STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
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March 10, 1998

TOM PEACOCK
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Dear Mr. Peacock:

Accompanying this letter is a Hazardous Waste Site Investigation Report regarding a land parcel at 6th Street and Castro Street in the City of Oakland, and a land parcel at the corner of Foothill Boulevard and Mattox Road in the City of Hayward. During the site investigation we discovered contaminants within the soil and groundwater that could require monitoring and/or remediation. It is the desire of Caltrans to sell these parcels; however, we require further guidance from your office on how to proceed before we agree upon any potential sale of the parcels. In order to expedite your review, we are providing funds to compensate the review costs for each site. Attached with this letter are the following:

1) Site Investigation Report, International Technology Corporation, December 1996 - The report provides information regarding both the Hayward and Oakland sites. The report contains soils analyses, groundwater analyses, boring logs, and laboratory reports.

2) A check payable to the Alameda County Department of Environmental Health in the amount of $500 to used for review costs associated with the Hayward site.

3) A check payable to the Alameda County Department of Environmental Health in the amount of $500 to used for review costs associated with the Oakland site.

Previous documents that were sent to your office on July 1, 1997, that may facilitate your review include:

1) Site Investigation Report, Geocon Environmental, October 1995 - The report is a result of an initial site investigation of both parcels. The report contains soils analyses, historical background information, and a geophysical survey.

2) Fire District Permit, April 1979 - A copy of the permit for removal of underground tanks at the Hayward parcel.

3) Correspondence, Caltrans & Exxon, 1991 - Copies of letters between Caltrans and Exxon to confirm the removal of tanks at the Hayward parcel.

If you have any questions concerning these parcels or the information provided in this letter, please contact Michael Flake at (510) 286-5664.

Sincerely,

HARRY Y. YAHATA
District Director

By

for RON MORIGUCHI
District Office Chief
Office of Environmental Engineering

mf:MF

cc: S. Dondero - Caltrans HQ

AUG 1999

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

VACANT PARCEL
INTERSECTION OF MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA

prepared for

CALIFORNIA DEPARTMENT OF TRANSPORTATION
District 4
P.O. Box 23660
Oakland, California

prepared by

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Hayward, California 94545
(510) 785-1111

August 30, 1999
575-9G034

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

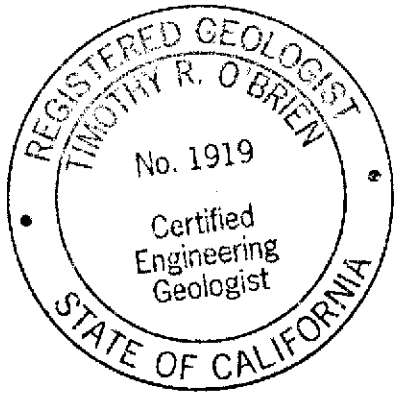
Information provided in this Site Investigation Report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Caltrans for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance 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 report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Frank R. Poss, R.E.A.
Senior Hydrogeologist

Timothy R. O'Brien RG/CEG/CHG
Senior Geologist

Scott A. Bowers
Staff Geologist



1. INTRODUCTION

Professional Service Industries, Inc. (PSI) has been 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 vacant parcel located at the southwest corner of Mattox Road and Foothill Boulevard in Hayward, California. The subject site location is presented in Figure 1.

The scope of work for this investigation included:

- Obtain drilling permits and notify Underground Service Alert,
- Drill ten soil borings to collect soil and groundwater samples,
- Excavate three trenches in areas where magnetic anomalies were identified,
- Perform chemical analyses on soil and groundwater samples; and
- Prepare a technical report describing the investigation and interpretation of the data generated.

1.1 SITE DESCRIPTION AND HISTORY

The subject site is an asphalt/gravel covered vacant lot measuring approximately 37 m by 49 m (120 feet by 160 feet). A reinforced concrete slab, where a structure was formerly located, lies in the center of the property to the western boundary. The site is relatively flat and is bound by a 2 m chain-link fence. The site is bordered by Mattox Road to the north, Foothill Boulevard to the east, a commercial building to the south, and a residential property to the west.

The site was formerly occupied by a service station. In 1995, at the request of Caltrans, Geocon Environmental Consultants conducted a subsurface investigation. Geocon drilled five soil borings, collecting soil and groundwater samples. Samples were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G), Total Petroleum Hydrocarbons as Diesel (TPH-D), Benzene, Toluene, Ethylbenzene, total Xylenes (BTEX), total lead, and Total Oil and Grease (TOG). Analysis of the soil samples identified elevated levels of total lead (up to 2,400 milligrams per kilogram [mg/kg]), and TOG (7,200 mg/kg) (Caltrans, 1999).

In 1995, Norcal Geophysical Consultants, Inc performed a geophysical survey on the property. The results of the survey identified three magnetic anomalies at the site. It was suspected that the anomalies represented Underground Storage Tanks (USTs) left in place at the site (Caltrans, 1999).

In 1996, IT Corporation conducted a subsurface investigation. Analysis of soil samples identified concentrations of total lead (92 mg/kg), and TOG (480 mg/kg) (Caltrans, 1999).

1.2 PROJECT OBJECTIVE

The objectives of the project are to determine the concentrations of selected potentially hazardous constituents in soil and groundwater, evaluate their potential impact to construction activities, and determine the source of the magnetic anomalies identified by Norcal in 1995. Analytical results from PSI's soil and groundwater investigation were examined with respect to regulatory requirements and guidelines.

2. SUBSURFACE INVESTIGATION

2.1 PRE-FIELD ACTIVITIES

Prior to initiation of field activities, PSI marked the boring and trenching locations in 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, and reviewed and signed by 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.

2.2 SOIL BORINGS

On June 1 and 2, 1999, ten soil borings (HAY1 through HAY10) were drilled at the site. The boring locations are presented on Figure 2. All borings were drilled using a Geoprobe 5400 direct-push sampling rig. Drilling services were provided by V & W Drilling of Rio Vista, California.

The borings were drilled using a 0.038 meter (1.5-inch) diameter core sampler fitted with a retractable tip and lined with acetate sleeves. Soil sampling was conducted in accordance with procedures described in Appendix A. Soil samples were collected from each boring at depths of 0.15, 0.3, 0.9, 1.5, 3, and 4.5 meters (0.5, 1, 3, 5, 10 and 15 feet) with the exception of borings HAY2 and HAY5 (refusals at 10 feet bgs), and HAY1 (refusal at 5 feet bgs). The total depth of borings are presented in Table 3. Borings were terminated when groundwater or refusal was encountered. Soil samples were not collected beneath first groundwater. The borings were grouted with neat cement to grade.

Soil borings were logged according to the "Soil and Rock Logging Classification Manual" prepared by the State of California, Department of Transportation. The logging classification manual is consistent with the Unified Soil Classification System. Boring logs are presented in Appendix B.

Soils observed during drilling activities were primarily silty clays and silty sands. Groundwater was encountered in only one boring (HAY3) at approximately 5.8 meters (19 feet) below ground surface (bgs).

A Photo-Ionization Detector (PID) was used to field screen soil samples for Volatile Organic Compounds (VOCs). No VOC concentrations were detected during sampling. PID readings were recorded on the boring logs.

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 analytical results are described in Section 4.

2.3 GRAB GROUNDWATER SAMPLING

A grab groundwater sample was collected from boring HAY3 only. The groundwater level in this boring stabilized at approximately 5.8 meters (19 feet) bgs. It was not possible to drill the remainder of the borings to depths sufficient to collect groundwater samples due to underlying bedrock material.

Figures 4 and 5 present cross sections of subsurface lithology and the groundwater encountered in boring HAY3. The grab groundwater sample was collected using disposable polyethylene tubing lowered through the drill stem. Groundwater samples were collected using positive displacement and a check valve. Groundwater sampling was conducted in accordance with the procedures described in Appendix A.

The grab groundwater sample was logged on a chain-of-custody record and transported to Centrum Analytical. The analytical results are described in Section 4.

2.4 EXPLORATORY TRENCHING

On June 1, 1999, eight exploratory trenches were excavated to determine the source of the magnetic anomalies identified by Norcal in 1995. Trenches were excavated using a John Deere 310 backhoe. Trench depths varied from five to seven feet bgs. Trench lengths ranged from 12 to 13 feet with widths of 4 to 4.5 feet. At least two trenches were dug at each magnetic anomaly.

The exploratory trenches in the areas of the magnetic anomalies did not reveal any evidence of Underground Storage Tanks (USTs). However, electrical conduit and small pieces of metallic debris were uncovered during the excavations. Though Norcal's discussion of the magnetic anomalies states that the low magnitude anomalies typically represent small USTs or large isolated metallic objects, the magnetometer used by Norcal in 1995 will detect any accumulation of ferrous objects (Norcal, 1999). The electrical

conduit and metallic piping debris unearthed from the excavations are likely the source of the magnetic anomalies.

3. 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. Soil and groundwater samples were analyzed by the following methods:

- EPA Method 1664 – Oil and Grease;
- EPA Method 8015 modified - Total Petroleum Hydrocarbons as Gasoline (TPH-G);
- EPA Method 8015 modified - Total Petroleum Hydrocarbons as Diesel (TPH-D);
- EPA Method 8260– Volatile Organic Compounds (VOCs);
- EPA Method 6010 for Total Lead; and
- EPA Method 7000 Waste Extraction Test.

Grab groundwater sample HAY3 was measured for the following parameters during its collection.

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

4. LABORATORY RESULTS

4.1 SOIL

A summary of the analytical results for soil samples is presented in Table 1. The analytical report is included in Appendix C. Figure 3 presents the vertical and horizontal extents of contaminants reported in samples collected in PSI's investigation.

Concentrations of oil and grease were detected in all of the soil samples. Oil and grease concentrations ranged from 10 to 30,000 mg/kg. A previous subsurface investigation conducted in 1995 reported oil and grease concentrations in 15 of 19 soil samples ranging from 50 to 7,200 mg/kg. Generally, oil and grease concentrations decreased with depth (Geocon, 1995). Based on the fact that oil and grease concentrations generally decrease with depth, the source of the oil and grease may be related to asphalt pavement at the site. Pavement of an area with asphalt is typically preceded with spraying the area with an oil sealant. The analytical results are consistent with a previous subsurface investigation conducted by Geocon in 1995.

TPH-G was detected in soil samples HAY1-1.5 (0.62 mg/kg), and HAY2-0.15 (0.51 mg/kg). These samples were collected at shallow depth along the eastern portion of the site. No other soil samples contained detectable concentrations of TPH-G.

TPH-D concentrations were detected in 52 of the 56 soil samples. Eleven soil samples contained TPH-D concentrations in excess of 100 mg/kg. The sample concentrations ranged from below the laboratory detection limit to 970 mg/kg. TPH-D concentrations at the site typically decrease with depth.

The VOCs ethylbenzene, naphthalene, 1,1,2,2-tetrachloroethane, 1,2,4-trimethylbenzene, and xylenes were detected in 16 of the 56 soil samples at concentrations ranging from 0.001 to 0.009 mg/kg.

Concentrations of ethylbenzene and xylenes were detected in only one boring (HAY7). Ethylbenzene concentrations were detected at the surface and 0.90 meter (three foot) samples.

Xylene concentrations were detected in the surface (0.006 mg/kg), 0.90 meter (0.034 mg/kg), and 3 meter (0.004 mg/kg) samples. The concentrations detected are below the Preliminary Remediation Goal (PRG) set by the US EPA of 210 mg/kg for industrial

soil. Likewise, site ethylbenzene concentrations are below the PRG for ethylbenzene in industrial soil (230 mg/kg).

One sample each from borings HAY2, HAY4, and HAY6 contained detectable naphthalene concentrations ranging from 0.002 to 0.004 mg/kg. The concentrations of napthalene detected are below the PRG in industrial soils (190 mg/kg). Based on the various depths and locations of naphthalene concentrations, the source of the naphthalene cannot be determined.

One sample (HAY6-0.90) contained 1,1,2,2-tetrachloroethane at a concentration of 0.002 mg/kg. This concentration is below the PRG for 1,1,2,2-tetrachloroethane in industrial soil (6.8 mg/kg). Twelve samples contained 1,2,4-trimethylbenzene concentrations ranging from 0.001 to 0.003 mg/kg. These concentrations were detected at shallow depths (1.5 meters or shallower) across the site. Detected concentrations of 1,2,4-trimethylbenzene at the site are below the PRG for 1,2,4-trimethylbenzene in industrial soil (170 mg/kg).

Total lead concentrations in soil samples ranged from below the laboratory detection limit to 200 mg/kg. Eight samples exceeded ten times the Soluble Threshold Limit Concentration (STLC) criterion. The results of the Waste Extraction Test (WET) for lead on these samples indicated that only two samples (HAY9-0.90 [6.3 mg/l] and HAY10-0.30 [6.6 mg/l]) remain in excess of the STLC criterion of five mg/l in soil. These samples are localized to the southeast portion of the property. Approximately 200 cubic meters of soil at the site may be classified as hazardous, if excavated and classified for disposal.

4.2 GROUNDWATER

A summary of the analytical results for groundwater samples is presented in Table 2. The analytical report is included in Appendix C.

A previous subsurface investigation conducted in 1995 by Geocon did not encounter groundwater prior to experiencing drilling refusal.

Groundwater was encountered in only one boring (HAY3) during PSI's subsurface investigation. Grab groundwater sample WHAY3 contained concentrations of TPH-D (0.48 mg/l) and Methyl Tertiary Butyl Ether (MTBE [2.4 µg/l]). TOG, TPH-G, and lead were not detected in the laboratory analysis.

