	ND



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

14928

Matrix: Analyst: Water JMR Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

05/26-29/99

Batch Number:

8260W1699

8260W1702

8260W1705

	Sample ID:	Blank	WOAK-7	WOAK-9	WOAK-10	WOAK-11	WOAK-8
Compounds	DL	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Ethylbenzene	0.5	- ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND	ND	ND
2-Hexanone	10	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	, ND	ND	ND
Methylene chloride	50	ND	ND	ND	ND	.ND	ND
4-Methyl-2-pentanone	5.0	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtB	E) 1.0	ND	ND	ND *	ND	ND	ND
Napthalene	0.5	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND :	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	ND	ND	ND
Tetrachtoroethene	0.5	ND	ND	ND	ND	ND	ND
Toluene .	0.5	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND	ND	ND
Trichloroethene	0.5	ND	ND	. ND	ND	NĐ	ND
1,2,3-Trichloropropane	0.5	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.5	ND	ND	GN	ND	ND	ND
Trichlorotrifluoroethane	5.0	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.5	ND	ND	ND	ND	NĐ	ND
Xylenes (total)	1.5	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

	Sample ID:	Blank	WOAK-7	WOAK-9	WOAK-10	WOAK-11	WOAK-8
Dibromofluoromethane		101	102	103	105	101	106
Toluene-d8		99	100	100	101	99	102
Bromofluorobenzene		108	106	106	102	104	105



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No.:

Matrix: Analyst:

14928

Water **JMR**

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

5/26,28,29/99

Batch Number:

8260W1699,1702,5

	Sample ID:	Blank	WOAK-7	WOAK-9	WOAK-10	WOAK-11	WOAK-8
Compounds	DL	μg/L	μg/L	μg/L	μ g/ L	μg/L	μg/L
-Butyl alcohol	50	ND	ND	ND	ND	ND	ND
Diisopropyl ether	5.0	ND	ND	ND	ND	ND	ND
Ethyl-t-butyl ether	5.0	ND	ND	ND	ND	ND	ND
-Amyl-methyl ether	5.0	ND	ND	NÐ	ND	ND	ND



PSI Client:

Project: Caltrans: 6th/Castro

14928 Job No.: Matrix: Water

Analyst: **JMR** Date Sampled: Date Received:

05/20/99

Date Analyzed:

05/21/99 05/26-29/99

Batch Number: 8260W1699

8260W1702

8260W1705

S	ample ID:	WOAK-3
Compounds	DL	μ g /L
Acetone	50	ND
Benzene	0,5	2.5
Bromobenzene	1.0	ND
Bromochloromethane	1.0	ND
Bromodichloromethane	0.5	ND
Bromoform	0.5	ND
Bromomethane	0.5	ND ·
2-Butanone (MEK)	10	ND
n-Butylbenzene	0.5	ND
sec-Butylbenzene	0.5	ND
tert-Butylbenzene	0.5	ND
Carbon disulfide	10	ND
Carbon tetrachloride	0.5	ND
Chlorobenzene	0.5	ND:
Chloroethane	0.5	ND
Chloroform	0.5	ND
Chloromethane	0.5	ND
2-Chlorotoluene	0.5	ND
4-Chlorotoluene	0.5	ND .
Dibromochloromethane	0.5	ND
1,2-Dibromoethane	0.5	ND
1,2-Dibromo-3-chloropropar	ie 10	ND
Dibromomethane	0.5	ND
1,2-Dichlorobenzene	0.5	NO
1,3-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Dichlorodifluoromethane	0.5	ND
1,1-Dichloroethane	0.5	ND
1,2-Dichloroethane	0.5	ND .
1,1-Dichloroethene	0.5	ND
cis-1,2-Dichloroethene	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,2-Dichloropropane	0.5	ND
1,3-Dichloropropane	0.5	Maria N D
2,2-Dichloropropane	0.5	ND
1,1-Dichloropropene	0,5	ND
cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND



Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14928 Matrix: Water Analyst: JMR Date Sampled: Date Received: 05/20/99 05/21/99

Date Analyzed: ... Batch Number:

05/26-29/99 8260W1699

8260W1702

8260W1705

Sarr	ıple ID:	WOAK-3	
Compounds	DL	μ g/L	
Ethylbenzene	0.5	40	
Hexachlorobutadiene	0.5	ND	
2-Hexanone	10	ND	
Isopropyibenzene	0,5	2.8	
p-Isopropyltoluene	0.5	ND	
Methylene chloride	50	ND	
4-Methyl-2-pentanone	5.0	ND	
Methyl-tert-butyl ether (MtBE)	1.0	ND	
Napthalene	0.5	35	
n-Propylbenzene	0.5	13	
Styrene	0.5	ND	
1,1,1,2-Tetrachloroethane	0.5	ND	
1,1,2,2-Tetrachloroethane	1.0	ND	
Tetrachioroethene	0.5	ND	
Toluene	0.5	11	
1,2,3-Trichlorobenzene	0,5	ND	
1,2,4-Trichlorobenzene	0.5	ND	·
1,1,1-Trichloroethane	0.5	ND	
1,1,2-Trichloroethane	0.5	ND	
Trichloroethene	0.5	ND	
1,2,3-Trichloropropane	0.5	ND	
Trichlorofluoromethane	0.5	ND	
Trichlorotrifluoroethane	5.0	ND	
1,2,4-Trimethylbenzene	0.5	38	
1,3,5-Trimethylbenzene	0.5	19	
Vinyl chloride	0.5	ND	
Xylenes (total)	1.5	100	

Surrogates (% recovery) Limits: 80 - 130

3	
Sample ID:	WOAK-3
Dibromofluoromethane	104
Toluene-d8	101
Bromofluorobenzene	103



Client:

PSI

Project:

Caltrans: 6th/Castro

Job No..

14928

Matrix: Analyst:

JMR

Water

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Analyzed:

5/26,28,29/99

Batch Number:

8260W1699,1702,5

	Sample ID:	WOAK-3		 		
Compounds	DL	μg/L		 		
t-Butyl alcohol	50	ND			 en samanana	i postani ne seo
Diisopropyl ether	5.0	- ND				900-11-13 100-10-12
Ethyl-t-butyl ether	5.0	. ND				
t-Amyl-methyl ether	5,0	ND		1484.000 (00 1400) 1891.000 (00 1400)		

Matrix: Water

Batch #: 8260W1699

Batch Accuracy Results

Sample ID: Laboratory	Control	Sampre
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Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20.0	118	59 - 172	Pass
Benzene	20.0	109	66 - 142	Pass
Trichloroethene	20.0	107	71 - 137	Pass
Toluene	20.0	107	59 - 139	Pass
Chlorobenzene	20.0	106	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	23.7	24.7	4%	22%	Pass
Benzene	21.9	23.2	6%	21%	Pass
Trichloroethene	21.5	22.0	2%	24%	Pass
Toluene	21.6	22.9	6%	21%	Pass
Chlorobenzene	21.2	23.6	10%	21%	Pass

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	



Matrix: Water Batch #: 8260W1702

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/l_	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20.0	118	59 - 172	Pass
Benzene	20.0	114	66 - 142	Pass
Trichloroethene	20.0	106	71 - 137	Pass
Toluene	20.0	112	59 - 139	Pass
Chlorobenzene	20.0	112	60 - 133	Pass

Analytical Notes:					
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Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery μg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	23.7	25.6	8%	22%	Pass
Benzene	22.8	23.6	4%	21%	Pass
Trichloroethene	21.3	23.7	11%	24%	Pass
Toluene	22.5	23.1	2%	21%	Pass
Chlorobenzene	22.5	24.3	8%	21%	Pass

MS:	Matrix	: Spike	Sam	ple
MSE	: Matr	ix Spi	ke Du	plicate

Analytical Notes:	

Matrix: Water

Batch #: 8260W1704

Batch Accuracy Results

Sample ID: Laboratory Co	introl Sample	e ·		
Analyte	Spike Concentration µg/l.	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20.0	124	59 - 172	Pass
Benzene	20.0	112	66 - 142	Pass
Trichloroethene	20.0	109	71 - 137	Pass
Toluene	20.0	108	59 - 139	Pass
Chlorobenzene	20.0	110	60 - 133	Pass

Analytical Notes:	

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	24.8	24.1	3%	22%	Pass
Benzene	22.4	22.4	0%	21%	Pass
Trichloroethene	21.8	22.1	1%	24%	Pass
Taluene	21.7	23.0	6%	21%	Pass
Chlorobenzene	22.0	22.4	2%	21%	Pass

MS:	Matrix	Spike	Sample	
MSC	Դ Matri	iv Snik	a Dunlies	ate

	Analytical Notes:	
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Centrum Job # 14728

290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

											Ana	lyse	s Rec	uest	ed		_	,		
Project No.: 5 Project Man Fra Client Name Company)	MK ROSS	4	(510)	1+10m 78	s: 6+4/ Caste Fak: 5-111 (570) 70 Winton Ave, Hay	85-1192	82.5	ides PCBs Pest/PCB	sel Princenz	oline -8026 - entity.	-	s: 8270 625	C(CAM) PP RCRA		TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	1 Lead (6010)	799		Turn-around time 24 Hr. RUSH* 48 Hr. RUSH* Normal TAT Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sample		Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides	8015M: Diesel	8015M: Gasoline -802	418.1 (TRPH)	Semivolatiles:	Metals: TTLC(CAM)	Lead Only	FI SOT HO	Flashpoint	Tota	EPA	,	Remarks/ Special Instructions
1	OAK7-0.15	5/20/9	730	S			\geq	_	X	X							X	Х		
Z	- 0,30		735	1		<u> </u>		_		\coprod	1	<u> </u>	<u> </u>				-	\coprod		
3	-0.90		740				Ц	<u> </u>	\coprod	\coprod	_	<u> </u>	<u> </u>			_	\parallel	\parallel		
4	- 1.50	<u> </u>	745					_		\coprod	_		<u> </u>					_	_	
5	- 3.0		750	1,				_	-	\prod	\downarrow	ļ	<u> </u>					_		,
6	- 4,5		755	V		<u> </u>			\prod	\coprod	-	ļ.,	<u> </u>				\coprod			
7	WOAK-7		810	W			Ш	_	\coprod		1	-	_	-			igapha	-	<u> </u>	
8	OAK9-0.15		830	5				-		\prod	_	-	ļ				╂.	-		
7	- 0.30	4	835					_	$\downarrow \downarrow$	\prod	\perp	_	<u> </u>			-	-			<u> </u>
10	- 0.90	V_	840	V		<u> </u>	V	1	1	V			Ш.		<u> </u>	<u></u>	V	V		
elinquished l	by: (Sampler's Signature)		Date 3/20/24	Time / 700	Relinquished by:		Date	•	Time	8	То	be co	mplete	ed by i	aborat	tory p	erson	nel:		Sample Disposal
eceived by:			Date Date	Time	Received by:	,	Date	9	Time	ē .		•	chille:							☐ Client will pick up
Fl	oflogd the signet	ura an thi	s chain of cur	tody form	Relinquished by:	<u> </u>	Dat	8 .	Time	6	٦.		le con				Yes	□ No		☐ Return to client
onstitutes a	of samples and the signati authorization to perform the and Conditions set forth on t	analyses the back	specified ab hereof.	ove under	Received for Laboratory by:	1	Date 5	216	Time	: 0°	기 _		er 🖸	UPS/F	ed Ex	· 🗆 -	Hand o	arriec	i	☐ Lab disposal fee \$5
aboratory	Notes: Tuclui	de	OX YG	enate	es and EDB	EDC	. ,	,h		8	260	ツ_							- 	Sample Locator No.
·			. يو				•	ガ	hu	ks						_				Ey

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Centrum Job # 14928

Page 2 of 4

											Ana	lyses	Rec	uest	ed					
Project No.:	575 -90030	1		ame:	: 6th/ Castro		31	Pest/PCB		X			RCRA		GOO	готне	6010)	0 +6	·ĺ	Turn-around time
Project Man	ager:		Phone:		Fax:		I II		ş			2	8		₹	ξ	/	~	Ί.	☐ 24 Hr. RUSH*
	mle Poss		Tares				- ₩	B		ı,		83	<u>₽</u>		Conductivity	He	Lan	3	1	□ Normai TAT
Client Name (Company)	PST		Address:				8740 mm 8242	ides P	18	oline 8	ı F	s: 827(C(CAM		TSS Cor	Fluoride	3	11.6		* Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As II should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides PCBs	8015M: DieseT	8015M: Gasoline	418.1 (TRPH)	Semivolatiles: 8270	Metals: TTLC(CAM)	Lead Onty	ਸ eor Hq	Flashpoint Fluoride Hex Chrome	10407	EPA] .	Remarks/ Special Instructions
11	OAK9- 1.50	5/20/	845	5			X		X	X						:	X	X		
12	- 3.0		850						1	1							1			
13	- 4.5		855	V						Ц	_						\downarrow			
14	WOAK-9		905	W	·						ļ						\perp	4		·
15	OAK10-0.15	. }	1000	5		·				\coprod	ļ						\perp		_	
16	- 0.30		1005			-		_	_	\coprod				i			1	\parallel	<u> </u>	
17_	- 0.90		1010						\prod								\perp		ļ	
18	- 1.50		1015							\prod	ļ						ļ	$\!$		
19	- 3.0	, ,	1020		:						_							 	_	
26	- 4.5	V	1025			į	₩		$ \Psi $	1	<u> </u>						\mathbf{V}_{-}	Ψ		
Relinquished t	y; (Sampler's Signature)		Date 5/20/99	Time (7av)	Relinquished by:		Date	1	Time	t .	Tol	be con	nplete	d by k	aborat	tory po	ersoni	nei:	.*	Sample Disposal
Received by:			Date	Time	Received by:		Date	1	Time		-	nples :								☐ Client will pick up
The delivery	of samples and the signatu	re on this	chain of cus	tody form	Relinquished by:		Date		Time		1	sample					Yes	⊐ No		☐ Return to client
	uthorization to perform the d Conditions set forth on t	-	•	ove under	Received for Laboratory by:		Date 5		Time		00	Courle	r 🖪 l	JPS/F	ed Ex	̀□н	and c	arrie	1	☐ Lab disposal fee \$5
Laboratory I	Votes:					**************************************	1-1-	,,.,			٠.									Sample Locator No.
																				E-4

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Chain of Custody Record

											Ana	lyses	Rec	uest	ed _					
Project No.:	575-9603	4	Project N G Phone:	ame: +rang	: 6 th/ (a stro		Bear Transfer	Pest/PCB		X		25	P RCRA		devity COD	ex Chrome	1 (6010)			Turn-around time 24 Hr. RUSH* 48 Hr. RUSH*
Client Name (Company)	PSI		Address:				9	des PCBs		line 900		8270 625	(CAM) P		S Conductivity	luoride H	, , ,	177)		□ Normal TAT *Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sample	Time ed sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080; Pesticides PCBs Pest/PCB	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles:	Metals: TT.C(CAM) PP RCRA	Lead Only	SZT SQT Hg	Flashpoint Fluoride Hex Chrome	total	EP4		Remarks/ Special Instructions
21	WOAK-10	5/20/	1035	W			X		X	X							X	X		
22	OAK 11-0.15		1100	S				<u> </u>	Ц	11						<u> </u>	Щ	11	<u> </u>	
23	- 0.30		1165				Ц			\prod	_					_	<u> </u>	\coprod		
24	- 0.90		1110						Ц		_							Ц		
25	-1.50		1115						\coprod		<u> </u>					ļ		\coprod		
26	-3.0		1120]	\coprod		
27	- 4.5		1125	1		<u> </u>								·						
28	WOAK-11		1150	W														Ш		
24	OAK8-0.15		1205																	
30	-0.30		1210				\overline{V}		V	V							\bigvee	$ \downarrow\rangle$		
1 *	by: (Sampler's Signature)		Date, 5/20/	Time 1700	Relinquished by:		Date	•	Time	,	То	be co	nplete	ed by I	abora	ntory p	ersor	nel:		Sample Disposal
Received by:			Date	Time	Received by:		Date	=	Time	•	'	mples stody								☐ Client will pick up
The delivery	of samples and the signat	ure on th	is chain of cu	stody form	Relinquished by:		Date		Time		AII,	sampl	e con	tainer	s Inta	ct? 🖸	Yes	□ No		☐ Return to client
constitutes a	authorization to perform the	analyse:	s specified ab	ove under	Received for Laboratory by:	$\overline{}$	Date	20/49	Time	:0L		Courle	r 🗅	UPS/F	ed E	х 🗆 і	land	carrie	d ,	☐ Lab disposal fee \$5
Laboratory	Notes:		. ,				. 													Sample Locator No.
																				1-4

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Chain of Custody Record

Centrum Job #
Page 4 of 4

										,	Ana	yse	Rec	uest	ed				
roject No.: 5 roject Man	75-9G03Y ager:		Project Na C g Phone:	ame: (+rans	: 6 th Cast	nd	- Table	8080; Pesticides PCBs Pest/PCB	LE .	X		625	PP RCRA		Conductivity COD	Hex Chrome	A (6010)	(040)	Turn-around time ☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH*
lient Name	PSI		Address:			·	3	ides PCE	Sel Tues	oline -888	-	8270			TSS Conde		lea	1 199	□ Normal TAT *Requires prior approval additional charges apply
Centrum ID Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pestic	8015M: Diesel Tue	8015M: Gasoline	418.1 (TRPH)	Sernivolatiles:	Metals: TTLC(CAM)	Lead Only	PH TDS TR	Flashpoint Fluoride	Total	EPA 1	Remarks/ Special Instructions
31	OAK 8-0.90	5/20/9	1215				X		X	X					_		X	X	
32	- 1.50		1220				Щ		1	1	<u> </u>		_	ļ <u>-</u>	_			44	
35	_3.0		1225	<u> </u>			\coprod			-	<u> </u>		_	_					
34	~ 4.5		1230				1	ļ	$\!$		-		_	<u> </u>	_				
35	WOAK-8	V	1258				V		V	V		_	<u> </u>	-		<u> </u>	Ų,	V	
94	WOAK-3	5/19/99	1250				X		\times	ľΧ	-	ļ	_	-		_	Λ	X	
	11/1		1/			//_			7	-	 	├		_	17	1			
		/_	X-/			4	\vdash	<u> </u>	/_	-	 		1	1-	\vdash	<u> </u>		4	
	00	1-6	 			\		+(+	-	-	 		/	_		1
Relinquished t	oy (Sampler's Signature)		Date	Time	Relinquished by:		Date	,	Time	1	To	he co	molete	ed by	labora	itory p	ersoni	nel:	Sample Disposal
Received by:			Date 5/20/99 Date	17ao	Received by:	<u> </u>	Date)	Time	•	Sai	mples	chille:	d? □	Yes	□ No			☐ · Client will pick up
he delivery	of samples and the signati	ure on this	chain of cu	stody form	Relinquished by:		Date		Time	*							Yes I		☐ Return to client
onstitutes a	uthorization to perform the nd Conditions set forth on t	analyses	specified ab	ove under	Received for Laboratory by:	_	Date	oky	11me			Courle	er 🗆	UPS/I	Fed E	x 🗆 i	Hand c	arried	☐ Lab disposal fee \$5
aboratory	Notes:		<u></u>		16/													-	Sample Locator No
,	•																		E-4



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI

1320 W. Winton Ave.

Hayward, CA 94545

Date Sampled:

07/02/99

Date Received:

07/07/99

Job Number:

15151

Project: Caltrans: 6th & Castro

CASE NARRATIVE

The following information applies to samples which were received on 07/07/99:

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by

Robert R. Clark, Ph.D. Laboratory Director

ELAP # 1184

DL: Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected — The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.