Because the service station was closed in the late 1970s the previous use of the subject site is unlikely to be the source of the MTBE detected. Unauthorized dumping or an off-site source may be the source of the MTBE reported in the groundwater.

The low concentration of TPH-D is not considered significant. The source of the TPH-D may be from the contaminated soil reported on-site.

5. SUMMARY AND CONCLUSIONS

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

- Fifty-six soil samples and one groundwater sample were collected in this investigation. Eight exploratory trenches were excavated to determine the source of magnetic anomalies.

- Soils observed during drilling activities primarily consisted of silty clays and silty sands. Groundwater was encountered in only one boring (HAY3) approximately 5.5 to 5.8 meters (18 to 19 feet) bgs. The site is underlain with bedrock material ranging from 1.9 to 6.8 meters (6.5 to 22.5 feet) bgs. A groundwater sample was collected from boring HAY3. Refusal was encountered in all the other borings.

- TPH-G was detected in two soil samples (HAY1-1.5 [0.62 mg/kg] and HAY2-0.15 [0.51 mg/kg]). TPH-G was not detected in a previous subsurface investigation conducted in July of 1995. Based on the low concentrations detected, TPH-G does not present an environmental risk at the site.

- TPH-D concentrations were detected in most of the soil samples. TPH-D concentrations ranged from below the laboratory detection limit to 970 mg/kg. Eleven soil samples contained TPH-D concentrations in excess of 100 mg/kg. TPH-D concentrations generally decreased with depth.

- Concentrations of ethylbenzene and xylenes were detected in only one boring (HAY7). Ethylbenzene concentrations were detected at the surface and 0.90 meter (three foot) samples. Xylene concentrations were detected in the surface (0.006 mg/kg), 0.90 meter (0.034 mg/kg), and 3 meter (0.004 mg/kg) samples. One sample each from borings HAY2, HAY4, and HAY6 contained detectable naphthalene concentrations ranging from 0.002 to 0.004 mg/kg. Based on the various depths and locations of naphthalene concentrations, the source of the naphthalene cannot be determined. One sample (HAY6-0.90) contained 1,1,2,2-tetrachloroethane at a concentration of 0.002 mg/kg. Twelve samples contained 1,2,4-trimethylbenzene concentrations ranging from 0.001 to 0.003 mg/kg. These concentrations were detected at shallow depths (1.5 meters or shallower) across the site. All VOC concentrations detected at the site are below PRG values for industrial soil.

- Concentrations of oil and grease were detected in all of the soil samples. Oil and grease concentrations ranged from 10 to 30,000 mg/kg. A previous subsurface investigation conducted by Geocon in 1995 reported oil and grease concentrations in 15 of 19 soil samples ranging from 50 to 7,200 mg/kg. Generally, oil and grease concentrations decreased with depth. Based on the fact that oil and grease concentrations generally decrease with depth, the source of the oil and grease may be related to asphalt pavement at the site. Pavement of an area with asphalt is typically preceded with spraying the area with an oil sealant. The analytical results are consistent with a previous subsurface investigation conducted by Geocon in 1995. The issue of elevated oil and grease concentrations at the site may be further investigated by conducting a Tier II Risk Based Corrective Action (RBCA) study. A RBCA study will evaluate the potential for contaminants to impact sensitive receptors, and determine clean-up standards, if appropriate.

- Total lead concentrations were detected in most of the soil samples. Eight samples were in excess of ten times the STLC criterion. Most of the detected lead concentrations from this investigation, and Geocon's 1995 investigation, are consistent with natural background concentrations (Scott, 1991). Two of the three soil samples with elevated lead concentrations from Geocon's investigation are also located in the southern portion of the property. The eight samples with elevated concentrations in PSI's investigation are located in the southern portion of the property. An estimated 200 cubic meters of soil at the site may be classified as hazardous, if excavated and classified for disposal.

- One groundwater sample has been collected in the site investigations performed at the site. The groundwater sample (WHAY3) did not contain concentrations of TOG, TPH-G, or lead. Trace concentrations of TPH-D (0.48 mg/l) and MTBE (2.4 µg/l) were reported in the groundwater sample.

  The concentration of TPH-D is not considered significant. This is based on the lack of a Maximum Concentration Limit (MCL) for TPH-D in drinking water, the low mobility of TPH-D in the subsurface, and published regulatory guidelines encouraging natural attenuation of low concentrations of petroleum hydrocarbon contaminants (RWQCB, 1996; LLNL, 1995).

  The concentration of MTBE is not considered significant. The observed concentration in the groundwater sample is likely the result of an off-site source given that the tanks were removed from the site in the late 1970s (Geocon, 1995). The concentration reported in sample WHAY3 is below the secondary drinking water standard (5.0 µg/l). Because MTBE was not detected in any of the soil samples collected from the site, it is not considered a significant site contaminant.

- The exploratory trenches in the areas of the magnetic anomalies did not reveal the presence of Underground Storage Tanks (USTs). However, electrical conduit and small pieces of metallic piping debris were uncovered during the excavations. Though Norcal's discussion of the magnetic anomalies states that the low magnitude anomalies typically represent small USTs or large isolated metallic objects, the magnetometer used by Norcal in 1995 will detect any accumulation of ferrous objects (Norcal, 1999). The electrical conduit and metallic piping debris unearthed from the excavations are likely the source of the magnetic anomalies.

PSI does not recommend further characterization of the site with the possible exception of a Tier II RBCA study. This is consistent with Regional Water Quality Control Board guidelines and published documents (LLNL, 1995; RWQCB, 1996). If the site is redeveloped, a soil management and construction worker health and safety plan should be prepared to minimize potential exposure and waste disposal problems.

REFERENCES

Caltrans, 1997, Task Order # 04-952137-ES, Hazardous Waste Preliminary Site Investigation, prepared for Caltrans, March 31.

Geocon, 1995, Site investigation Report, Foothill Boulevard and Mattox Road Parcel, October.

Scott, 1991, Background Metal Concentrations in Soils in Northern Santa Clara County, California, M.S. Thesis at the University of San Francisco Environmental Management Program, December 1991.

Norcal, 1995, Geophysical Report for Caltrans properties in Hayward and Oakland, September 1.

Norcal, 1999, Personal communication on the geophysical investigation performed at the site, with Mr. Donald J. Kirker, GP, August 11.

Lawrence Livermore National Laboratory, 1995a, *Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks*, prepared for California State Water Resources Control Board, October 16.

Lawrence Livermore National Laboratory, 1995b, *California Leaking Underground Fuel Tank Historical Case Analyses*, prepared for California State Water Resources Control Board, November 16.

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES
INTERSECTION OF MATTOX AND FOOTHILL
HAYWARD, CALIFORNIA

(meters)

SAMPLE NUMBER	DEPTH	TOTAL OIL & GREASE mg/kg	TPH-G mg/kg	TPH-D mg/kg	ETHYLBENZENE mg/kg	NAPTHALENE mg/kg	1,1,2,2-TETRACHLORO-ETHANE mg/kg	1,2,4-TRIMETHYL-BENZENE mg/kg	XYLENES (TOTAL) mg/kg	EPA 8260* mg/kg	TOTAL LEAD mg/kg
HAY1	0.15	8,300	ND (0.5)	220	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
	0.30	73	ND (0.5)	22	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	7.7
	0.90	41	ND (0.5)	13	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	6.8
	1.5	19	0.62	11	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	9.6
HAY2	0.15	7,300	0.51	22	ND (0.001)	0.002	ND (0.002)	0.002	ND (0.003)	ND*	31
	0.30	380	ND	41	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
	0.90	1,600	ND (0.5)	13	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
	1.5	32	ND (0.5)	13	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
	3.0	13	ND (0.5)	16	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
HAY3	0.15	10,000	ND (0.5)	800	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	27
	0.30	310	ND (0.5)	22	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	27
	0.90	17	ND (0.5)	44	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	12
	1.5	34	ND (0.5)	22	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	**61(ND)**
	3.0	13	ND (0.5)	13	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	14
	4.5	20	ND (0.5)	11	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
HAY4 @ 1.3	0.15	30,000	ND (0.5)	970	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	16
	0.30	22,000	ND (0.5)	780	ND (0.001)	ND (0.002)	ND (0.002)	0.003	ND (0.003)	ND*	15
	0.90	23,000	ND (0.5)	17	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	12
	1.5	10	ND (0.5)	130	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	18
	3.0	14	ND (0.5)	ND (10)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
	4.5	7,500	ND (0.5)	130	ND (0.001)	0.002	ND (0.002)	0.002	ND (0.003)	ND*	9.3
HAY5	0.15	570	ND (0.5)	34	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	31
	0.30	330	ND (0.5)	37	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	**55 (2.8)**
	0.90	29	ND (0.5)	31	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	**160 (2.8)**
	1.5	28	ND (0.5)	10	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	**100 (ND)**
	3.0	44	ND (0.5)	18	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND (5.0)
HAY6	0.15	290	ND (0.5)	690	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	15
	0.30	270	ND (0.5)	37	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	22
	0.90	73	ND (0.5)	10	ND (0.001)	0.004	0.002	0.001	ND (0.003)	ND*	**52 (3.0)**
	1.5	29	ND (0.5)	23	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	34
	3.0	82	ND (0.5)	16	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	7.7
	4.5	35	ND (0.5)	17	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	7.7

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES
INTERSECTION OF MATTOX AND FOOTHILL
HAYWARD, CALIFORNIA

SAMPLE NUMBER	DEPTH	OIL & GREASE mg/kg	TPH-G mg/kg	TPH-D mg/kg	ETHYLBENZENE mg/kg	NAPTHALENE mg/kg	1,1,2,2-TETRACHLORO-ETHANE mg/kg	1,2,4-TRIMETHYL-BENZENE mg/kg	XYLENES (TOTAL) mg/kg	EPA 8260* mg/kg	TOTAL LEAD mg/kg
HAY7	0.15	450	ND (0.5)	ND (10)	0.002	ND	ND (0.002)	ND (0.002)	0.006	ND*	23
	0.30	150	ND (0.5)	22	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	39
	0.90	8,200	ND (0.5)	420	0.009	ND (0.002)	ND (0.002)	ND (0.002)	0.034	ND*	33
	1.5	4,700	ND (0.5)	260	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	24
	3.0	670	ND (0.5)	27	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	0.004	ND*	11
	4.5	50	ND (0.5)	12	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	8.2
HAY8	0.15	420	ND (0.5)	36	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	27
	0.30	200	ND (0.5)	180	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	**200 (ND)**
	0.90	15,000	ND (0.5)	93	ND (0.001)	ND (0.002)	ND (0.002)	0.002	ND (0.003)	ND*	28
	1.5	180	ND (0.5)	27	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	9.1
	3.0	140	ND (0.5)	30	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	9.1
	4.5	48	ND (0.5)	16	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	15
HAY9	0.15	2,200	ND (0.5)	520	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	30
	0.30	110	ND (0.5)	10	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	18
	0.90	74	ND (0.5)	29	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	**190 (6.3)** ← STLC
	1.5	96	ND (0.5)	34	ND (0.001)	ND (0.002)	ND (0.002)	0.002	ND (0.003)	ND*	15
	3.0	39	ND (0.5)	30	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	14
	4.5	120	ND (0.5)	26	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	8.4
HAY10	0.15	14,000	ND (0.5)	ND (10)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	ND
	0.30	34	ND (0.5)	ND (10)	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	**78 (6.6)** ← STLC
	0.90	6,100	ND (0.5)	12	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	20
	1.5	720	ND (0.5)	17	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	9.2
	3.0	930	ND (0.5)	36	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	9.7
	4.5	160	ND (0.5)	23	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	8.6
RO-1	NA	270	ND (0.5)	26	ND (0.001)	0.003	ND (0.002)	ND (0.002)	ND (0.003)	ND*	33
RO-2	NA	310	ND (0.5)	51	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	32
RO-3	NA	350	ND (0.5)	54	ND (0.001)	ND (0.002)	ND (0.002)	0.001	ND (0.003)	ND*	33
RO-4	NA	390	ND (0.5)	47	ND (0.001)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.003)	ND*	29
(HAY1-1)	0.30	320	NA	NA	NA	NA	NA	NA	NA	NA	20
(HAY1-2)	0.61	280	NA	NA	NA	NA	NA	NA	NA	NA	20
(HAY1-3)	0.90	200	NA	NA	NA	NA	NA	NA	NA	NA	41
(HAY1-4)	5.2	50	<1.0	<1.0	ND (0.005)	NA	NA	NA	ND (0.005)	NA	NA
(HAY2-1)	0.30	120	NA	NA	NA	NA	NA	NA	NA	NA	29
(HAY2-2)	0.61	3,000	NA	NA	NA	NA	NA	NA	NA	NA	20
(HAY2-3)	0.90	55	NA	NA	NA	NA	NA	NA	NA	NA	4.6
(HAY2-4)	5.2	<50	<1.0	<1.0	ND (0.005)	NA	NA	NA	ND (0.005)	NA	NA
(HAY3-1)	0.30	190	NA	NA	NA	NA	NA	NA	NA	NA	100
(HAY3-2)	0.61	160	NA	NA	NA	NA	NA	NA	NA	NA	14
(HAY3-3)	0.90	<50	NA	NA	NA	NA	NA	NA	NA	NA	<1.0