Lead By ICP

Client: PSI

Project: Caltrans: 6th & Castro

Job No.: 15151 Matrix: Water Analyst: RLB Date Sampled: 07/02/99
Date Received: 07/07/99

Date Digested: 07/07/99
Date Analyzed: 07/08/99
Batch Number: 6010W1258

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	0.1	NO
MW-1	0.1	ND
MW-2	0.1	ND
MW-3	0.1	ND

QC Sample Report - Metals

Matrix: Water

Batch #: 6010W1258

Batch Accuracy Results

Compound	Spike Col	% Recovery	Acceptance % Recovery	ss/Fail
	Concentration	ery LCS	ce Limits ary	

Analytica	al Notes:			
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		* .		
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-				
				*

Batch Precision Results

Lead	1.054	1.048	1%	20%	Pass
Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
MS/MSD Sample ID: 15148	3-2				

Analytical Notes:	
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1	

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



EPA 413.2 - Oil & Grease

Client: PSI

Project: Caltrans: 6th & Castro

Job No.: 15151 Matrix: Water Analyst: JL/NG Date Sampled: 07/02/99
Date Received: 07/07/99
Date Extracted: 07/07/99
Date Analyzed: 07/07/99
Batch Number: 4132W1066

	Detection Limit	Total Oil & Grease
Sample ID	mg/L	mg/L_
Method Blank	2.0	ND
MW-1	2.4	ND
MW-2	2.2	6.3
MW-3	2.3	ND

QC Report - EPA 413.2 Oil & Grease

Matrix: Water

Batch #: 4132W1066

Batch Accuracy Results

Analyte Reference Oil	Spike 0 mg/Kg	110	8 ℃ 4 % 70 - 130	Pass
	e Concentration (g	Recovery LCS	Acceptance Limits % Recovery	s/Fail

Analytical	Notes:		
			!
		•	
,	+		

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil	10.95	10.33	6%	25%	Pass

Analytical Notes:

Insufficient amount of sample available for MS/MSD analysis. An LCS/LCSD pair were analyzed to provide precision data for this batch.

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate



Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client: f

PSI

Project: Caltrans: 6th & Castro

Job No.: 15151 Matrix: Water Analyst: CP Date Sampled: 07/02/99

Date Received: 07/07/99 Date Extracted: 07/08/99 Date Analyzed: 07/08/99

Batch Number: 8015DW1680

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/L	mg/L	Limit; 50 - 150%
Method Blank	0.40	ND	89:%
MW-1	0.40	ND	90 %
MW-2	4.00	ND	94 %
MW-3	0.40	ND	94 %

QC Sample Report - EPA 8015M Diesel

Matrix: Water

Batch #: 8015DW1680

Batch Accuracy Results

Sample ID: Laboratory Cont	trol Sample)		
Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	0.8	81	70 - 130	Pass

Analytic	al Not	es:		
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	*			
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Batch Precision Results

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate

Analytical Notes:	
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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI

Project: Caltrans: 6th & Castro

Job No.: 15151 Matrix: Water Analyst: NBP Date Sampled: 07/02/99

Date Received: 07/07/99

Date Analyzed: 07/08/99

Batch Number: 8015GW2295

	Detection Limit	Petroleum Hydrocarbons as Gasoline	
Sample ID	mg/L	mg/L	
Method Blank	0.5	ND	
MW-1	0.5	ND	
MW-2	0.5	26	
MW-3	0.5	ND	

QC Sample Report - EPA 8015M Gasoline

Matrix: Water

Batch #: 8015GW2295

Batch Accuracy Results

Gasoline	10.0	93	70 - 130	Pass
Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Sample ID: Laboratory Cont	rol Sample	8		

Analytic	al Note	es:		
			-	
		•		

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.26	9.72	5%	25%	Pass

F	Analytic	al Note	es:		
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1					
1					
ı					

MS: Matrix Spike Sample MSD: Matrix Spike Duplicate



EPA 8260 - Volatile Organics with Oxygenates

Client:

PSI

Project:

Caltrans: 6th & Castro

Job No.: Matrix:

15151

Analyst:

Water **JMR**

Date Sampled: 07/02/99

Date Received: 07/07/99

Date Analyzed: 07/09/99

Batch Number: 8260W1770

	Sample ID:	Blank	MW-1	MW-3	
Compounds	DL	μg/L	μg/L	μ g/ L	
Acetone	50	ND	ND	ND	
tert-Arnyl Methyl Ether (TAM	E) 5.0	ND	ND	ND	
Benzene	0.5	ND	ND	ND	
Bromobenzene	1.0	ND	ND	ND	
Bromochloromethane	1.0	ND	ND	ND	-
Bromodichloromethane	0.5	ND	ND	ND	
Bromoform	0.5	ND	ND	ND	
Bromomethane	0.5	ND	ND	ND	
tert-Butanol (TBA)	50	ND	ND	ND	
2-Butanone (MEK)	10	ND	ND	ND	
n-Butylbenzene	0.5	ND	ND	ND	
sec-Butylbenzene	0.5	ND	ND	ND	
tert-Butylbenzene	0.5	ND	ND	ND ·	
Carbon disulfide	10	ND	ND	ND	
Carbon tetrachloride	0.5	ND	ND	ND	
Chlorobenzene	0.5	ND	ND	ND	
Chloroethane	0.5	ND	ND	ND	
Chloroform	0,5	ND	. ND	ND	
Chloromethane	0.5	ND	ND	ND	
2-Chlorataluene	0.5	ND	ND	ND	
4-Chlorotoluene	0.5	ND	ND	ND	
Dibromochloromethane	0.5	ND	ND	ND	
1,2-Dibromoethane	0.5	ND	ND	ND	
1,2-Dibromo-3-chloropropar	ne 10	ND	ND	ND	
Dibromomethane	0.5	ND	ND	ND	
1,2-Dichlorobenzene	0.5	ND	ND	ND	
1,3-Dichlorobenzene	0.5	ND	ND	ND	
1,4-Dichlorobenzene	0.5	ND	ND	ND	
Dichlorodifluoromethane	0.5	ND	ND	ND	
1,1-Dichloroethane	0.5	ND	ND	ND	
1,2-Dichloroethane	0.5	ND	ND	ND	
1,1-Dichloroethene	0.5	ND	ND	ND	
cis-1,2-Dichloroethene	0.5	ND	ND	ND	•
trans-1,2-Dichloroethene	0.5	ND	ND	ND	
and a second control of the control	in the second control of the control		Strategick and a section of the second of the		

ND

ND

ND

ND

ND

ND

ND

ND

0.5

0.5

0.5

0.5

1,2-Dichloropropane 1,3-Dichloropropane

2,2-Dichloropropane

1,1-Dichloropropene

ND

ND

ND

ND

(800) 798-9336

EPA 8260 - Volatile Organics with Oxygenates

Client:

PSI

Project:

Caltrans: 6th & Castro

Job No.:

15151 Water

Matrix: Analyst:

JMR

Date Sampled:

Date Received:

Date Analyzed:

Batch Number:

07/07/99 07/09/99

07/02/99

8260W1770

saten Number.	OZOUVV I
2 °	

	Sample ID:	Blank	MW-1	MW-3	
Compounds	DL	μg/L	μg/L	μg/L	
cis-1,3-Dichloropropene	0.5	ND	ND	ND	
trans-1,3-Dichloropropene	0.5	ND -	ND	ND	
Diisopropyl Ether (DIPE)	5.0	ND	ND	ND	
Ethylbenzene	0,5	ND	NĎ	ND	
Ethyl tert-Butyl Ether (EtBE)	5.0	ND	ND	ND	
Hexachlorobutadiene	0.5	ND	ND	ND	
2-Hexanone	10	ND	ND	ND	
Isopropylbenzene	0.5	ND	ND .	ND	
p-Isopropyltoiuene	0.5	ND -	ND	ND	
Methylene chloride	50	ND	ND	ND	
4-Methyl-2-pentanone	5.0	ND	ND	ND	
Methyl-tert-butyl ether (MtBl	£)1.0	ND	ND	ND	
Napthalene	0.5	ND	ND	ND	
n-Propylbenzene	0.5	ND	ND 1	ND	
Styrene	0.5	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	
Tetrachloroethene	0.5	ND	ND	ND	
Toluene	0.5	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	ND ·	ND	ND	
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	
1,1,1-Trichloroethane	0.5	ND	ND	ND	
1,1,2-Trichloroethane	0.5	ND	ND	ND	
Trichloroethene	0.5	ND	ND	ND	
1,2,3-Trichloropropane	0.5	ND	ND	ND	
Trichlorofluoromethane	0:5	ND	ND	ND	
Trichlorotrifluoroethane	5.0	ND	ND	ND	
1,2,4-Trimethylbenzene	0,5	ND	ND	ND	
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	
Vinyl chloride	0.5	. ND	ND	ND	
Xylenes (total)	1.5	ND	ND	ND	

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	MW-1	MW-3	
Dibromofluoromethane	107	109	103	가 가를 잃었다. 한국가 발표를 하고 있는 것이다. 중국의 대표되다 그 사람들은 기를 하고 있다.
Toluene-d8	100	100	97	
Bromofluorobenzene	94	97	96	



EPA 8260 - Volatile Organics with Oxygenates

Client:

PSI

Project:

Caltrans: 6th & Castro

Job No.: Matrix:

15151 Water

JMR

Analyst:

Date Sampled: 07/02/99 Date Received: 07/07/99

Date Analyzed: 07/09/99

Batch Number: 8260W1770

s	ample ID:	MW-2	
Compounds	DL	μg/L	
Acetone	2500	ND	
tert-Amyl Methyl Ether (TAME		ND	533
Benzene	25	780	en.e.pa;
Bromobenzene	50	ND	
Bromochloromethane	50	ND	20 20 20
Bromodichloromethane	25	ND	
Bromoform	25	ND	1 110
Bromomethane	25	ND	204
tert-Butanol (TBA)	2500	ND -	
2-Butanone (MEK)	500	ND	No.
n-Butylbenzene	25	· ND	
sec-Butylbenzene	25	ND	
tert-Butylbenzene	25	ND	.1 .21
Carbon disulfide	500	ND	
Carbon tetrachloride	25	ND	were steel
Chlorobenzene	25	ND	
Chloroethane	25	ND	
Chloroform	25	ND	
Chloromethane	25	ND	
2-Chlorotoluene	25	ND	
4-Chlorotoluene	25	ND	: :: .:
Dibromochloromethane	25	ND	
1,2-Dibromoethane	25	ND	w. see
1,2-Dibromo-3-chloropropane		ND	94
Dibromomethane	25	ND	
1,2-Dichlorobenzene	25	ND	
1,3-Dichlorobenzene	25	ND	
1,4-Dichlorobenzene	25	ND	. 1113
Dichlorodifluoromethane	25	ND	
1,1-Dichloroethane	25	ND	
1,2-Dichloroethane	25	160	e e
1,1-Dichloroethene	25		
cis-1,2-Dichloroethene	25	ND	
trans-1,2-Dichloroethene	25	ND	r "À
1,2-Dichloropropane	25	. ND	
1,3-Dichloropropane	25	ND	
2,2-Dichloropropane	25	ND	
1,1-Dichloropropene	25	ND	

(800) 798-9336

EPA 8260 - Volatile Organics with Oxygenates

Client;

PSI

Project:

Caltrans: 6th & Castro

Job No.:

15151

Matrix: Analyst: Water JMR Date Sampled:

Date Received:

Date Analyzed:

Batch Number:

07/02/99 07/07/99 07/09/99

8260W1770

	Sample IĎ:	MW-2	
Compounds	DL	μg/L	
cis-1,3-Dichloropropene	25	ND	
trans-1,3-Dichloropropene	25	ND	
Diisopropyl Ether (DIPE)	250	ND	
Ethylbenzene	25	1,300	
Ethyl tert-Butyl Ether (EtBE)	250	ND	
Hexachlorobutadiene	25	ND:	
2-Hexanone	500	ND -	
Isopropylbenzene	25	60	
p-Isopropyltoluene	25	ND	
Methylene chloride	500	ND	
4-Methyl-2-pentanone	250	ND	
Methyl-tert-butyl ether (MtBE) 50	ND	
Napthalene	25	590	
n-Propylbenzene	25.	200	
Styrene	25	ND	
1,1,1,2-Tetrachloroethane	25	ND	
1,1,2,2-Tetrachioroethane	50	ND	
Tetrachloroethene	25	ND	
Toluene	25	4,200	
1,2,3-Trichlorobenzene	25	ND	
1,2,4-Trichlorobenzene	25	ND	
1,1,1-Trichloroethane	25	ND	
1,1,2-Trichloroethane	25	ND	The second secon
Trichloroethene	25	ND	
1,2,3-Trichloropropane	25	ND	ing a pagamananan pagamananan ang mga pagamanan kan ang mga pagamanan kan ang mga pagamanan kan ang mga pagama Bangangan pagamananan kan ang mga pagamanan kan ang mga pagamanan kan ang mga pagamanan kan ang mga pagamanan
Trichlorofluoromethane	25	ND	
Trichlorotrifluoroethane	250	ND	entropy and include the control of the property of the books of the control of th
1,2,4-Trimethylbenzene	25	1,400	
1,3,5-Trimethylbenzene	25	420	and a second and a second and a second as a second as a second as a second as a second as a second as a second
Vinyl chloride	25	ND	
Xylenes (total)	75	5,000	

Surrogates (% recovery) Limits: 80 - 130

Surrogates (% re	covery) Limits. 60 - 130
	Sample ID: MW-2
Dibromofluorometh	ane 103
Toluene-d8	95
Bromofluorobenzen	e 200 (190 (190 (190 (190 (190 (190 (190 (1

Matrix: Water

Batch #: 8260W1770

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration μg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20	107	59 - 172	Pass
Benzene	20	113	66 - 142	Pass
Trichloroethene	20	112	71 - 137	Pass
Toluene	20	107	59 - 139	Pass
Chlorobenzene	20	115	60 - 133	Pass

Analytic	al Notes	:	
,			
		٠	

Batch Precision Results

MS/MSD Sample ID: Laborotory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	21.4	21.9	2%	22%	Pass
Benzene	22.7	22.4	1%	21%	Pass
Trichloroethene	22.3	22.4	0%	24%	Pass
Toluene	21.7	21.8	0%	21%	Pass
Chlorobenzene	23.1	22.1	4%	21%	Pass

MS:	Matrix	Spike :	Sample	
MSE): Matri	x Spike	Duplica	te

Analytical Notes:	
	•
•	
	. *

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Centrum Job # 15/5/

											Analy	ses	Requ	estec	1				
Project No.: Project Mana PRA Silient Name Company)	96034 ager: VK POSS PSI		Project No Cq Phone: 5(0 7 Address:	1tra 85-11 1320	ns 6th & ca Fax: 11 510785-1 U.WINTON AVE 14RD, CA 94545		9 8240 8010 524.2	ides PCBs Pest/PCB	8015M: (Diesel) Fuel Screen	8015M(Gasoline) 8020 Gas/BTEX	£	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA		pH TDS 1SS Conductivity COD	NOT TO			Turn-around time 24 Hr. RUSH* 48 Hr. RUSH* Normal TAT Requires prior approval, additional charges apply
Centrum ID Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS(EZG)	8080: Pesticides	BO15M:(Qi	8015M Gas	418.1 (TRPH)	Semivolatile	Metals: TT	Lead Only	Flashpoint		acusanor oth		Remarks/ Special Instructions
1	MW-1	7/2/99	1110	420	6th + CASTRO	9	X		X,	X			_/	X		X		_	
2	mw-2		1150				X		ΧĮ.	X		_	.	X	\perp	_ >			<u></u>
	mw-3		1020	Ţ		+	X			×				X	\perp				
												_							
														\perp					
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Λ I'	y: (Sampler's Signature) MERITT	<u> </u>	Date 7/6/99	1700	Relinquished by:		Date		Time		To be	com	pleted	by lat	coratory	pers	onnel:		Sample Disposat
Received by: Date Time					Received by:				Time		Samples chilled? Custody seals?								☐ Client will pick up
he delivery	of samples and the signat	ure on this	chain of cus	.istody form	Relinquished by:		Date	-	Time								s □ No		☐ Return to client
			سامر اسمنفار بالم		Received for Laboratory by: BANALY TICAL ME	_	Date 7/7/7	ig.	Time 9 : 3	80	□ Co	ourier	ں <u>۔</u> اے:A	PS/Fei	dEX D] Han	d carried		☐ Lab disposal fee \$5
aboratory i	Notes: REPORT N FILTER	LEAD	ETECT Preson	AT L TO P	ANALYTICAL ME INGLYSIS	THOO O	ET	EC	TI	01	JL	II	MΙ	Т.		Ţ			Sample Locator No



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client:

PSI

1320 W. Winton Ave.

Hayward, CA 94545

Date Sampled:

05/20/99

Date Received:

05/21/99

Job Number:

14928A

Project: Caltrans: 6th/Castro

CASE NARRATIVE

The following information applies to samples which were received on 05/21/99:

The samples were received at the laboratory chilled and sample containers were intact.

The Moisture Content, Soil Porosity, and Total Organic Carbon analyses were subcontracted to Core Laboratories, Bakersfield, CA. The original report is attached to, but is not part of, this report.

This report is an addendum to Centrum Job #14928 and contains data not included in the original report. The results reported previously have not been changed. The date of issue for this addendum is 07/15/99.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Robert R. Clark, Ph.D. Laboratory Director

ELAP # 1184

DL: Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected — The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.



STLC Lead By ICP

PSI Client:

Project: Caltrans: 6th/Castro

Job No.: Matrix:

14928A STLC Leachate*

RLB

Analyst:

Date Sampled:

05/20/99

Date Received:

05/21/99

Date Extracted: Date Analyzed:

07/07/99 07/09-12/99

Batch Number: 6010W1260

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	2.5	ND
OAK7-0.15	2.5	5.0
OAK7-0,30	2.5	4.9
OAK9-0.15	2.5	4.6
OAK9-0.30	2.5	16
OAK11-0.15	2.5	38
OAK8-0.30	2.5	8.0
OAK8-0.90	2.5	22
		- Francis Formandado de SES (Mail De Milloyer) - Francis de SES (SES FILE)
		signed by two versions are supported by each first line and the second
		and the control of th
		The second second control of the second seco
		an in which is a second of the Cartier and a little of the control

^{*} Sample was prepared by CAC Title 22 Method 66700 (STLC).