TABLE 1
ANALYTICAL RESULTS FOR SOIL SAMPLES
INTERSECTION OF MATTOX AND FOOTHILL
HAYWARD, CALIFORNIA

SAMPLE NUMBER	DEPTH	OIL & GREASE mg/kg	TPH-G mg/kg	TPH-D mg/kg	ETHYLBENZENE mg/kg	NAPTHALENE mg/kg	1,1,2,2-TETRACHLORO-ETHANE mg/kg	1,2,4-TRIMETHYL-BENZENE mg/kg	XYLENES (TOTAL) mg/kg	EPA 8260* mg/kg	TOTAL LEAD mg/kg
(HAY4-1)	0.30	2,300	NA	NA	NA	NA	NA	NA	NA	NA	12
(HAY4-2)	0.61	150	NA	NA	NA	NA	NA	NA	NA	NA	<1.0
(HAY4-3)	0.90	<50	NA	NA	NA	NA	NA	NA	NA	NA	19
(HAY4-4)	5.2	7,200	<1.0	<1.0	ND (0.005)	NA	NA	NA	ND (0.005)	NA	NA
(HAY5-1)	0.30	85	NA	NA	NA	NA	NA	NA	NA	NA	11
(HAY5-2)	0.61	260	NA	NA	NA	NA	NA	NA	NA	NA	4.9
(HAY5-3)	0.90	<50	NA	NA	NA	NA	NA	NA	NA	NA	[illegible] @ 3' bgs
(HAY5-4)	2.3	90	<1.0	<1.0	ND (0.005)	NA	NA	NA	ND (0.005)	NA	NA

Notes:

Sample number listed in parentheses ( ) from Geocon, 1995.
Sample depths reported in meters below ground surface.
TPH-G = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M.
TPH-D = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M.
RO-1/4 = Soil samples collected from the roll off bin storing soil cuttings.
EPA 8260* denotes all analytes included in EPA Method 8260 not listed in table.
ND* denotes not detected analytes in EPA Method 8260*, see analytical report for detection limits.
NA = Not analyzed

TABLE 2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

INTERSECTION OF MATTOX AND FOOTHILL

HAYWARD, CALIFORNIA

ug/l

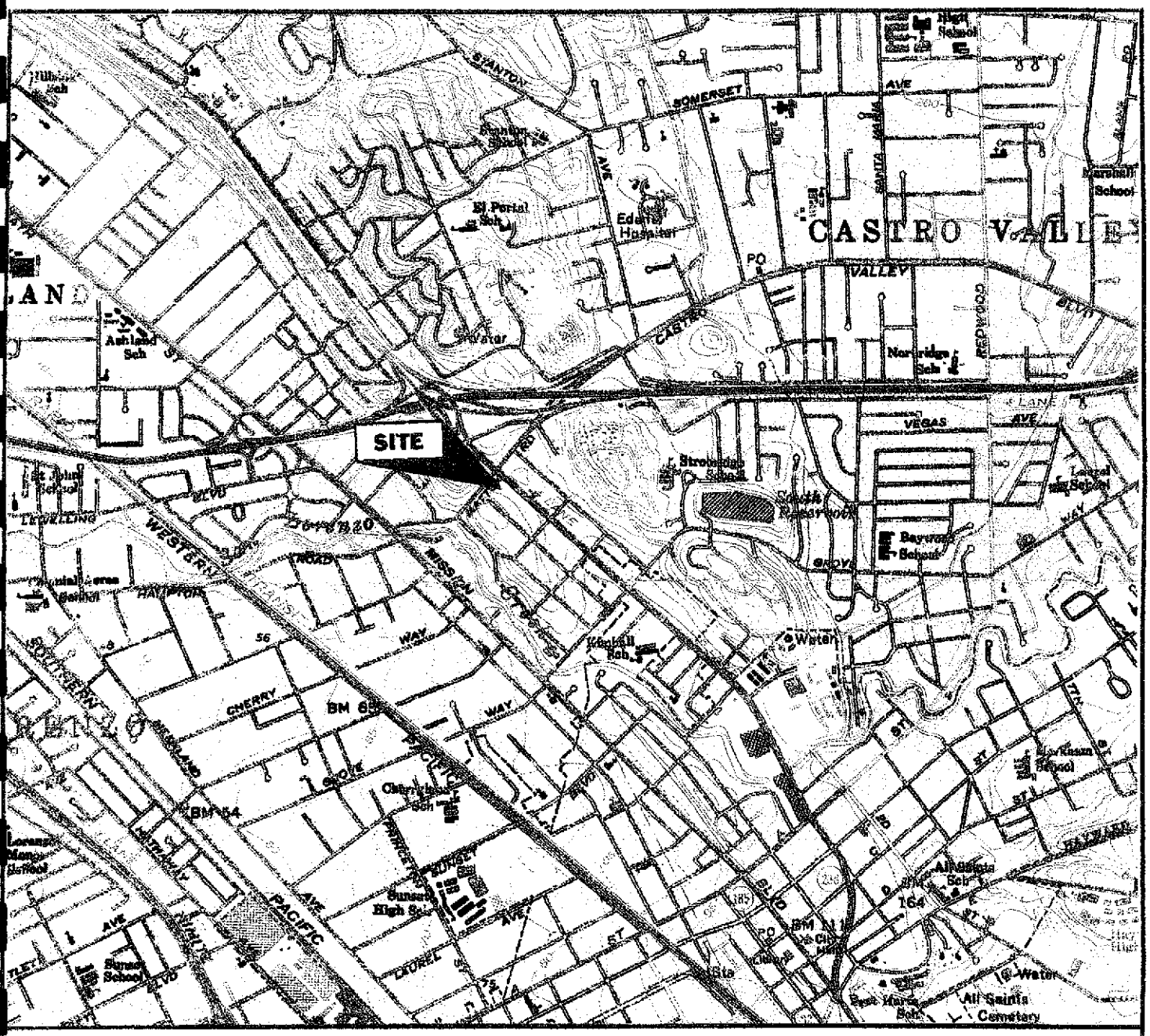
SAMPLE NUMBER	TOTAL OIL & GREASE mg/l	TPH-G mg/l	TPH-D mg/l	MTBE ~~mg/l~~	TOTAL LEAD mg/l	EPA 8260* mg/l
WHAY3	ND (2.7)	ND (0.50)	0.48	2.4	ND (0.10)	ND*

Notes:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M.
TPH-D = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M.
MTBE = Methyl Tertiary Butyl Ether by EPA Method 8260.
EPA 8260 denotes all analytes included in EPA Method 8260 for Volatile Organic Compounds.
ND = Not detected at or above laboratory detection limit. Detection limit shown in parentheses.
ND* see analytical reports for detection limits.

TABLE 3
BORING DEPTHS
INTERSECTION OF MATTOX AND FOOTHILL
HAYWARD, CALIFORNIA

BORING NUMBER	TOTAL DEPTH (FEET BGS)	TOTAL DEPTH (METERS BGS)
HAY1	6.5	1.98
HAY2	6.5	1.98
HAY3	22.5	6.86
HAY4	22.5	6.86
HAY5	10	3.05
HAY6	15	4.57
HAY7	15	4.57
HAY8	16.5	5.03
HAY9	17	5.18
HAY10	16.5	5.03



NORTH

0 1/2 1 MILE

SCALE

REFERENCE:
U.S.G.S. HAYWARD, CALIFORNIA, 1959
PHOTOREVISED 1980

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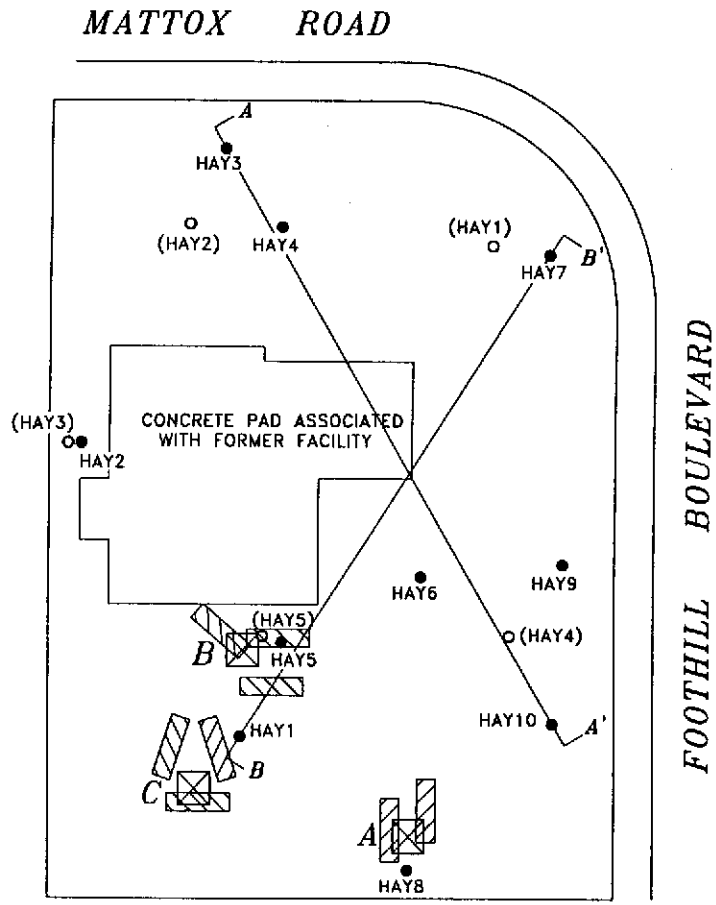
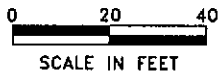
SITE LOCATION
STATE RIGHT OF WAY
MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE: 5/05/99	CK'D BY:	FIGURE NO.: 1
FILE NO.: 9G034-1A		DRAWN BY: S. BOWERS





LEGEND

- HAY1 — SOIL BORING LOCATION
- (HAY1) — PREVIOUS SOIL BORING LOCATION (GEOCON, 7/95)
- AREA OF GEOPHYSICAL ANOMALY AND PSI TRENCHING
- EXPLORATORY TRENCH
- A A' — GEOLOGIC CROSS SECTION

SOURCE: NORCAL, 1999

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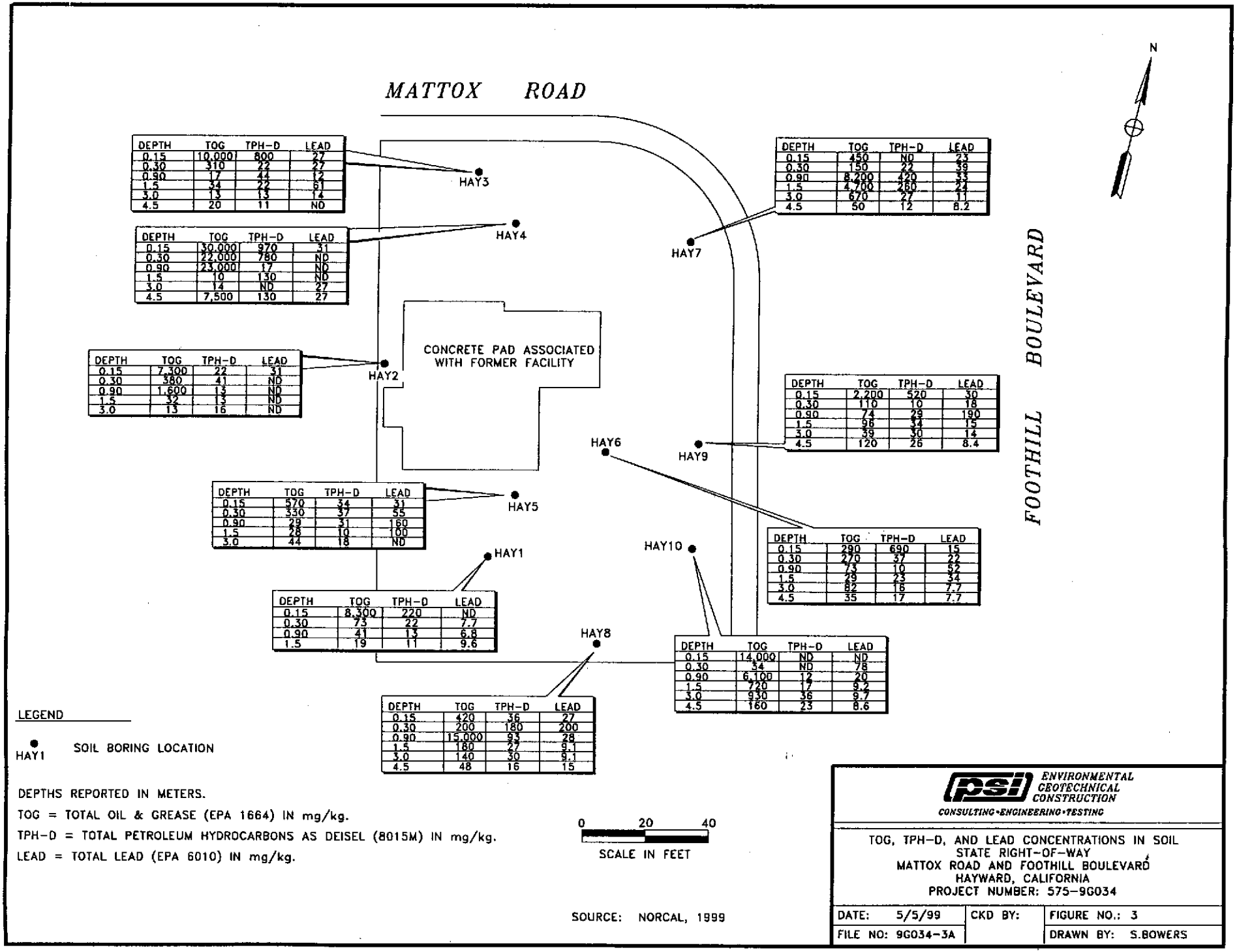
BORING AND TRENCH LOCATIONS
STATE RIGHT-OF-WAY
MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE: 5/5/99	CKD BY:	FIGURE NO.: 2
FILE NO: 9G034-2A		DRAWN BY: S.BOWERS