QC Sample Report - Metals

Matrix: Water

Batch #: 6010W1260

MSD: Matrix Spike Duplicate

Batch Accuracy Results

Sample ID: Initial Calibration	Verification	on Standar	<u>d</u>	
Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	101.9	75 - 125	Pass

	Analytical No	otes:	
	<u></u>		
ļ	-		

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Initial	Calibration	<u>Verificat</u>	ion Stan	dard	
Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	1.019	1.052	3%	20%	Pass

Compound	Spil	Spil	P. Ref	ag R	- P		
Lead	1.019	1.052	3%	20%	Pass		
MS: Matrix Spike Sample					•		



PETROLEUM SERVICES

Marilu Escher Centrum Analytical Laboratories, Inc. 290 Tennessee Street Redlands, CA 92373 July 12, 1999

Subject: Transmittal of Geotechnical Analysis Results

Project No. : 14928

Core Lab File No.: 57111-99134

Dear Ms Escher:

Soil samples were submitted to our Bakersfield laboratory for geotechnical and chemical testing. Moisture content and total porosity were the requested geotechnical analyses. Chemical tests included total organic carbon content. Accompanying this letter, please find the results of this study.

Moisture content was determined using standard ASTM methods, D-2216. Total porosities were measured and calculated as described in API RP-40, <u>API Recommended Practice for Core-Analysis Procedure</u>, 1960. Total organic carbon contents were determined by our Anaheim ACD Lab using EPA 9060 (SM 5310 B).

We appreciate this opportunity to be of service to you. Should you have any questions, or if we may be of further help in the future, please do not hesitate to contact us.

Very truly yours,

Jupy Smith, NW

Jeffry L. Smith

Laboratory Supervisor - Rock Properties

JLS:nw

1 original report: Addressee



Centrum Analytical Labs, Inc.

C.L. File No. : 57111-99134

CalTrans: 6th / Castro Project No.: 14928

Sample		Site	Moisture	Total	TOC	Description	
ID	Date	Time	Location	Content	Porosity		·
				%	%	ppm	
OAK11-1.5	5/20/99	_	14928-25	22.7	37.6	2250	Gray vfgr v silty v clayey sand



ANALYTICAL REPORT

JOB NUMBER: 991226

Prepared For:

Core Laboratories 3430 Unicorn Road Bakersfield, CA 93308

Attention: Jeff Smith

Date: 07/08/1999

Signature

Name: Tim Scott

Title: Laboratory Manager

Date

1250 E. Gene Autry Way

Anaheim, CA 92805

PHONE: (714) 937-1094 FAX..: (714) 937-1170

C A. E. L. A. P. 1174 L. A. C. S. D. 10146



Job Number.: 991226

Customer...: Core Laboratories Attn.....: Jeff Smith

CORE LABORATORIES

SAMPLE INFORMATION

Date: 07/08/1999

Project Number..... 97000255

Customer Project ID....: 14928

Project Description....: Refer to Customer Project I.D.

Laboratory Sample 10	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
991226-1	OAK11-1.5	Soil	05/20/1999	00:00	07/02/1999	10:30
				:		
		ļ				
						,



LABORATORY TEST RESULTS

Job Number: 991226

Date: 07/08/1999

ATTN: Jeff Smith

CUSTOMER: Core Laboratories PROJECT: 14928

Customer Sample ID: OAK11-1.5
Date Sampled.....: 05/20/1999
Time Sampled.....: 00:00
Sample Matrix....: Soil

Laboratory Sample ID: 991226-1
Date Received.....: 07/02/1999

Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SM 5310 B	Organic Carbon, Total (TOC), Solid	2250	100.0	mg/Kg	07/06/99	gwd
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QUALITY CONTROL RESULTS

Job Number.: 991226

Report Date.: 07/08/1999

CUSTOMER: Core Laboratories

PROJECT: Refer to Customer Project I.D.

ATTN: Jeff Smith

Met.	hod Descr	: SM iption.: Tot	5310 B al Organic Carl anic Carbon, Ti	bon otal (TOE)					it: gwd ode,: TOC	
QC -	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result *	Limits	F Date	Time
LCS LCS MB		E80379 E80379	1083 1019 5.01	1083	1000 1000		108 102	90-110 90-110	07/06/1999 07/06/1999 07/06/1999	9 0000



ANALYTICAL SUMMARY REPORT

Job Number: 991226

Report Date: 07/08/19

CUSTOMER: Core Laboratories

PROJECT: 14928

ATTN: Jeff Smith

SATCH 7081	ANALYTICAL METHOD SM 5310 B	DESCRIPTION	Total Orga	nic Carbon	ANA	LYST gwd
Lab Sample ID	Client Sample Identification	Sample Matrix	Test Matrix	Sample Date Time	Analysis Date Time	Dil/Corr. Factor
991226-1	OAK11-1.5	Soil	Solid	05/20/99 0000	07/06/99 0000	1



QUALITY ASSURANCE FOOTER

METHOD REFERENCES

- (1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
- (2) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1995
- (3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
- (4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136) and amendments
- (5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
- (6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
- (7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance. The date and time of analysis indicated on the report may not reflect the actual time of analysis for QC samples. Data reported in the QC report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis unless otherwise indicated. Unless otherwise indicated, volatiles by gas chromatography (GC) are reported from a single column. Volatiles analyses by GC on low level soils are conducted at room temperature. TCLP extractions are performed at sample amounts, approved by the State of California.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA	= Not analyzed	N.I. = Not Ignitable
N/A	= Not applicable	S.I. = Sustains Ignition

N/A = Not applicable S.I. = Sustains Ignition

ug/L = Micrograms per liter I(NS) = Ignites, but does not Sustain Ignition

mg/L = Milligrams per liter RPD = Relative Percent Difference

ND = Not detected at a value greater than the reporting limit

NC = Not calculable due to values lower than the detection limit

(a) = Surrogate recoveries were outside QC limits to due matrix effects.
 (b) = Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate.

(c) = Matrix spike recoveries were outside QC limits due to matrix effects.

(d) = Relative Percent Difference (RPD) for duplicate analysis outside QC limits due to actual differences in the sample matrix.

(e) = The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.

(f) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.

(9) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.

(h) = High dilution due to matrix effects

QC SAMPLE IDENTIFICATIONS

 M8 = Method Blank
 SB = Storage Blank

 R8 = Reagent Blank
 MS = Matrix Spike

 LGB = Initial Salibertian Blank

ICB = Initial Calibration Blank MSD = Matrix Spike Dupl CCB = Continuing Calibration Blank MD = Matrix Duplicate

CS = Calibration Standard ICV = Initial Calibration Verification

CCV = Continuing Calibration
Verification

MS = Matrix Spike
MSD = Matrix Spike Duplicate
MD = Matrix Duplicate
BS = Blank Spike
SS = Surrogate Spike
LCS = Laboratory Control

Standard

RS = Reference Standard

SUBCONTRACTED LABORATORY LOCATIONS

Core Laboratories: Aurora, Colorado *Ats Casper, Wyoming Carson, California *CA *CP Corpus Christi, Texas *CC Edison, New Jersey *ED Houston, Texas (Env) *HE Houston, Texas (Pet) *HP Indianapolis, Indiana *IN Lake Charles, Louisiana *LC Valparaiso, Indiana *VP Bakersfield, California *BK

1250 Gene Autry Way Autry Way Anaheim, CA 92805 (714) 937-1094 /u/matt/logs_n_forms/footer.form



	VVIII				ILO
rpjsckl		Job Sample Receipt Checklist Report 07/02/1999			v2
Job Number Project Numbe Customer		ion.: 57218 Customer Job ID: ct Description.: Refer to Customer Project I.D s Contact.: Jeff Smit). :h	Job Check List Date.: Project Manager:	07/02/1999 tas
Questions ?		(Y/N) Comments			
Chain-of-Cust	ody Present?	Y			
If "yes",	completed properly?	Y			
Custody seal	on shipping contained	r? N			
If "yes",	custody seal intact?.				
Custody seals	on sample containers	s?N			
lf "yes",	custody seal intact?.	•••••			
Samples chill	ed?	Y			
Temperature o	f cooler acceptable?	(4 deg C +/- 2). Y			
Temperature m	easured from temperat	ture blank?			
Samples recei	ved intact (good conc	dition)? Y			
Volatile samp	les acceptable? (no h	neadspace)			
Correct conta	iners used?				
Adequate samp	te votume provided?	Y			
Samples prese	rved correctly?	Y			
Samples receiv	ved within holding-ti	me? Y			
Agreement bety	ween COC and sample l	abels?Y			
Open cooler ra	adioactive screen at	or below bkgrd?.			
Additional	• • • • • • • • • • • • • • • • • • • •				
Comments		······································			
Sample Custodi	ian Signature/Date				

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Chain of Custody Record

Centrum Job # 14928

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Project No.: <i>T</i>	75-96-03	• (Project N	ame:	. 1+4/			gg		*				ۄ			3/~		Turn-around time
Project Man	75-9603 ager: ~K Poss	7	Phone:	Hom	5: 6+h/ Cas	+10	1	Pest/PCB	, ts			l	RCR4	Conductivity COD	Į į	1/600	ر اق	5	☐ 24 Hr. RUSH*
roject ivian	ager. 12 - c		(5/0)		35-111 (510)		1	a a		H		5 0	ž	≩	Ö	-	8	ol v	D 48 Hr BUSH*
Client Name		1) 78	35-111 (310)	185-1172	1	8		l l			<u>유</u>	19	<u>#</u>		2 /	リ レ	□ Normal TAT
Company)	PSI		1320	W.	Winton Ave, 4	aymord	8260 824	1 K	4	E P		827	§	Š	Lond		1	S F K	* Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample	Site location	Containers: # and type	GCMS: 8260	8080; Pesticides PCBs	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles: 8270	Metals: TTLC(CAM)	pH TDS TSS	Flashpoint Fluoride Hex Chrome	Tatel	2 20	_ W	Remarks/ Special Instructions
1	OAK7-0,15	5/20/99	730	S	•		X		X	X						\geq	\bigcirc	Ø	STLC Ph
Z	- 0.30		735	1	1													8	7
3	-0.90		740				\coprod			\coprod						Ц	\coprod		
4	- 1.50		745				Ц		Щ	Ш						Ш	\coprod		
5	- 3,0		750	1,			\prod			Ц						<u> </u>	$\perp \!\!\! \perp$	I	
ر.	- 4,5		755	<u> </u>			Ц		Ц_							\coprod	\coprod	ļ	
7	WOAK-7		810	W			\coprod	ļ						_		\coprod	\coprod		
8	OAK9-0.15		830	S			\coprod	ļ	\prod						\perp	\coprod	\prod	(<u>x</u>	STL (Pb
9	- 0.30	d)	835						11				\perp	_	_	\prod	11,	(6)	+
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he delivery	of samples and the signatu	ure on this	chain of cus	stody form	Relinquished by:	· · · · · · · · · · · · · · · · · · ·	Date		Time		1	•	contain			Yes		٠,	☐ Return to client
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Centrum Analytical Laboratories, Inc.

Centrum Job # / 4928

Page 2 of 4

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Chain of Custody Record

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Project No.:	575-90030 nager: mlc Poss	-/	Project N	ame: ←~~~s	: 6th/ cast 10.		ન	8		ă			 4		8	활	(010	\$		Turn-around time
Project Mar	nager:	·	Phone:		Fax:		1	Pest/PCB	9				RCRA		D Z	Ě	73		I 14	☐ 24 Hr. RUSH*
1-10	mle Poss						1					625	g.		養	ě	.~] `	1 2	☐ 48 Hr. RUSH*
Client Name (Company)	PST		Address:	-				des PCBs	Ę	Aline de		8270	(CAM)		S Conductivity COD	luoride	1000	11064	Kemark	Normal TAT Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	1	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles: 8270	Metals: TTLC(CAM)	Lead Only	PH TDS TSS	Flashpoint Fluoride Hex Chrome	Total	1	3)	Remarks/ Special Instructions
11	OAK9-1.50	5/20/	845	5		:	X		X	X							\bigvee	X		
12	- 3.0		850														Ī			
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14	WOAK-93	. }	905	W																(m & 1
15	OAK 10-0.15		1000	S															(Ŝ)	STLE PB
- 16	· - 0.30		1005									_					\perp		Ø)	\V-
17	- 0.90		1010							\perp										
18	- 1.50		1015																	
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Laboratory N	Notes:				/		•			٠										Sample Locator No.
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Centrum Job#

290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Analyses Requested Project No.: Project Name: 000 Turn-around time Hex Chrome RCRA 40 Project Manager 24 Hr. RUSH* Conductivity 625 문 ☐ 48 Hr. RUSH* 1290 Client Name: Address: 8270 Flashpoint Fluoride □ Normal TAT Metals: TTLC(CAM) PSI (Company) Requires prior approval. 8080: Pesticides 8015M: Gasofine additional charges apply 155 418.1 (TRPH) Semivolatiles: Lead Only Date Sample SOL HO Time Sample ID Centrum ID Containers: 8015M: GCMS: .Remarks/ Site location (Lab use only) (As it should appear on report) sampled sampled matrix # and type Special Instructions 5/20/2 WOAK-10 21 1035 OAK 11-0.15 22 STLC Pb 1100 - 0.30 28 1165 24 - 0.90 1110 TOC : PEROSITY! -1.50 25 1115 Moisture Content 26 - 3.0 1120 21 - 4.5 1125 WOAK-11 28 W 1150 24 1205 STLC PL 30 1210 Date 3/201 Relinquished by: (Sampler's Signature) Relinguished by: Date Time To be completed by laboratory personnel: Sample Disposal 1700 Received by: Received by: Date Time Samples chilled? ☐ Yes ☐ No ☐ Client will pick up Custody seals? Yes No Relinguished by: Date Time All sample containers intact? ☐ Yes ☐ No □ Return to client The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under Received for Laboratory by: ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried Date Time the Terms and Conditions set forth on the back hereof. Lab disposal fee \$5 9206 Laboratory Notes: Sample Locator No.

Centrum Job # 14928

290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

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Project No.:	75-96034		Project N	lame:	s: 6 th/ Cast	(0	4	ខ្ល		d			4		900	g	10,0		<u> </u>	Turn-around time
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Client Name (Company)	PSI		Address:				88	ides PC	F 3	oline 48	_	5: 8270 625	C(CAM)		S Conductivity	Fluoride Hex Chrome	100	h 77		□ Normal TAT Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	8080: Pesticides PCBs Pest/PCB	8015M: Diesel	8015M: Gasolin	418.1 (TRPH)	Semivolatiles:	Metals: TTLC(CAM) PP	Lead Only	PH TOS TSS	Flashpoint F	1012	T	20,	Remarks/ Special Instructions
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Received by:			Date	Time	Received by:		Date	,	Time			•			Yès [ès □					☐ Client will pick up
	of samples and the signatu				Relinquished by:		Date		Time		Alls	ample	cont	alners	intact	t? 🗆 '	Yes (⊃ No		☐ Return to client
	thorization to perform the disconditions set forth on the			ove under	Received for Laboratory by:	·	Date		Time 9:	ن		curier	ات	IPS/F	ed Ex	ΠН	and c	arried		☐ Lab disposal fee \$5
Laboratory N	lotes:																			Sample Locator No.
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LABORATORIES

Analysis Request and Chain of Custody Record

Lab Job No: _	17/000
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Page	01

3430 Unicorn Rd. Bakersfield, CA 93308 (805) 392-8600 Fax (805) 392-0824

Page	_2	

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CUSTOMER INFORMATION COMPANY: CONTROL SEND REPORT TO: Tolk Smith ADDRESS: COOR Lob - Rate 25 field;	PROJECT NAME/ BILL YO: ADDRESS:	NUMBER:	14928	ATION		NUMBER OF CONTAINERS	150					//			
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PHONE: 401 - 392-8600	FAX:		PO #					H					/	/ /	
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Centrum Analytical Laboratories, Inc.

Centrum Job #

290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336

FAX (909) 793-1559

Chain of Custody Record

www.centrus	m-labs.com		lab@centri	um-labs.com	m																-
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Project No: 1492 Project Mana Chent Name			904 Address: (Report and Bill	798-	6th/Castro Fax: -9336 969 193-19 O tennessce str CA 12373	555 Let	Diesel, Fuel Screen, Carbon Chain	уlr	BTEX/Mt8E ONLY	413.2	Content	8021B, 624, 524.2		PCBs. Pest/PCB		CAM), RCRA, PP	Conductivity	5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Turn-Around Time ☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH* → Normal TAT *Requires PRIOR approval, additional charges apply
Lubor	atories'		4-6-71				esel	Gas only	Ä	Ĥ.	췯	8260B.	8270C.	ficide		‡ 2	Ţ	Ŧ	4	,	Requested due date:
Centrum (D (Labluse only)	Sample tD (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Di	8015M: G	8021B: B7	418.1 (ТŖРН),		GCMS: 8	GCMS: 82	8080: Pesticides.		Metals: Tr	pH, TDS, TSS,	Flashpoint, Hex	Poles	100	Remarks/Special Instructions
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1) Relinquish	ed by: (Sampler's Signature)		Date: 0/25/44 Date:	Time: //:30	3) Relinquished by:		Date:		Time	:	To b	e com	pleted	by Lal	borate	ory pe	erson	nel:	•		Sample Disposal
2) Received	by:		Date:	Time:	4) Received by:		Date:		Time		Sam	iples c	hilled?	□ Ye	es 🗆	No	□ Fr	om Fi	ield		☐ Client will pick up
<u> </u>	****	·		<u> </u>	5) Relinquished by:	- resp	Date:	21	Time	7		•		□ Ye							Return to client
	of samples and the signature on uthorization to perform the analys											-		ners ir							☐ Lab disposal
	conditions set forth on the back h		1 80048 0110	ei ine	6) Received for Laboratory by:		Date: 7/2/	100	Time	20	ОС	ourier	Πu	PS/Fe	d Ex	ΠН	land (carrie	d		
Laboratory N	loles:				Maria Verge		· / /	*/1	-	-											Sample Locator No.