MATTOX ROAD
FOOTHILL BOULEVARD
N
CONCRETE PAD ASSOCIATED WITH FORMER FACILITY
HAY1
HAY2
HAY3
HAY4
HAY5
HAY6
HAY7
HAY8
HAY9
HAY10
DEPTH TOG TPH-D LEAD
0.15 10,000 800 27
0.30 310 22 27
0.90 17 44 12
1.5 34 22 61
3.0 13 13 14
4.5 20 11 ND
DEPTH TOG TPH-D LEAD
0.15 30,000 970 31
0.30 22,000 780 ND
0.90 23,000 17 ND
1.5 10 130 ND
3.0 14 ND 27
4.5 7,500 130 27
DEPTH TOG TPH-D LEAD
0.15 7,300 22 31
0.30 380 41 ND
0.90 1,600 13 ND
1.5 32 13 ND
3.0 13 16 ND
DEPTH TOG TPH-D LEAD
0.15 570 34 31
0.30 330 37 55
0.90 29 31 160
1.5 28 10 100
3.0 44 18 ND
DEPTH TOG TPH-D LEAD
0.15 8,300 220 ND
0.30 73 22 7.7
0.90 41 13 6.8
1.5 19 11 9.6
DEPTH TOG TPH-D LEAD
0.15 420 36 27
0.30 200 180 200
0.90 15,000 93 28
1.5 180 27 9.1
3.0 140 30 9.1
4.5 48 16 15
DEPTH TOG TPH-D LEAD
0.15 450 ND 23
0.30 150 22 39
0.90 8,200 420 33
1.5 4,700 280 24
3.0 670 27 11
4.5 50 12 8.2
DEPTH TOG TPH-D LEAD
0.15 2,200 520 30
0.30 110 10 18
0.90 74 29 190
1.5 96 34 15
3.0 39 30 14
4.5 120 26 8.4
DEPTH TOG TPH-D LEAD
0.15 290 690 15
0.30 270 37 22
0.90 73 10 52
1.5 29 23 34
3.0 82 16 7.7
4.5 35 17 7.7
DEPTH TOG TPH-D LEAD
0.15 14,000 ND ND
0.30 54 ND 78
0.90 6,100 12 20
1.5 720 17 9.2
3.0 930 36 9.7
4.5 160 23 8.6
LEGEND
HAY1 SOIL BORING LOCATION
DEPTHS REPORTED IN METERS.
TOG = TOTAL OIL & GREASE (EPA 1664) IN mg/kg.
TPH-D = TOTAL PETROLEUM HYDROCARBONS AS DEISEL (8015M) IN mg/kg.
LEAD = TOTAL LEAD (EPA 6010) IN mg/kg.
0 20 40
SCALE IN FEET
SOURCE: NORCAL, 1999
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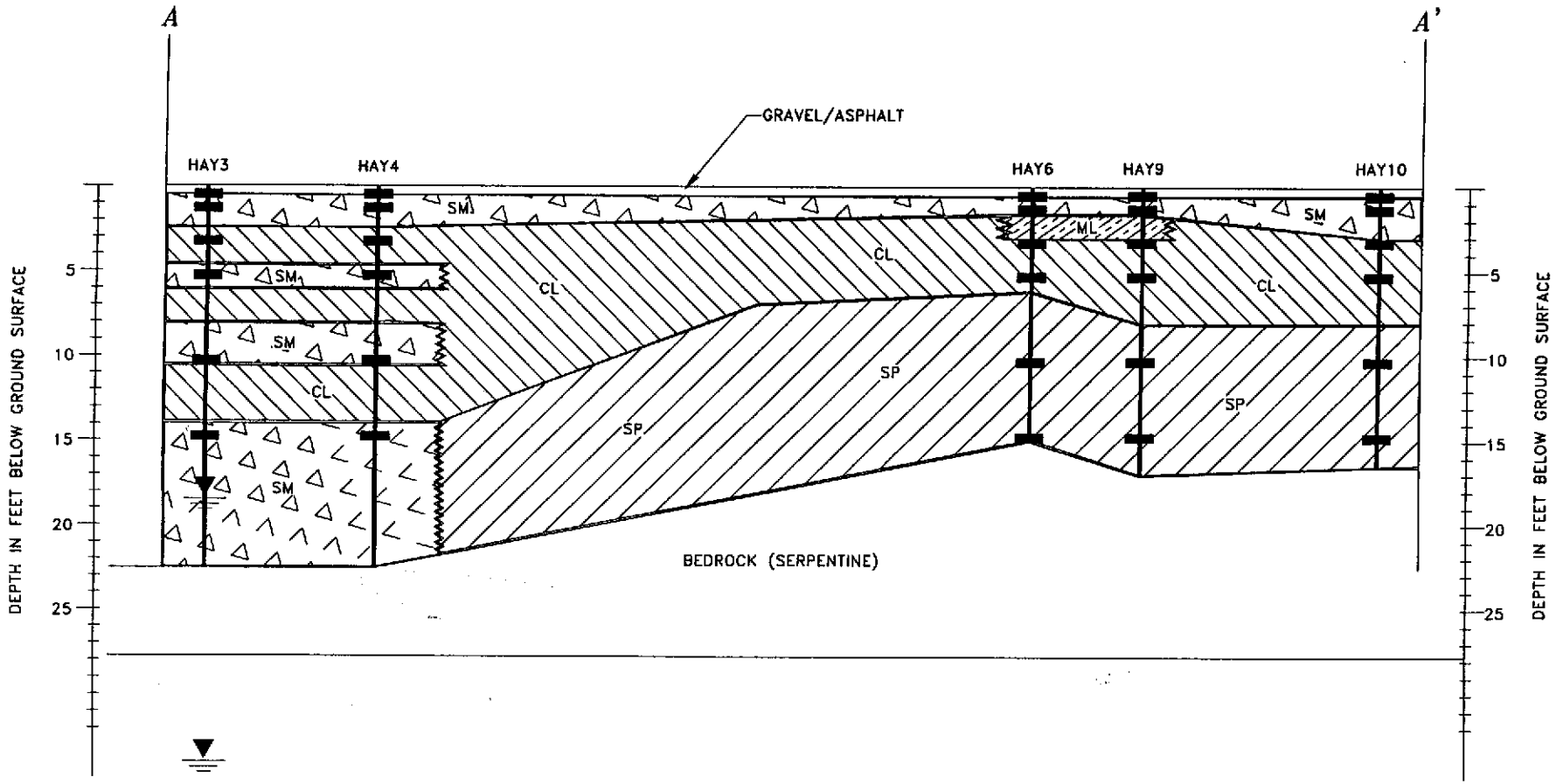
TOG, TPH-D, AND LEAD CONCENTRATIONS IN SOIL
STATE RIGHT-OF-WAY
MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA
PROJECT NUMBER: 575-9G034
DATE: 5/5/99
CKD BY:
FIGURE NO.: 3
FILE NO: 9G034-3A
DRAWN BY: S.BOWERS



LEGEND

SM	SILTY SAND, medium to coarse sand.
CL	SILTY CLAY, medium plasticity.
ML	SANDY SILT, fine sand.
SP	POORLY GRADED SAND WITH SILT, coarse grained sand.
▼	GROUNDWATER LEVEL

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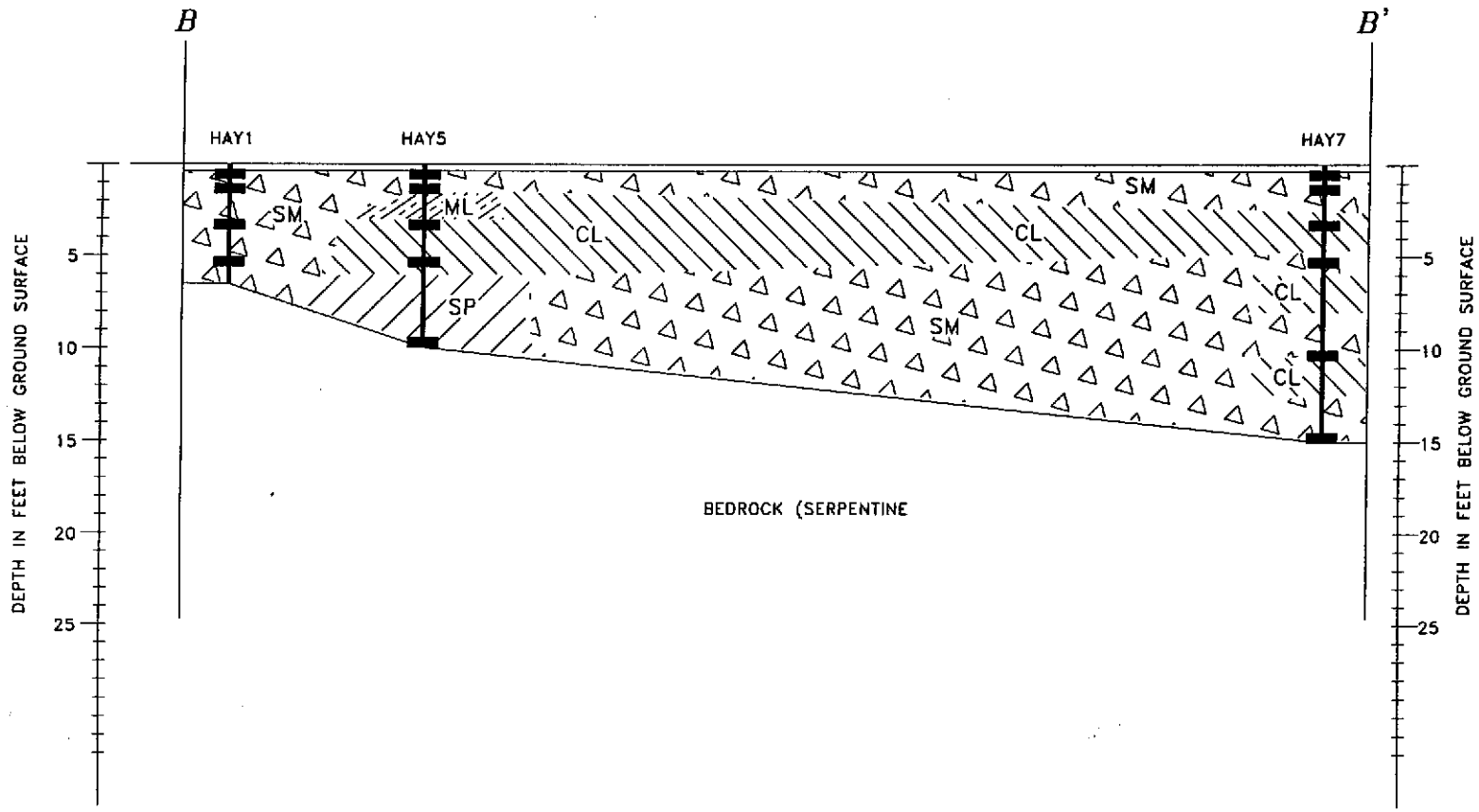
GEOLOGIC CROSS-SECTION: A – A'
STATE RIGHT-OF-WAY
MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE: 8/10/99	CKD BY:	FIGURE NO.: 4
FILE NO: 9G034-3		DRAWN BY: S.BOWERS



LEGEND

SM	SILTY SAND, medium to coarse sand.
CL	SILTY CLAY, medium plasticity.
ML	SANDY SILT, fine sand.
SP	POORLY GRADED SAND WITH SILT, coarse grained sand.

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GEOLOGIC CROSS-SECTION: B – B'
STATE RIGHT-OF-WAY
MATTOX ROAD AND FOOTHILL BOULEVARD
HAYWARD, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE: 8/10/99	CKD BY:	FIGURE NO.: 5
FILE NO: 9G034-4		DRAWN BY: S.BOWERS

APPENDIX A

FIELD PROCEDURES

APPENDIX A
FIELD PROCEDURES

I. FIELD DOCUMENTATION OF SAMPLING PROCEDURES

The following outline describes the procedures adhered by PSI for proper sampling documentation.

1. Sampling procedures will be documented in field notes that contain:

    1. Sample collection procedures
    2. Date and time of collection
    3. Date of shipping
    4. Sample collection location
    5. Sample identification number(s)
    6. Intended analysis
    7. Quality control samples
    8. Sample preservation
    9. Name of sampler
    10. Any pertinent observations

2. Samples will be labeled with the following information:

    1. Sample designation number
    2. Date and time sample was collected
    3. Sampler's name
    4. Sample preservatives (if required)

3. The following is the sample designation system for the site:

    For Borings the samples will be labeled B-(Boring Number)-(Depth) (i.e. sample collected from boring 4 at 5 meters (feet) would be B4-5).

4. Handling of the samples will be recorded on a chain of custody form which shall include:

    1. Project name
    2. Site location
    3. Signature of Collector
    4. Date and time of collection
    5. Sample identification number
    6. Number of containers in sample set
    7. Description of sample and container
    8. Name and signature of persons, and the companies or agencies they represent, who are involved in the chain of possession
    9. Inclusive dates and times of possession
    10. Analyses to be completed

II. ADVANCING OF SOIL BORINGS AND COLLECTION OF SOIL SAMPLES

The following procedures were used for advancing soil borings and collecting soil samples at the site:

1. Prior to the commencement of soil boring activities at the site, soil boring locations were marked with white paint. Underground Service Alert (USA) was contacted to identify underground utilities in the vicinity of the soil borings.