Centrum Job # 14919

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

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Project No.:	75-96034		Project N	ame:	: Gan/lada			8		¥	4			(0)	ě	2	7	3	1	Turn-around time
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	nager: n. k. Poss		5/0	785-	1111 (5/0) 785-	1652	9102	g.		14	100	l gg	ا ق	TOC (9060	Conductivity	Ö	(2+0) 6971	12	[□ 48 Hr. RUSH*
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(Company)	PSI					P. C.		8			2	8	3	0	Ö	piror	19		ا پر	
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Centrum ID	Sample ID	Date	Time	Sample	Site location	Containers:	(Q)	Per	<u> </u>	Ü		g	انق	à	TDS	Poir.	A	6010	<u>'</u> \	Remarks/
(Lab use only)	(As it should appear on report)	sampled	sampled	matrix	one reader!	# and type	GCMS	8080: Pesticides	8015M: Diesel	8015M; Gasofine 8000 CareTED	Î	Semivolatiles:	Metals: TTLC(CAM) PP RCRA		丟	Flashpoint Fluoride Hex Chrome	7	ē.	Moisture	Special Instructions
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Relinquished b	у: (Şampler's Signature)		Date /	Time	Relinquished by:		Date	Щ	Time	•	Н					L	Γ.			
-			3/19/gg	1700							Tob	e con	npiete	d by is	borat	ory po	erson	nel;		Sample Disposal
Received by:		<u>, </u>	Date	Time	Received by:		Date		Time		Sam	ples o	chilled	? <u>À</u> Ý	íos [J No				☐ Client will pick up
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· -	of samples and the signatu			•	Relinquished by:		Date		Time		Alls	ample	o conti	ainers	Intact	t? 🗆	Yes	□ No		☐ Return to client
1	uthorization to perform the nd Conditions set forth on the	he back her	reof.		Received for Laboratory by:	15	Date /	4/4	Time			ounter	721	IPS/Fe じょ/	ed Ex	□ H :/፡-s.	land c	arried		☐ Lab disposal fee \$5
Laboratory N	Notes: Includ	lı c	2× 4 80	martos	in 8260								•							Sample Locator No.
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290 TENNESSEE STREET REDLANDS, CA 92373

(909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Centrum Job # | 4 (1°)

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Project No.:	75-96034	•	Project N	ame:	: 6th/Castro		2	Τ		Gas/BTEX	Parasity				g g	13		1	Turn-around time
roject Mana	ager:		Phone:		Fax:		52	185	5	Sas/B	Por		S,	02 (9060)	8	240/1771	3 3		☐ 24 Hr. RU\$H*
							9	k	Fuel Screen	8020		83	8) §	E	17	: }	ق ق	☐ 48 Hr. RUSH*
Client Name Company)	PSI		Address:				8240 6010 524.2	¥ §		Se 8	50.1	8270	CAM			111	7,4,4	7	Normal TAT *Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers:	GCMS: 8260	8080: Pesticides PCDs PestiPCB	8015M: Diesel	8015M: Gasoline	ANS. P(EEPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	PH TOS TSS	Flashpoint Fluoride Hex Chrome	FDA	-l ^	A O. A.	Remarks/ Special Instructions
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}elinquished b	y; (Sampler's Signature)		3/19/99	Time	Relinquished by:		Date		Tim	•	То	be co	mplete	d by labor	atory	persor	nnel:		Sample Disposal
Received by:			Date	Time	Received by:	1	Date	•	Tim	8	1			17) Yes ! □ Yes (1			☐ Client will pick up
The delivery of	of samples and the signatu	ire on this	chain of cus	stody form	Relinquished by:		Date	.	Tim	0	1	•		alners inta] Yes		,	Return to client
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Laboratory N	Votes:										-								Sample Locator No.
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Centrum Analytical Laboratories, Inc.

Centrum Job #

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559 Chain of Custody Record

Page 3 of 5

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Project No.:	75 - 9603	4	Project Na	ame:	G+h/Costro	â			80		瓦	Porosi		«	3	cop	Ę		-		Turn-around time
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C. I.I.			l A alaba			1.5.	a la company		g	Fuel Screen	8020		\$29	8	\preceq	Conductivity	ŝ		2	40	☐ 48 Hr. RUSH*
Cilent Name (Company)	PSI		Address:			المتعوان .	7 - N		1 .		Gasoline 8	\ <u>\</u>	5: 8270	CAM			Juoride	1664	(701al	٦	Requires prior approval, additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location		Containers: #and type	GCMS: 8260	3030: Pecticides	8015M: Diesel	8015M: Gas	4- Tenterit	Semivolatiles: 8270	Metals: TTLC(CAM) PP RCRA	()	pH TDS TSS	Flashpoint Fluoride Hex Chrome	LPA	500	Master	Remarks/ Special Instructions
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Received by:	3	→.	Date	Time	Received by:			Date		Time		ł	•		γ <mark>χ</mark> ίγ •Υ□						☐ Client will plok up
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	uthorization to perform the nd Conditions set forth on t			ove under	Received for Laboratory by	, LO	d a commence of the	Doto	Ir	Time				-	IPS/Fe			land o	carried	l	☐ Lab disposal fee \$5
Laboratory	Notes:																				Sample Locator No.
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290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559 Chain of Custody Record

Page 4 of 5

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Project No.:	75- 9603	.4	Project Ni	ame:	: 6th/Castro		1	868		X			\$		8	ome	(5	3	 	Turn-around time
Project Man	ager:	<u> </u>	Phone:		Fax:		2 0 0	POBs Pest/POB	1	3		625	PP RCRA		Loctivity	Hex Ch	(ره ع	1/14		☐ 24 Hr. RUSH* ☐ 48 Hr. RUSH*
Client Name (Company)	PSI		Address:		,		92.40	1 1 1	143	oline 90	_ ₽	s: 8270	C(CAM)		SS Cond	Fluoride	199]	010 (70 to 1/2)		Normal TAT *Requires prior approval additional charges apply
Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	GCMS: 8260	-8080; Pecticides	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles:	Metals: TTLC(CAM)	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	5x0)1991 4d3	7/09		Remarks/ Special Instructions
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Received by:	١		Date	Time	Received by:		Date		Time		1		chilled seals?	· ·						C) Client will pick up
The delivery	of samples and the signati	ure on this	chain of cu	stody form	Relinquished by:	*	Date		Time	•	Alls	sampl	e conte	ilners	intaci	t7 🗆	Yes	□ No		☐ Return to client
constitutes a	uthorization to perform the ad Conditions set forth on t	analyses s	pecified ab	ove under	Received for Laboratory by:		Pay	fr	Time)/-			r ou				land o	carrie		☐ Lab disposal fee \$5
Laboratory I	Notes:					. `														Sample Locator No.
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Centrum Job#

290 TENNESSEE STREET REDLANDS, CA 92373 (909) 798-9336 • (800) 798-9336 FAX (909) 793-1559

Chain of Custody Record

Page_5_or_5

	4			76 78					Anal	yses	Req	ueste	ed _					
Project No.: 575 - 96034	Project Na	me: + sus	: 6th/ cast.	·	3	trPCB		Ĭ			RCRA		8	rome				Turn-around time
Project Manager:	Phone:	. •	Pax:		201	s Pes		I		525	97 78		ctivity	Õ	1	1		☐ 24 Hr. RUSH*
Client Name: (Company)	Address:		· · · · · · · · · · · · · · · · · · ·		9-24Z9-(ides PCB		oline 862	G	5: 8270 625	C(CAM)		TSS Conductivity COD	-luoride)	19		Normal TAT Requires prior approval, edditional charges apply
Centrum ID Sample ID Date (Lab use only) (As it should appear on report) sampled		Sample matrix	Site location	Containers: # and type	GCMS: 8260-5245-8010-123-2	8080: Pesticides PCBs Pest/PCB	8015M: DESE	8015M: Gasoline	418.1 (TRPH)	Semivolaties:	Metals: TTLC(CAM)	Lead Only	ST SOT HQ	Flashpoint Fluoride Hex Chrome	10/2	3		Remarks/ Special Instructions
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Relinquished by (Sampler's Signature)	3/14/29	Time /7co	Relinquished by:		Date		Time		Tob	e con	nplete	d by la	abora	tory p	erson	nel:		Sample Disposal
Received by:	Date	Time	Received by:	2	Date		Time		l			17 2 (1						Client will pick up
The delivery of samples and the signature on this	chain of cust	tody form	Relinquished by:		Date		Time		Alls	ample	cont	ainers	intac	:t? 🗆	Yes	□ No		☐ Return to client
constitutes authorization to perform the analyses the Terms and Conditions set forth on the back h	specified abo	ve under	Received for Laboratory by:	T_	Date 12.	/1.	Time	e1 <u>i</u> _				JPS/F				carried	1	☐ Lab disposal fee \$5
Laboratory Notes:						,												Sample Locator No.
				Î													·	

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY . CHEMICAL AND BIOLOGICAL ANALYSES

Client: PS

1320 W. Winton Ave.

Hayward, CA 94545

Date Sampled:

05/19/99

Date Received:

05/20/99

Job Number:

14919A

Project: Caltrans: 6th/Castro

CASE NARRATIVE

The following information applies to samples which were received on 05/20/99:

The samples were received at the laboratory chilled and sample containers were intact.

The Moisture Content, Soil Porosity, and Total Organic Carbon analyses were subcontracted to Core Laboratories, Bakersfield, CA. The original report is attached to, but is not part of, this report.

This report is an addendum to Centrum Job #14919 and contains data not included in the original report. The results reported previously have not been changed. The date of issue for this addendum is 07/15/99.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D. Laboratory Director

ELAP # 1184

DL: Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND: Not Detected - The compound was analyzed for but was not found to be present at or above the detection limit.

NA: Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.



STLC Lead By ICP

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919A

Matrix: STLC Leachate*

Analyst: RLB

Date Sampled: 05/19/99
Date Received: 05/20/99
Date Extracted: 07/07/99
Date Analyzed: 07/09/99
Batch Number: 6010W1260

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	2.5	ND
OAK3-0.15	2.5	ND
OAK4-0.15	2.5	48
OAK4-0.30	2.5	3.7
OAK4-0.90	2.5	3.0
OAK5-0.15	2.5	4.0
QAK5-0.30	2.5	20
OAK6-0.15	2.5	7.1

^{*} Sample was prepared by CAC Title 22 Method 66700 (STLC).

QC Sample Report - Metals

Matrix: Water

Lead

Batch #: 6010W1260

Batch Accuracy Results

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Sample ID: Initial Calibration Verification Standard

Compound 1.0 101.9 75 - 125 **Pass**

Anal	ytical	Note	es:		
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Batch Precision Results

MS/MSD Sample ID: Initial Calibration Verification Standard

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	1.019	1.052	.3%	20%	Pass

MS: Ma	trix Spike	Sample
MSD: M	latrix Spik	ce Duplicate

Analytical Notes:



TCLP Lead By ICP

Client: PSI

Project: Caltrans: 6th/Castro

Job No.: 14919A

Matrix: TCLP Leachate*

Analyst: RLB

Date Sampled: 05/19/99

Date Received: 05/20/99
Date Extracted: 07/08/99

Date Analyzed: 07/09/99
Batch Number: 6010W1259

Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	0.1	ND
OAK3-0.30	0.1	12
		satud Bernauda satu Calanta Berta Calanta Bultura Bultura Bertan di Arberta da Assa da Haran da Arberta di Arberta Berta da Berta da Berta da Berta da Berta da Berta da Berta da Berta da Berta da Berta da Berta de Berta de B
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		waka ninga ka 1888 ang katalong an inganang mang ang ang ang ang ang ang ang ang ang
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^{*} Sample was prepared by SW-846 Method 1311 (TCLP).

QC Sample Report - Metals

Matrix: Water

Batch #: 6010W1259

Batch Accuracy Results

Spike Concentration mg/L % Recovery LCS % Recovery Pass/Fail	Lead	1.0	99.84	75 - 125	Pass
	Compound		ecovery LC	ceptance Recovery	Pass/Fail

Analytical Notes:	•
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Batch Precision Results

MS/MSD Sample ID: 15150-11

Spike Sample Recovery mg/L
Recovery mg/L
Relative Percent
Difference (RPD)
Compound

RPD
Ass/Fail

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:



PETROLEUM SERVICES

Marilu Escher Centrum Analytical Laboratories, Inc. 290 Tennessee Street Redlands, CA 92373 July 12, 1999

Subject: Transmittal of Geotechnical Analysis Results

Project No. : 14919

Core Lab File No.: 57111-99133

Dear Ms Escher:

Soil samples were submitted to our Bakersfield laboratory for geotechnical and chemical testing. Moisture content and total porosity were the requested geotechnical analyses. Chemical tests included total organic carbon content. Accompanying this letter, please find the results of this study.

Moisture content was determined using standard ASTM methods, D-2216. Total porosities were measured and calculated as described in API RP-40, <u>API Recommended Practice for Core-Analysis Procedure</u>, 1960. Total organic carbon contents were determined by our Anaheim ACD Lab using EPA 9060 (SM 5310 B).

We appreciate this opportunity to be of service to you. Should you have any questions, or if we may be of further help in the future, please do not hesitate to contact us.

Very truly yours,

Just Smith NW

Jeffry L. Smith

Laboratory Supervisor - Rock Properties

JLS:nw

1 original report: Addressee



Centrum Analytical Labs, Inc.

C.L. File No.: 57111-99133

CalTrans: 6th / Castro Project No.: 14919

	Sample		Site	Moisture	Total	TOC	Description
ID	Date	Time	Location	Content	Porosity		•
	<u> </u>			%	%	ppm	
OAK1-1.5	5/19/99	1055	14919-11	13.4	29.6	9280	Gray vf-mgr silty sand
OAK3-1.5	5/19/99	1220	14919-18	11.1	32.7	1920	Gray vf-fgr silty sand



ANALYTICAL REPORT

JOB NUMBER: 991225

Prepared For:

Core Laboratories 3430 Unicorn Road Bakersfield, CA 93308

Attention: Jeff Smith

Date: 07/08/1999

Signature

Name: Tim Scott

Title: Laboratory Manager

PHONE: (714) 937-1094 FAX..: (714) 937-1170

1250 E. Gene Autry Way

Anaheim, CA 92805

C A. E. L A. P. 1174 L A. C. S. D. 10146



SAMPLE INFORMATION

Date: 07/08/1999

Job Number.: 991225

Customer...: Core Laboratories

Attn..... Jeff Smith

Project Number....: 97000255

Customer Project ID...: 14919

Project Description...: Refer to Customer Project I.D.

	Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
991225-2 OAK3-1.50 Soil 05/19/1999 12:20 07/02/1999 10	991225-1	OAK1-1.50	Soil	05/19/1999	10:55	07/02/1999	10:30
	991225-2	OAK3-1.50	Soil	05/19/1999	12:20	07/02/1999	10:30
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LABORATORY TEST RESULTS

Date: 07/08/1999 Job Number: 991225

NUSTOMER: Core Laboratories PROJECT: 14919 ATTN: Jeff Smith

Customer Sample ID: OAK1-1.50 Date Sampled....: 05/19/1999 Time Sampled....: 10:55 Sample Matrix...: Soil

Laboratory Sample ID: 991225-1
Date Received.....: 07/02/1999
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SM 5310 B	Organic Carbon, Total (TOC), Solid	9280	100.0	mg/Kg	07/06/99	gwd
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LABORATORY TEST RESULTS

Job Number: 991225

Date: 07/08/1999

CUSTOMER: Core Laboratories

PROJECT: 14919

ATTN: Jeff Smith

Customer Sample ID: OAK3-1.50 Date Sampled....: 05/19/1999 Time Sampled....: 12:20 Sample Matrix....: Soil

Laboratory Sample ID: 991225-2 Date Received....: 07/02/1999

Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TEC
SM 5310 B	Organic Carbon, Total (TOC), Solid	1920	100.0	mg/Kg	07/06/99	gwd
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QUALITY CONTROL RESULTS

Job Number.: 991225

Report Date.: 07/08/1999

USTOMER: Core Laboratories

PROJECT: Refer to Customer Project I.D.

ATTN: Jeff Smith

ar .	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result *	Limits	· -	vate	1 1 me
s		E80379	1083		1000		108	90-110		/06/1999	
ECS		E80379	1019	1083	1000		102	90-110		/06/1999	
MB			5.01						07	/06/1999	0000



Job Number: 991225

CORE LABORATORIES

ANALYTICAL

SUMMARY

REPORT

Report Date: 07/08/19

SUSTOMER: Core Laboratories

PROJECT: 14919

ATTN: Jeff Smith

BATCH 7081	ANALYTICAL METHOD SM 5310 B	DESCRIPTI	ON Total Orgi	anic Carbon	ANA	LYST gwd
ab Sample	Client	Sample	Test	Sample	Analysis	Dil/Corr.
D	Sample Identification	Matrix	Matrix	Date Time	Date Time	Factor
991225-1	OAK1-1.50	Soil	Solid	05/19/99 1055	07/06/99 0000	1 1
91225-2	OAK3-1.50	Soil	Solid	05/19/99 1220	07/06/99 0000	



QUALITY ASSURANCE FOOTER

METHOD REFERENCES

- (1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
- (2) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
- (3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
- (4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
- (5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
- (6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
- (7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance. The date and time of analysis indicated on the QC report may not reflect the actual time of analysis for QC samples. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis unless otherwise indicated. Unless otherwise indicated, volatiles by gas chromatography (GC) are reported from a single column. Volatiles analyses by GC on low level soils are conducted at room temperature. TCLP extractions are performed at sample amounts, approved by the State of California.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA	= Not analyzed	N.I.	= Not Ignitable
	= Not applicable	S.I.	= Sustains Ignition

I(NS) = Ignites, but does not Sustain Ignition ug/L = Micrograms per liter

RPD = Relative Percent Difference mg/L = Milligrams per liter

= Not detected at a value greater than the reporting limit

= Not calculable due to values lower than the detection limit

= Surrogate recoveries were outside acceptable ranges due to matrix effects.

= Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate. **(b)**

= Matrix spike recoveries were outside acceptable ranges due to matrix effects. (c)

*05

*06

= Relative Percent Difference (RPD) for duplicate analysis outside acceptance limits due to actual differences in (d) the sample matrix.

= The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures (e) above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.

= Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a (f) diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.

= Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a (g) gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.

= High dilution due to matrix effects (h)

Westcoast Analytical Services

Silliker Laboratories Group

Weck Laboratories

QC SAMPLE IDENTIFICATIONS		SUBCONTRACTED LABOR	ATORY LOCATIONS	
MB = Method Blank RB = Reagent Blank ICB = Initial Calibration Blank CCB = Continuing Calibration Blank CS = Calibration Standard ICV = Initial Calibration Verification CCV = Continuing Calibration	SB = Storage Blank SB = Matrix Spike SD = Matrix Spike Duplicate MD = Matrix Duplicate MS = Blank Spike SS = Surrogate Spike SS = Laboratory Control Standard SS = Reference Standard *01 *02 *03	Core Laboratories:		*AU *CA *CC *ED *HP *IN *LC *LB *VP *BK
Upstroast Analytical Services	. 17	1250 Gene Autry	Way Autry Way	

Anaheim, CA 92805

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(714) 937-1094



rpjsckl Job Sample Receipt Checklist Report V2 07/02/1999					
	cation.: 57218 Customer Job ID: roject Description.: Refer to Customer Project I.D. rtical Laboratories, Inc. Contact.: Marilou Es				
Questions ?	(Y/N) Comments				
Chain-of-Custody Present?	Y				
If "yes", completed properl	y? Y				
Custody seal on shipping conta	ainer? N				
If "yes", custody seal inta	act?				
Custody seals on sample contai	iners? N				
If "yes", custody seal into	act?				
Samples chilled?	Y				
Temperature of cooler acceptab	ble? (4 deg C +/- 2). Y				
Temperature measured from temp	perature blank?				
Samples received intact (good	condition)? Y				
Volatile samples acceptable? ((no headspace)				
Correct containers used?					
Adequate sample volume provide	ed? Y				
Samples preserved correctly?					
Samples received within holdin	ng-time? Y				
Agreement between COC and sam	ple labels?Y				
Open cooler radioactive screen	n at or below bkgrd?.				
Additional					
Comments					
Sample Custodian Signature/Da	te				