2. Soil boring and sampling activities were conducted by Fisch Environmental of Valley Springs, California. The soil borings were advanced using GeoProbe direct push method. Flush-threaded rods with a stainless steel sampler were advanced into the ground using a hydraulic press and percussion hammer. The opening of the sampler was sealed with a drive tip held in place by a threaded pin.

3. Soil samples were collected using a 0.45 meter (1.5-foot) long, 0.02 meter (1-inch) inside diameter macro-core stainless steel sampler. Soil samplers were washed between sampling intervals with Alconox soap followed by two deionized water rinses. The sampler was lined with clean brass, stainless steel, or acetate sleeves. When the boring was advanced to the desired sampling depth the threaded pin was removed allowing the drive tip to retract as the sampler was advanced 0.45 meter (1.5-foot) into native soil using a percussion hammer.

4. After the sampler was retrieved the sleeves were extracted from the sampler without disturbing the sample. The sample was collected for analyses from the lowest tube in the sampler. The ends of the sample were covered with Teflon™ sheets and capped with polyethylene end caps. The sample was labeled and placed in a zip-lock bag in a chilled cooler prior to delivery to the laboratory for analyses.

5. Soil samples were assigned identification numbers such as B1-5, where B1 indicates the boring designation and -5 indicates that the sample was collected at 5 feet bgs. The samples were labeled with the project name, date and time of sample collection, sampling depth, and client name.

6. Chain-of-custody procedures using chain-of-custody records were implemented during handling and transportation of the samples to the laboratory for analyses.

7. Boring logs were prepared for the soil borings under the supervision of a California-Registered Geologist. Soil from each sample was described in accordance with Unified Soil Classification System by a PSI geologist and recorded on a field boring log. The data recorded on the logs were based on examination of soil samples retrieved in the tubes, and drilling conditions observed in the field. Boring logs include information regarding the location of each boring, geologic descriptions of materials encountered, occurrence of groundwater (if applicable) and organic vapor analyzer (OVA) measurements in the soil samples collected.

8. An HNU photoionizer (PID) was used to monitor volatile organic compounds (VOCs) in the ambient air during drilling at the site in accordance with the site health and safety plan. VOC concentrations in the soil were measured at the sampling depths by partially filling a zip-loc bag and closing the top. The components of the soil were allowed to volatilize and fill the head space in the bag for approximately 15 to 30 minutes prior to inserting the OVA probe through the top of the bag and recording the measurements.

9. No soil cuttings were generated during drilling, due to the use of a geoprobe drill rig.

III. BACKFILL OF SOIL BORINGS

The following procedures were used to backfill the soil borings at the site:

1. Soil borings were backfilled to grade with Portland grout slurry. The slurry consisted of neat cement and 5% bentonite powder.

APPENDIX B

BORING LOGS

SOIL BORING LOG

BORING NO:	HAY1
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/2/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	6.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groundwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY1-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY1-0.30				Silty Sand with Gravel, fine to medium sand, brown, damp, no odor.	0		
4	HAY1-0.90					0		
6	HAY1-1.5					0		
7								Total Depth = 6.5 feet bgs.
								Refusal at 6.5 feet bgs
								No groundwater encountered
								Boring grouted with neat cement.

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY2
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/2/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	6.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY2-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY2-0.30					0		
					Silty Sand with Gravel, fine to medium sand, brown, damp, no			
3					odor.			
4	HAY2-0.00					0		
5								
6	HAY2-1.5					0		
7								Total Depth = 6.5 feet bgs.
								Refusal at 6.5 feet bgs
8								No groundwater encountered
								Boring grouted with neat cement.
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY3
SHEET 1	OF 2

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	22.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
6/1/99	initial	no groundwater
6/2/99	static	19 feet

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY1-0.15				Silty Sand, medium coarse sands, brown, damp, no odor.	0	SM	Gravel/soil surface
2	HAY1-0.30					0		
3					Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
4	HAY1-0.90					0		
5					Silty Sand, medium coarse sands, brown, damp, no odor.		SM	
6	HAY1-1.5					0		
7					Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
8								
9					Gravelly Silty Sand, fine to coarse gravel, fine sand, tan, damp, no odor.		SM	
10								
11	HAY3-3.0				Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
12								
13								
14								
15	HAY3-4.5				Gravelly Silty Sand, fine to medium coarse, medium to coarse sand, tan, damp, no odor.		SM	
16								
17								
18								
19								
20					log continues downward			

Reviewed By: Tim O'Brien

LOGGED BY: Scott A. Bowers

SOIL BORING LOG

BORING NO:	HAY3
SHEET	2 OF 2

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	22.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
21					Gravelly Silty Sand as described above		SM	
22								
23								Total Depth = 22.5 feet bgs.
								Boring drilled to sufficient depth for investigation.
								Groundwater encountered at 19 feet bgs.
								Boring grouted with neat cement.

Reviewed By: Tim O'Brien	LOGGED BY: Scott A. Bowers

SOIL BORING LOG

BORING NO:	HAY4
SHEET	1 OF 2

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	22.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groundwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY4-0.15				Silty Sand, medium coarse sands, brown, damp, no odor.	0	SM	Gravel/soil surface
2	HAY4-0.30					0		
3					Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
4	HAY4-0.90					0		
5					Silty Sand, medium coarse sands, brown, damp, no odor.		SM	
6	HAY4-1.5					0		
7					Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
8								
9					Gravelly Silty Sand, medium to coarse gravel, fine sand, tan, damp, no odor.		SM	
10								
11	HAY4-3.0				Silty Clay, dark brown, damp, medium plasticity, no odor.		CL	
12								
13								
14								
15	HAY4-4.5				Gravelly Silty Sand, fine to medium gravel, medium to coarse sand, tan, damp, no odor.		SM	
16								
17								
18								
19								
20					log continues downward			

Reviewed By: Tim O'Brien

LOGGED BY: Scott A. Bowers

SOIL BORING LOG

BORING NO:	HAY4
SHEET	2 OF 2

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	22.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
21					Gravelly Silty Sand as described above		SM	
22								
23								Total Depth = 22.5 feet bgs.
								Boring drilled to sufficient depth for investigation.
								No groundwater encountered.
								Boring grouted with neat cement.

Reviewed By: Tim O'Brien

LOGGED BY: Scott A. Bowers

SOIL BORING LOG

BORING NO:	HAY5
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward
PROJECT NUMBER:	575-9G034 DATE: 6/2/99
DRILLING COMPANY:	V & W Drilling
DRILLING PERSONNEL:	Travis Mills
DRILLING METHOD:	Direct Push (Geoprobe)
BORING DIAMETER:	2-inch DEPTH: 10 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groundwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY5-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY5-0.30					0		
3					Sandy Silt, fine sand, brown, damp.		ML	
4	HAY5-0.80				Silty Clay, dark brown, moist, medium plasticity.	0	CL	
5								
6	HAY5-1.5					0		
7					Poorly graded sand with silt, coarse grained sand, brown/olive,		SP	
8					damp.			
9								
10	HAY5-3.0					0		
11								Total Depth = 10 feet bgs.
12								Boring drilled to sufficient depth for investigation.
13								No groundwater encountered
14								Boring grouted with neat cement.
15								
16								
17								
18								
19								
20								

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY6
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/2/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	15 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY6-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY6-0.30					0		
3					Sandy Silt, fine sand, brown, damp.		ML	
4	HAY6-0.00				Silty Clay, dark brown, moist, medium plasticity.	0	CL	
5								
6	HAY6-1.5					0		
7					Poorly graded sand with silt, coarse grained sand, brown/olive, damp.		SP	
8								
9								
10	HAY6-3.0					0		
11								
12								
13								
14								
15	HAY6-4.5					0		
16								Total Depth = 15 feet bgs.
17								Refusal at 15 feet bgs.
18								No groundwater encountered
19								Boring grouted with neat cement.
20								

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY7
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	15 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY7-0.15				Silty Sand, medium to coarse sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY7-0.30					0		
3					Lean clay with silt, dark brown, damp, medium plasticity.		CL	
4	HAY7-0.80					0		
5					Silty Sand, medium to coarse sands, brown, damp.		SM	
6	HAY7-1.5					0		
7					Lean clay with silt, dark brown, damp, medium plasticity.		CL	
8								
9					Gravelly Silty Sand, fine to coarse gravel, fine sand, tan, damp.		SM	
10								
11	HAY7-3.0				Lean clay with silt, dark brown, damp, medium plasticity.	0	CL	
12								
13					Gravelly Silty Sand, fine to coarse gravel, fine sand, tan, damp.		SM	
14								
15	HAY7-4.5					0		
16								Total Depth = 15 feet bgs.
17								Refusal at 15 feet bgs
18								No groundwater encountered.
19								Boring grouted with neat cement.
20								

Reviewed By: Tim O'Brien	LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY8
SHEET 1	OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	16.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groudwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY8-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Gravel/Asphalt surface
2	HAY8-0.30					0		
3								
4	HAY8-0.80				Lean clay with silt, dark brown, moist, medium plasticity.	0	CL	
5								
6	HAY8-1.5					0		
7								
8								
9					Poorly graded sand with silt, coarse grained sand, brown/olive, moist.		SP	
10	HAY8-9.0					0		
11								
12								
13								
14								
15	HAY8-14.5					0		
16								
17								Total Depth = 16.5 feet bgs.
18								Refusal at 16.5 feet bgs
19								No groundwater encountered
20								Boring grouted with neat cement.

Reviewed By: Tim O'Brien	LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	HAY9
SHEET 1	OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	17 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groundwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY9-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
	HAY9-0.30					0		
2					Sandy Silt, fine sand, brown, damp.		ML	
3								
4	HAY9-0.80				Lean clay with silt, dark brown, moist, medium plasticity.	0	CL	
5								
6	HAY9-1.5					0		
7								
8								
9					Poorly graded sand with silt, coarse grained sand, brown/olive, damp.		SP	
10	HAY9-3.0					0		
11								
12								
13								
14								
15	HAY9-4.5							
16								
17								
18								Total Depth = 17 feet bgs.
19								Refusal at 17 feet bgs
20								No groundwater encountered
								Boring grouted with neat cement.

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

SOIL BORING LOG

BORING NO:	**HAY10**
SHEET	1 OF 1

PROJECT NAME:	Caltrans: Mattox and Foothill, Hayward		
PROJECT NUMBER:	575-9G034	DATE:	6/1/99
DRILLING COMPANY:	V & W Drilling		
DRILLING PERSONNEL:	Travis Mills		
DRILLING METHOD:	Direct Push (Geoprobe)		
BORING DIAMETER:	2-inch	DEPTH:	16.5 feet

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
	No groundwater encountered	

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
1	HAY9-0.15				Silty Sand, fine to medium sands, brown, damp, no odor.	0	SM	Asphalt surface
2	HAY9-0.30					0		
3								
4	HAY9-0.50				Lean clay with silt, dark brown, moist, medium plasticity.	0	CL	
5								
6	HAY9-1.5					0		
7								
8								
9					Poorly graded sand with silt, coarse grained sand, brown/olive, damp.		SP	
10	HAY9-3.0					0		
11								
12								
13								
14								
15	HAY9-4.5							
16								
17								Total Depth = 16.5 feet bgs.
18								Refusal at 16.5 feet bgs
19								No groundwater encountered
20								Boring grouted with neat cement.

Reviewed By: Tim O'Brien

LOGGED BY: Scott Bowers

APPENDIX C

LABORATORY RESULTS AND CHAIN-OF-CUSTODY RECORDS

96034

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 06/01/99
Date Received: 06/02/99
Job Number: 14981

Project: Caltrans:Mattox & Foothill

CASE NARRATIVE

The following information applies to samples which were received on 06/02/99 :

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.

8260: Some surrogate recoveries were outside the acceptance limits due to reproducible sample matrix effects.

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.

Centrum
(800) 798-9336

Lead By ICP

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: RLB

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Digested: 06/09/99
Date Analyzed: 06/14-15/99
Batch Number: 6010S1231
Method Number: 6010

Sample ID	Detection Limit mg/kg	Lead mg/kg
Method Blank	5.0	ND
Hay3-0.15	5.0	**27**
Hay3-0.3	5.0	**27**
Hay3-0.9	5.0	**12**

Centrum
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Lead By ICP

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: RLB

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Digested: 06/10/99
Date Analyzed: 06/16-23/99
Batch Number: 6010S1232
Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	ND
Hay3-1.5	5.0	61
Hay3-3.0	5.0	14
Hay4-0.15	5.0	16
Hay4-0.3	5.0	15
Hay4-0.9	10	12
Hay4-1.5	5.0	18
Hay4-4.5	5.0	9.3
Hay7-0.15	10	23
Hay7-0.30	5.0	39
Hay7-0.90	5.0	33
Hay7-1.5	5.0	24
Hay7-3.0	5.0	11
Hay7-4.5	5.0	8.2

Centrum
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Lead By ICP

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: RLB

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Digested: 06/11/99
Date Analyzed: 06/22/99
Batch Number: 6010S1233
Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	ND
Hay9-0.15	5.0	30
Hay9-0.30	5.0	18
Hay9-0.90	5.0	190
Hay9-1.5	5.0	15
Hay9-3.0	5.0	14
Hay9-4.5	5.0	8.4
Hay10-0.30	5.0	78
Hay10-0.90	5.0	20
Hay10-1.5	5.0	9.2
Hay10-3.0	5.0	9.7
Hay10-4.5	5.0	8.6
Hay8-0.15	5.0	27
Hay8-0.3	5.0	200
Hay8-0.9	5.0	28
Hay8-1.5	5.0	9.1
Hay8-3.0	5.0	9.1
Hay8-4.5	5.0	15

Centrum
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QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1232
Method: 6010

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	98.75	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 15022-10

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	59.3	62.4	5%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1233
Method: 6010

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	95.78	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	47.9	47.4	1%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
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Lead By FLAA

Client:	PSI	Date Sampled:	06/01/99
Project:	Caltrans: Mattox & Foothill	Date Received:	06/02/99
Job No.:	14981	Date Digested:	06/10-11/99
Matrix:	Soil	Date Analyzed:	06/24/99
Analyst:	RVJ	Batch Number:	6010S1232
			6010S1233
		Method Number:	7420

	Detection Limit	Lead
Sample ID	mg/kg	mg/kg
Method Blank	5.0	ND
Hay3-4.5	5.0	ND
Hay4-3.0	5.0	ND
Hay10-0.15	5.0	ND

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1232
Method: 7420

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	110.2	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 15022-10

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	64.7	64.3	1%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1233
Method: 7420

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	111.9	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 14988-1

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	64.7	69.4	7%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: NG

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Extracted: 06/04/99
Date Analyzed: 06/04/99
Batch Number: 4132S1039

Sample ID	Detection Limit mg/kg	Total Oil & Grease mg/kg
Method Blank	10	ND
Hay 3-0.15	1,000	10,000
Hay 3-0.3	10	310
Hay 3-0.9	10	17
Hay 3-1.5	10	34
Hay 3-3.0	10	13
Hay 3-4.5	10	20
Hay 4-0.15	1,000	30,000
Hay 4-0.3	1,000	22,000
Hay 4-0.9	1,000	23,000
Hay 4-1.5	10	10
Hay 4-3.0	10	14
Hay 4-4.5	1,000	7,500
Hay 7-0.15	10	450
Hay 7-0.30	10	150
Hay 7-0.90	1,000	8,200
Hay 7-1.5	1,000	4,700
Hay 7-3.0	10	670
Hay 7-4.5	10	50
Hay 9-0.15	100	2,200
Hay 9-0.30	10	110

Centrum
(800) 798-9336

EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: NG

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Extracted: 06/07/99
Date Analyzed: 06/07/99
Batch Number: 4132S1040

Sample ID	Detection Limit mg/kg	Total Oil & Grease mg/kg
Method Blank	10	ND
Hay 9-0.90	10	74
Hay 9-1.5	10	96
Hay 9-3.0	10	39
Hay 9-4.5	10	120
Hay 10-0.15	1,000	14,000
Hay 10-0.30	10	34
Hay 10-0.90	1,000	6,100
Hay 10-1.5	10	720
Hay 10-3.0	10	930
Hay 10-4.5	10	160
Hay 8-0.15	10	420
Hay 8-0.3	10	200
Hay 8-0.9	1,000	15,000
Hay 8-1.5	10	180
Hay 8-3.0	10	140
Hay 8-4.5	10	48

Centrum
(800) 798-9336

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil
Batch #: 4132S1039

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	40	124	72 - 131	Pass

Analytical Notes:

Batch Precision Results

Duplicate Sample ID: Hay 9-0.30

Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil	111.60	113.60	2%	22%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Report - EPA 413.2 Oil & Grease

Matrix: Soil
Batch #: 4132S1040

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	40	124	72 - 131	Pass

Analytical Notes:

Batch Precision Results

Duplicate Sample ID: 14988-4

Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Petroleum Hydrocarbons	29.17	30.53	5%	22%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
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Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: NBP

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Extracted: 06/08/99
Date Analyzed: 06/08-09/99
Batch Number: 8015DS1654

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/kg	mg/kg	Limit: 50 - 150%
Method Blank	10	ND	105 %
Hay 3-0.15	10	800*	94 %
Hay 3-0.3	10	22*	104 %
Hay 3-0.9	10	44*	100 %
Hay 3-1.5	10	22*	98 %
Hay 3-3.0	10	13*	97 %
Hay 3-4.5	10	11*	98 %
Hay 4-0.15	200	970*	102 %
Hay 4-0.3	200	780*	106 %
Hay 4-0.9	10	17*	100 %
Hay 4-1.5	50	130*	124 %
Hay 4-3.0	10	ND	95 %
Hay 4-4.5	50	130*	126 %
Hay 7-0.15	200	ND	100 %
Hay 7-0.30	10	22*	101 %
Hay 7-0.90	200	420*	100 %
Hay 7-1.5	100	260*	105 %
Hay 7-3.0	10	27*	104 %
Hay 7-4.5	10	12*	108 %
Hay 9-0.15	200	520*	99 %
Hay 9-0.30	10	10*	106 %

*The chromatographic pattern displayed by this sample indicates the presence of petroleum hydrocarbons other than diesel. The concentration of petroleum hydrocarbons has been quantitated against diesel and reported here as diesel.

Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client:	PSI	Date Sampled:	06/01/99
Project:	Caltrans:Mattox & Foothill	Date Received:	06/02/99
Job No.:	14981	Date Extracted:	06/08/99
Matrix:	Soil	Date Analyzed:	06/08-09/99
Analyst:	NBP	Batch Number:	8015DS1655

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/kg	mg/kg	Limit: 50 - 150%
Method Blank	10	ND	106 %
Hay 9-0.90	10	29*	100 %
Hay 9-1.5	10	34*	98 %
Hay 9-3.0	10	30*	102 %
Hay 9-4.5	10	26*	102 %
Hay 10-0.15	10	ND	99 %
Hay 10-0.30	10	ND	102 %
Hay 10-0.90	10	12*	102 %
Hay 10-1.5	10	17*	108 %
Hay 10-3.0	10	36*	113 %
Hay 10-4.5	10	23*	101 %
Hay 8-0.15	10	36*	99 %
Hay 8-0.3	20	180*	106 %
Hay 8-0.9	20	93*	104 %
Hay 8-1.5	10	27*	101 %
Hay 8-3.0	10	30*	105 %
Hay 8-4.5	10	16*	108 %

*The chromatographic pattern displayed by this sample indicates the presence of petroleum hydrocarbons other than diesel. The concentration of petroleum hydrocarbons has been quantitated against diesel and reported here as diesel.

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QC Sample Report - EPA 8015M Diesel

Matrix: Soil
Batch #: 8015DS1654

Batch Accuracy Results

Sample ID: Laboratory Control Sample

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

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
Diesel	100	101	1%	29%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA 8015M Diesel

Matrix: Soil
Batch #: 8015DS1655

Batch Accuracy Results

Sample ID: Laboratory Control Sample

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

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
Diesel	111	110	1%	29%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: GR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/06/99
Batch Number: 8015GS2249

Sample ID	Detection Limit mg/kg	Petroleum Hydrocarbons as Gasoline mg/kg
Method Blank	0.50	ND
Hay 3-0.15	0.50	ND
Hay 3-0.3	0.50	ND
Hay 3-0.9	0.50	ND
Hay 3-1.5	0.50	ND
Hay 3-3.0	0.50	ND
Hay 3-4.5	0.50	ND
Hay 4-0.15	0.50	ND
Hay 4-0.3	0.50	ND
Hay 4-0.9	0.50	ND
Hay 4-1.5	0.50	ND
Hay 4-3.0	0.50	ND
Hay 4-4.5	0.50	ND
Hay 7-0.15	0.50	ND
Hay 7-0.30	0.50	ND
Hay 7-0.90	0.50	ND
Hay 7-1.5	0.50	ND
Hay 7-3.0	0.50	ND
Hay 7-4.5	0.50	ND
Hay 9-0.15	0.50	ND
Hay 9-0.30	0.50	ND

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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: GR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/07/99
Batch Number: 8015GS2250

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/kg	mg/kg
Method Blank	0.50	ND
Hay 9-0.90	0.50	ND
Hay 9-1.5	0.50	ND
Hay 9-3.0	0.50	ND
Hay 9-4.5	0.50	ND
Hay 10-0.15	0.50	ND
Hay 10-0.30	0.50	ND
Hay 10-0.90	0.50	ND
Hay 10-1.5	0.50	ND
Hay 10-3.0	0.50	ND
Hay 10-4.5	0.50	ND
Hay 8-0.15	0.50	ND
Hay 8-0.3	0.50	ND
Hay 8-0.9	0.50	ND
Hay 8-1.5	0.50	ND
Hay 8-3.0	0.50	ND
Hay 8-4.5	0.50	ND

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QC Sample Report - EPA 8015M Gasoline

Matrix: Soil
Batch #: 8015GS2249

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	100	70 - 130	Pass

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
Gasoline	10.05	10.09	0%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA 8015M Gasoline

Matrix: Soil
Batch #: 8015GS2250

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	101	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 14988-1

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.55	9.39	2%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Blank	Hay3-0.15	Hay3-0.3	Hay3-0.9	Hay3-1.5	Hay3-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
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Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Blank	Hay3-0.15	Hay3-0.3	Hay3-0.9	Hay3-1.5	Hay3-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	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	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	0.00	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:	Blank	Hay3-0.15	Hay3-0.3	Hay3-0.9	Hay3-1.5	Hay3-3.0
Dibromofluoromethane	97	107	107	105	104	108
Toluene-d8	98	98	94	100	99	101
Bromofluorobenzene	100	91	89	98	100	91

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay3-4.5	Hay4-0.15	Hay4-0.3	Hay4-0.9	Hay4-1.5	Hay4-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
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Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay3-4.5	Hay4-0.15	Hay4-0.3	Hay4-0.9	Hay4-1.5	Hay4-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	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	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	0.001	0.003	ND	ND	ND
1,3,5-Trimethylbenzene	0.00	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:	Hay3-4.5	Hay4-0.15	Hay4-0.3	Hay4-0.9	Hay4-1.5	Hay4-3.0
Dibromofluoromethane	106	114	112	111	106	102
Toluene-d8	100	84	89	89	92	101
Bromofluorobenzene	104	72*	82	88	85	99

*See Case Narrative regarding surrogate recoveries outside the acceptance limits.

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729
8260S1730, 8260S1731

	Sample ID:	Hay4-4.5	Hay7-0.15	Hay7-0.30	Hay7-0.90	Hay7-1.5	Hay7-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
(800) 798-9336

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729
8260S1730, 8260S1731

	Sample ID:	Hay4-4.5	Hay7-0.15	Hay7-0.30	Hay7-0.90	Hay7-1.5	Hay7-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	**0.002**	ND	**0.009**	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	**0.002**	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	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	0.00	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	**0.006**	ND	**0.034**	ND	**0.004**

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Hay4-4.5	Hay7-0.15	Hay7-0.30	Hay7-0.90	Hay7-1.5	Hay7-3.0
Dibromofluoromethane	111	108	104	106	108	108
Toluene-d8	86	94	94	87	101	105
Bromofluorobenzene	81	89	99	74*	93	83

*See Case Narrative regarding surrogate recoveries outside the acceptance limits.

Centrum
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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay7-4.5	Hay9-0.15	Hay9-0.30	Hay9-0.90	Hay9-1.5	Hay9-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
(800) 798-9336

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729
8260S1730, 8260S1731

	Sample ID:	Hay7-4.5	Hay9-0.15	Hay9-0.30	Hay9-0.90	Hay9-1.5	Hay9-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	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	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	0.001	0.002	ND
1,3,5-Trimethylbenzene	0.00	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:	Hay7-4.5	Hay9-0.15	Hay9-0.30	Hay9-0.90	Hay9-1.5	Hay9-3.0
Dibromofluoromethane	112	109	104	107	102	107
Toluene-d8	101	84	94	94	93	93
Bromofluorobenzene	87	77*	82	74*	81	89

*See Case Narrative regarding surrogate recoveries outside the acceptance limits.

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729
8260S1730, 8260S1731

	Sample ID:	Hay9-4.5	Hay10-0.15	Hay10-0.30	Hay10-0.90	Hay10-1.5	Hay10-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

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Client: PSI
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Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay9-4.5	Hay10-0.15	Hay10-0.30	Hay10-0.90	Hay10-1.5	Hay10-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	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	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	0.001	ND
1,3,5-Trimethylbenzene	0.00	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:	Hay9-4.5	Hay10-0.15	Hay10-0.30	Hay10-0.90	Hay10-1.5	Hay10-3.0
Dibromofluoromethane	101	102	102	109	104	103
Toluene-d8	99	89	100	94	95	97
Bromofluorobenzene	93	103	99	95	89	90

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay10-4.5	Hay8-0.15	Hay8-0.3	Hay8-0.9	Hay8-1.5	Hay8-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.20	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.002	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

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Client: PSI
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Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729
8260S1730, 8260S1731

	Sample ID:	Hay10-4.5	Hay8-0.15	Hay8-0.3	Hay8-0.9	Hay8-1.5	Hay8-3.0
Compounds	**DL**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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 (MtBE)	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	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	0.001	0.002	ND	ND
1,3,5-Trimethylbenzene	0.00	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:	Hay10-4.5	Hay8-0.15	Hay8-0.3	Hay8-0.9	Hay8-1.5	Hay8-3.0
Dibromofluoromethane	104	111	111	118	98	104
Toluene-d8	101	96	96	90	96	100
Bromofluorobenzene	89	90	84	67*	94	99

*See Case Narrative regarding surrogate recoveries outside the acceptance limits.

Centrum
(800) 798-9336

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay8-4.5
Compounds	**DL**	mg/Kg
Acetone	0.20	ND
tert-Amyl Methyl Ether (TAME	0.005	ND
Benzene	0.001	ND
Bromobenzene	0.005	ND
Bromochloromethane	0.005	ND
Bromodichloromethane	0.001	ND
Bromoform	0.005	ND
Bromomethane	0.01	ND
tert-Butanol (TBA)	0.05	ND
2-Butanone (MEK)	0.01	ND
n-Butylbenzene	0.002	ND
sec-Butylbenzene	0.00	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	0.002	ND
2-Chlorotoluene	0.002	ND
4-Chlorotoluene	0.002	ND
Dibromochloromethane	0.00	ND
1,2-Dibromoethane	0.002	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
(800) 798-9336

Client: PSI
Project: Caltrans:Mattox & Foothill
Job No.: 14981
Matrix: Soil
Analyst: MBH/JMR

Date Sampled: 06/01/99
Date Received: 06/02/99
Date Analyzed: 06/09-11/99
Batch Number: 8260S1728, 8260S1729 8260S1730, 8260S1731

	Sample ID:	Hay8-4.5
Compounds	**DL**	mg/Kg
cis-1,3-Dichloropropene	0.001	ND
trans-1,3-Dichloropropene	0.001	ND
Diisopropyl Ether (DIPE)	0.005	ND
Ethylbenzene	0.001	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND
Hexachlorobutadiene	0.00	ND
2-Hexanone	0.01	ND
Isopropylbenzene	0.001	ND
p-Isopropyltoluene	0.002	ND
Methylene chloride	0.05	ND
4-Methyl-2-pentanone	0.01	ND
Methyl tert-Butyl Ether (MtBE)	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
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	0.00	ND
Vinyl chloride	0.002	ND
Xylenes (total)	0.003	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Hay8-4.5
Dibromofluoromethane	103
Toluene-d8	99
Bromofluorobenzene	102

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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1728

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	103	59 - 172	Pass
Benzene	0.020	96	66 - 142	Pass
Trichloroethene	0.020	104	71 - 137	Pass
Toluene	0.020	97	59 - 139	Pass
Chlorobenzene	0.020	96	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay4-4.5

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0305	0.0268	13%	22%	Pass
Benzene	0.0254	0.0228	11%	21%	Pass
Trichloroethene	0.0230	0.0209	10%	24%	Pass
Toluene	0.0228	0.0195	15%	21%	Pass
Chlorobenzene	0.0252	0.0222	12%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1729

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	128	59 - 172	Pass
Benzene	0.020	117	66 - 142	Pass
Trichloroethene	0.020	117	71 - 137	Pass
Toluene	0.020	111	59 - 139	Pass
Chlorobenzene	0.020	113	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: HAY9-3.0

	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0276	0.0276	0%	22%	Pass
Benzene	0.0237	0.0249	5%	21%	Pass
Trichloroethene	0.0231	0.0240	3%	24%	Pass
Toluene	0.0231	0.0240	4%	21%	Pass
Chlorobenzene	0.0240	0.0234	3%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1730

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	131	59 - 172	Pass
Benzene	0.020	114	66 - 142	Pass
Trichloroethene	0.020	127	71 - 137	Pass
Toluene	0.020	118	59 - 139	Pass
Chlorobenzene	0.020	115	60 - 133	Pass

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
1,1-Dichloroethene	0.0262	0.0232	12%	22%	Pass
Benzene	0.0228	0.0213	7%	21%	Pass
Trichloroethene	0.0254	0.0248	2%	24%	Pass
Toluene	0.0236	0.0215	9%	21%	Pass
Chlorobenzene	0.0231	0.0206	11%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
(800) 798-9336

QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1731

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	**120**	59 - 172	**Pass**
Benzene	0.020	**107**	66 - 142	**Pass**
Trichloroethene	0.020	**100**	71 - 137	**Pass**
Toluene	0.020	**106**	59 - 139	**Pass**
Chlorobenzene	0.020	**112**	60 - 133	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay8-1.5

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0228	0.0224	**2%**	22%	**Pass**
Benzene	0.0213	0.0211	**1%**	21%	**Pass**
Trichloroethene	0.0214	0.0200	**7%**	24%	**Pass**
Toluene	0.0240	0.0218	**9%**	21%	**Pass**
Chlorobenzene	0.0225	0.0220	**2%**	21%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373

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

Centrum Job # 14988

Chain of Custody Record

Page 1 of 3

Project No.:	Project Name:
575-96034	Caltrans: Mathox & Foothill
Project Manager:	**Phone:** / **Fax:**
Frank Poss	(510) 785-1111 / (510) 785-1192
Client Name: (Company)	**Address:**
PSI	1320 W. Winton Ave, Hayward

Analyses Requested

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 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	O+G (1664)	Remarks/ Special Instructions
1	Hay6-0.15	6/2/99	915	S			X		X	X							X	X	
2	-0.30		920																
3	-0.90		925																
4	-1.5		930																
5	-3.0		935																
6	-4.5		940																
7	Hay5-0.15																		
8	-0.30		1020																
9	-0.90		1025																
10	-1.5		1030																

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/2/99	1700			
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**
			Relinquished by:	**Date**	**Time**
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			**Received for Laboratory by:**	**Date**	**Time**
			Jeff Butler	6/3/99	9:15

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried
- ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes: Please include ethyl dibromide and ethyl dichloride in 8260 as well. Thanks

Sample Locator No.
D-Z

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.
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REDLANDS, CA 92373
(909) 798-9336 • (800) 798-9336
FAX (909) 793-1559

Centrum Job # 14988

Chain of Custody Record

Project No.: 575-96034 | Project Name:

Project Manager: Frank Poss | Phone: | Fax:

Client Name: (Company) PSE | Address:

Analyses Requested

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 ~~8240~~ ~~8010~~ ~~524.2~~	8080: Pesticides PCBs Pest/PCB	8015M: ~~Diesel Fuel Screen~~	8015M: Gasoline ~~8020 BTEX~~	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	Oil & G (1664)	Remarks/ Special Instructions
S.B.11	Hay 5 - 3.0	6/2/99	1040				X		X	X							X	X	
	-4.5																		
12	Hay 1 - 0.15		1045																
13	-0.3		1050																
14	-0.9		1055																
15	-1.5		1100																
S.B.2	-3.0																		
	-4.8																		
16	Hay 2 - 0.15		1105				X		X	X							X	X	
17	-0.3		1110				X		X	X							X	X	

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/2/99	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			Received by Laboratory by:	Date	Time
				6/3/99	9:15

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No.
D-Z

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373

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

Centrum Job # 14988

Chain of Custody Record

Project No.:	Project Name:
575-96034	
Project Manager: Tank Poss	**Phone:** **Fax:**
Client Name: (Company) PSI	**Address:**

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type
18	Hay 2-0.9	6/2/99	1115	S		
19	-1.5		1120			
20	RO-1		1200			
21	RO-2		1202			
22	RO-3		1204			
23	RO-4		1206			
24	WHay3			W		
25	HAY2-3.0		11:25	S		

Analyses Requested

GCMS: 8260 ~~8240 8010 524.2~~	8080: Pesticides PCBs Pest/PCB	8015M: Diesel ~~Purgeable~~	8015M: Gasoline ~~8020 BTEX~~	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	Oil & Grease (1664)
X		X	X							X	X

Turn-around time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Remarks/ Special Instructions

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/2/99	1700			
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**
			Relinquished by:	**Date**	**Time**
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			**Received for Laboratory by:** Jeff Butler	**Date** 6/3/99	**Time** 9:15

To be completed by laboratory personnel:

Samples chilled? ☒ Yes ☐ No

Custody seals? ☐ Yes ☒ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

SAMPLE 25 added per phone conversation w/ Scott Bowers 6-3-99 @ 11:33

Sample Locator No. D-2

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 06/02/99
Date Received: 06/03/99
Job Number: 14988

Project: Caltrans: Mattox & Foothill

CASE NARRATIVE

The following information applies to samples which were received on 06/03/99 :

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.

Centrum
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Lead By ICP

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: RLB

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Digested: 06/11/99
Date Analyzed: 06/22-23/99
Batch Number: 6010S1233
Method Number: 6010

Sample ID	Detection Limit mg/kg	Lead mg/kg
Method Blank	5.0	ND
Hay6-0.15	10	**15**
Hay6-0.30	5.0	**22**

Centrum
(800) 798-9336

Lead By ICP

Client:	PSI	Date Sampled:	06/02/99
Project:	Caltrans: Mattox & Foothill	Date Received:	06/03/99
Job No.:	14988	Date Digested:	06/20/99
Matrix:	Soil	Date Analyzed:	06/21/99
Analyst:	RLB	Batch Number:	6010S1241
		Method Number:	6010

Sample ID	Detection Limit mg/kg	Lead mg/kg
Method Blank	5.0	ND
Hay6-0.90	5.0	**52**
Hay6-1.5	5.0	**34**
Hay6-3.0	5.0	**7.7**
Hay6-4.5	5.0	**7.7**

Centrum
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Lead By ICP

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: RLB

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Digested: 06/22/99
Date Analyzed: 06/23-24/99
Batch Number: 6010S1243
Method Number: 6010

Sample ID	Detection Limit mg/kg	Lead mg/kg
Method Blank	5.0	ND
Hay5-0.15	5.0	31
Hay5-0.3	5.0	55
Hay5-0.9	5.0	160
Hay5-1.5	5.0	100
Hay1-0.3	5.0	7.7
Hay1-0.9	5.0	6.8
Hay1-1.5	5.0	9.6
Hay2-0.15	5.0	31
RO-1	5.0	33
RO-2	5.0	32
RO-3	5.0	33
RO-4	5.0	29

Centrum
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QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1233

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	95.78	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	47.9	47.4	1%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
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QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1241

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	94.05	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 15063-3

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	53.3	53.8	1%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Soil
Batch #: 6010S1243

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	99.86	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay1-1.5

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	56.4	51.1	10%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum
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Lead By ICP

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Water
Analyst: RLB

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Digested: 06/21/99
Date Analyzed: 06/22/99
Batch Number: 6010W1242
Method Number: 6010

Sample ID	Detection Limit mg/L	Lead mg/L
Method Blank	0.10	ND
WHay3	0.10	ND

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1242

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	**106.2**	75 - 125	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 15063-25

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	1.065	1.073	**1%**	20%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Lead By FLAA

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: RLB

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Digested: 06/11/99
Date Analyzed: 06/24/99
Batch Number: 6010S1243
Method Number: 7420

Sample ID	Detection Limit mg/kg	Lead mg/kg
Method Blank	5.0	ND
Hay5-3.0	5.0	ND
Hay1-0.15	5.0	ND
Hay2-0.3	5.0	ND
Hay2-0.9	5.0	ND
Hay2-1.5	5.0	ND
Hay2-3.0	5.0	ND

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Soil
Batch #: 60101243
Method: 7420

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	**105.9**	75 - 125	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay1-1.5

Compound	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	61.6	58.0	**6%**	20%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: NG

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 06/07/99
Date Analyzed: 06/07/99
Batch Number: 41321S1040

Sample ID	Detection Limit mg/kg	Total Oil & Grease mg/kg
Method Blank	10	ND
Hay6-0.15	10	290
Hay6-0.30	10	270
Hay6-0.90	10	73
Hay6-1.5	10	29

EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: NG

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 06/08/99
Date Analyzed: 06/08/99
Batch Number: 41321S1041

Sample ID	Detection Limit mg/kg	Total Oil & Grease mg/kg
Method Blank	10	ND
Hay6-3.0	10	82
Hay6-4.5	10	35
Hay5-0.15	10	570
Hay5-0.30	10	330
Hay5-0.90	10	29
Hay5-1.5	10	28
Hay5-3.0	10	44
Hay1-0.15	1000	8,300
Hay1-0.3	10	73
Hay1-0.9	10	41
Hay1-1.5	10	19
Hay2-0.15	100	7,300
Hay2-0.3	10	380
Hay2-0.9	100	1,600
Hay2-1.5	10	32
RO-1	10	270
RO-2	10	310
RO-3	10	350
RO-4	10	390
HAY2-3.0	10	13

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QC Report - EPA 413.2 Oil & Grease

Matrix: Soil
Batch #: 4132S1040

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	40	124	72 - 131	Pass

Analytical Notes:

Batch Precision Results

Duplicate Sample ID: Hay6-1.5

Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Petroleum Hydrocarbons	30.53	29.17	5%	22%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

QC Report - EPA 413.2 Oil & Grease

Matrix: Soil
Batch #: 4132S1041

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	40	120	72 - 131	Pass

Analytical Notes:

Batch Precision Results

Duplicate Sample ID: HAY2-3.0

Analyte	Sample Recovery mg/Kg	Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Petroleum Hydrocarbons	12.61	13.60	8%	22%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 413.2 - Oil & Grease

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Water
Analyst: JL

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 06/11/99
Date Analyzed: 06/11/99
Batch Number: 4132W1043

Sample ID	Detection Limit mg/L	Total Oil & Grease mg/L
Method Blank	2.0	ND
WHay3	2.7	ND

QC Report - EPA 413.2 Oil & Grease

Matrix: Water
Batch #: 4132W1043

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	10	108	70 - 130	Pass

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	10.75	10.68	1%	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: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: NBP

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 06/10/99
Date Analyzed: 06/10/99
Batch Number: 8015DS1657

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/kg	mg/kg	Limit: 50 - 150%
Method Blank	10	ND	110 %
Hay6-0.15	200	690*	101 %
Hay6-0.30	10	37*	102 %
Hay6-0.90	10	10*	111 %
Hay6-1.5	10	23*	104 %
Hay6-3.0	10	16*	111 %
Hay6-4.5	10	17*	104 %
Hay5-0.15	10	34*	101 %
Hay5-0.30	10	37*	101 %
Hay5-0.90	10	31*	102 %
Hay5-1.5	10	10*	110 %
Hay5-3.0	10	18*	107 %
Hay1-0.15	100	220*	92 %
Hay1-0.3	10	22*	102 %
Hay1-0.9	10	13*	111 %
Hay1-1.5	10	11*	110 %
Hay2-0.15	10	22*	101 %
Hay2-0.3	10	41*	101 %
Hay2-0.9	10	13*	103 %
Hay2-1.5	10	13*	111 %
R0-1	10	26*	101 %

*The chromatographic pattern displayed by this sample indicates the presence of petroleum hydrocarbons other than diesel. The concentration of petroleum hydrocarbons has been quantitated against diesel and reported here as diesel.

Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: NBP

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 06/10/99
Date Analyzed: 06/10/99
Batch Number: 8015DS1658

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/kg	mg/kg	Limit: 50 - 150%
Method Blank	10	ND	112 %
RO-2	10	51*	107 %
RO-3	10	54*	101 %
RO-4	10	47*	104 %
HAY2-3.0	10	16*	111 %

*The chromatographic pattern displayed by this sample indicates the presence of petroleum hydrocarbons other than diesel. The concentration of petroleum hydrocarbons has been quantitated against diesel and reported here as diesel.

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QC Sample Report - EPA 8015M Diesel

Matrix: Soil
Batch #: 8015DS1657

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	100	91	70 - 130	Pass

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
Diesel	91	93	2%	29%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA 8015M Diesel

Matrix: Soil
Batch #: 8015DS1658

Batch Accuracy Results

Sample ID: Laboratory Control Sample

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

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
Diesel	100	98	**2%**	29%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client:	PSI	Date Sampled:	06/02/99
Project:	Caltrans: Mattox & Foothill	Date Received:	06/03/99
Job No.:	14988	Date Extracted:	06/11/99
Matrix:	Water	Date Analyzed:	06/11/99
Analyst:	NBP	Batch Number:	8015DW1659

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/L	mg/L	Limit: 50 - 150%
Method Blank	0.40	ND	95 %
WHay3	0.45	**0.48***	95 %

*The chromatographic pattern displayed by this sample indicates the presence of petroleum hydrocarbons lighter than diesel. The concentration of petroleum hydrocarbons has been quantitated against diesel and reported here as diesel.

QC Sample Report - EPA 8015M Diesel

Matrix: Water
Batch #: 8015DW1659

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	0.8	87	70 - 130	Pass

Analytical Notes:

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	0.69	0.68	1%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: GR

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/07/99
Batch Number: 8015GS2250

	Detection Limit	Petroleum Hydrocarbons as Gasoline
Sample ID	mg/kg	mg/kg
Method Blank	0.50	ND
Hay 6-0.15	0.50	ND
Hay 6-0.30	0.50	ND
Hay 6-0.90	0.50	ND
Hay 6-1.5	0.50	ND

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Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: GR

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/08/99
Batch Number: 8015GS2252

Sample ID	Detection Limit mg/kg	Petroleum Hydrocarbons as Gasoline mg/kg
Method Blank	0.50	ND
Hay 6-3.0	0.50	ND
Hay 6-4.5	0.50	ND
Hay 5-0.15	0.50	ND
Hay 5-0.30	0.50	ND
Hay 5-0.90	0.50	ND
Hay 5-1.5	0.50	ND
Hay 5-3.0	0.50	ND
Hay 1-0.15	0.50	ND
Hay 1-0.3	0.50	ND
Hay 1-0.9	0.50	ND
Hay 1-1.5	0.50	0.62
Hay 2-0.15	0.50	0.51
Hay 2-0.3	0.50	ND
Hay 2-0.9	0.50	ND
Hay 2-1.5	0.50	ND
RO-1	0.50	ND
RO-2	0.50	ND
RO-3	0.50	ND
RO-4	0.50	ND
HAY2-3.0	0.50	ND

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QC Sample Report - EPA 8015M Gasoline

Matrix: Soil
Batch #: 8015GS2250

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	**101**	70 - 130	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay 6-0.15

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.55	9.39	**2%**	25%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA 8015M Gasoline

Matrix: Soil
Batch #: 8015GS2252

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	97	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay 6-3.0

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	10.22	10.33	1%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Water
Analyst: GR

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/03/99
Batch Number: 8015GW2245

Sample ID	Detection Limit	Petroleum Hydrocarbons as Gasoline
	mg/L	mg/L
Method Blank	0.5	ND
WHay3	0.5	ND

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QC Sample Report - EPA 8015M Gasoline

Matrix: Water
Batch #: 8015GW2145

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	97	70 - 130	Pass

Analytical Notes:

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	9.70	11.12	14%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Blank	Hay6-0.15	Hay6-0.30	Hay6-0.90	Hay6-1.5	Hay6-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.10	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
(800) 798-9336

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Blank	Hay6-0.15	Hay6-0.30	Hay6-0.90	Hay6-1.5	Hay6-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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	0.01	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MtBE)	0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	**0.004**	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	**0.002**	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	0.005	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	**0.001**	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:	Blank	Hay6-0.15	Hay6-0.30	Hay6-0.90	Hay6-1.5	Hay6-3.0
Dibromofluoromethane		104	109	104	104	103	101
Toluene-d8		100	100	97	99	97	95
Bromofluorobenzene		104	103	91	81	91	81

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay6-4.5	Hay5-0.15	Hay5-0.30	Hay5-0.90	Hay5-1.5	Hay5-3.0
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.10	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Centrum
(800) 798-9336

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay6-4.5	Hay5-0.15	Hay5-0.30	Hay5-0.90	Hay5-1.5	Hay5-3.0
Compounds	**DL**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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	0.01	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MtBE)	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	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	0.005	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:	Hay6-4.5	Hay5-0.15	Hay5-0.30	Hay5-0.90	Hay5-1.5	Hay5-3.0
Dibromofluoromethane	101	108	109	107	102	109
Toluene-d8	97	98	97	97	96	101
Bromofluorobenzene	99	99	98	99	82	98

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay1-0.15	Hay1-0.3	Hay1-0.9	Hay1-1.5	Hay2-0.15	Hay2-0.3
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.10	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay1-0.15	Hay1-0.3	Hay1-0.9	Hay1-1.5	Hay2-0.15	Hay2-0.3
Compounds	**DL**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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	0.01	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MtBE)	0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	0.002	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	0.005	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	ND	ND	0.002	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:	Hay1-0.15	Hay1-0.3	Hay1-0.9	Hay1-1.5	Hay2-0.15	Hay2-0.3
Dibromofluoromethane	105	103	103	97	101	105
Toluene-d8	97	100	99	99	89	93
Bromofluorobenzene	95	98	101	96	84	96

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay2-0.9	Hay2-1.5	RO-1	RO-2	RO-3	RO-4
Compounds	DL	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Acetone	0.10	ND	ND	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME	0.005	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	0.01	ND	ND	ND	ND	ND	ND
tert-Butanol (TBA)	0.05	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	0.00	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	0.00	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	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

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

	Sample ID:	Hay2-0.9	Hay2-1.5	RO-1	RO-2	RO-3	RO-4
Compounds	**DL**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	0.005	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.00	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	0.01	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether (MtBE)	0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	**0.003**	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	0.005	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	**0.001**	**0.001**	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:	Hay2-0.9	Hay2-1.5	RO-1	RO-2	RO-3	RO-4
Dibromofluoromethane	105	107	103	110	104	112
Toluene-d8	102	96	95	97	97	95
Bromofluorobenzene	97	98	84	82	94	84

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

Sample ID: HAY2-3.0		
Compounds	**DL**	**mg/Kg**
Acetone	0.10	ND
tert-Amyl Methyl Ether (TAME	0.005	ND
Benzene	0.001	ND
Bromobenzene	0.005	ND
Bromochloromethane	0.005	ND
Bromodichloromethane	0.001	ND
Bromoform	0.005	ND
Bromomethane	0.01	ND
tert-Butanol (TBA)	0.05	ND
2-Butanone (MEK)	0.01	ND
n-Butylbenzene	0.002	ND
sec-Butylbenzene	0.00	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	0.00	ND
1,2-Dibromoethane	0.002	ND
1,2-Dibromo-3-chloropropane	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

EPA 8260 - Volatile Organics with Oxygenates

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Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Soil
Analyst: MBH

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/11-13/99
Batch Number: 8260S1731
8260S1733
8260S1734

Sample ID: HAY2-3.0		
Compounds	**DL**	**mg/Kg**
cis-1,3-Dichloropropene	0.001	ND
trans-1,3-Dichloropropene	0.001	ND
Diisopropyl Ether (DIPE)	0.005	ND
Ethylbenzene	0.001	ND
Ethyl tert-Butyl Ether (EtBE)	0.005	ND
Hexachlorobutadiene	0.00	ND
2-Hexanone	0.01	ND
Isopropylbenzene	0.001	ND
p-Isopropyltoluene	0.002	ND
Methylene chloride	0.01	ND
4-Methyl-2-pentanone	0.01	ND
Methyl tert-Butyl Ether (MtBE)	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
Trichloroethene	0.001	ND
1,2,3-Trichloropropane	0.003	ND
Trichlorofluoromethane	0.001	ND
Trichlorotrifluoroethane	0.005	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: HAY2-3.0	
Dibromofluoromethane	99
Toluene-d8	102
Bromofluorobenzene	101

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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1731

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	120	59 - 172	Pass
Benzene	0.020	107	66 - 142	Pass
Trichloroethene	0.020	100	71 - 137	Pass
Toluene	0.020	106	59 - 139	Pass
Chlorobenzene	0.020	112	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 14981-34

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	0.0224	2%	22%	Pass
Benzene	0.0213	0.0211	1%	21%	Pass
Trichloroethene	0.0214	0.0200	7%	24%	Pass
Toluene	0.0240	0.0218	9%	21%	Pass
Chlorobenzene	0.0225	0.0220	2%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1733

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	115	59 - 172	Pass
Benzene	0.020	110	66 - 142	Pass
Trichloroethene	0.020	102	71 - 137	Pass
Toluene	0.020	105	59 - 139	Pass
Chlorobenzene	0.020	109	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay2-1.5

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0261	0.0242	7%	22%	Pass
Benzene	0.0237	0.0235	1%	21%	Pass
Trichloroethene	0.0222	0.0230	4%	24%	Pass
Toluene	0.0238	0.0229	4%	21%	Pass
Chlorobenzene	0.0257	0.0234	9%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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QC Sample Report - EPA Method 8260

Matrix: Soil
Batch #: 8260S1734

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	107	59 - 172	Pass
Benzene	0.020	99	66 - 142	Pass
Trichloroethene	0.020	94	71 - 137	Pass
Toluene	0.020	94	59 - 139	Pass
Chlorobenzene	0.020	101	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Hay2-3.0

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0256	0.0229	11%	22%	Pass
Benzene	0.0238	0.0225	5%	21%	Pass
Trichloroethene	0.0236	0.0213	10%	24%	Pass
Toluene	0.0248	0.0222	11%	21%	Pass
Chlorobenzene	0.0249	0.0220	12%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Water
Analyst: JMR

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/14/99
Batch Number: 8260W1737

	Sample ID:	Blank	WHay3
Compounds	DL	µg/L	µg/L
Acetone	50	ND	ND
tert-Amyl Methyl Ether (TAME)	5.0	ND	ND
Benzene	0.5	ND	ND
Bromobenzene	1.0	ND	ND
Bromochloromethane	1.0	ND	ND
Bromodichloromethane	0.5	ND	ND
Bromoform	0.5	ND	ND
Bromomethane	0.5	ND	ND
tert-Butanol (TBA)	50	ND	ND
2-Butanone (MEK)	10	ND	ND
n-Butylbenzene	0.5	ND	ND
sec-Butylbenzene	0.5	ND	ND
tert-Butylbenzene	0.5	ND	ND
Carbon disulfide	10	ND	ND
Carbon tetrachloride	0.5	ND	ND
Chlorobenzene	0.5	ND	ND
Chloroethane	0.5	ND	ND
Chloroform	0.5	ND	ND
Chloromethane	0.5	ND	ND
2-Chlorotoluene	0.5	ND	ND
4-Chlorotoluene	0.5	ND	ND
Dibromochloromethane	0.5	ND	ND
1,2-Dibromoethane	0.5	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND
Dibromomethane	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND
Dichlorodifluoromethane	0.5	ND	ND
1,1-Dichloroethane	0.5	ND	ND
1,2-Dichloroethane	0.5	ND	ND
1,1-Dichloroethene	0.5	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND
1,2-Dichloropropane	0.5	ND	ND
1,3-Dichloropropane	0.5	ND	ND
2,2-Dichloropropane	0.5	ND	ND
1,1-Dichloropropene	0.5	ND	ND

Centrum
(800) 798-9336

EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988
Matrix: Water
Analyst: JMR

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Analyzed: 06/14/99
Batch Number: 8260W1737

	Sample ID:	Blank	WHay3
Compounds	DL	µg/L	µg/L
cis-1,3-Dichloropropene	0.5	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND
Diisopropyl Ether (DIPE)	5.0	ND	ND
Ethylbenzene	0.5	ND	ND
Ethyl tert-Butyl Ether (EtBE)	5.0	ND	ND
Hexachlorobutadiene	0.5	ND	ND
2-Hexanone	10	ND	ND
Isopropylbenzene	0.5	ND	ND
p-Isopropyltoluene	0.5	ND	ND
Methylene chloride	10	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND
Methyl-tert-butyl ether (MtBE)	1.0	ND	2.4
Napthalene	0.5	ND	ND
n-Propylbenzene	0.5	ND	ND
Styrene	0.5	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND
Tetrachloroethene	0.5	ND	ND
Toluene	0.5	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND
Trichloroethene	0.5	ND	ND
1,2,3-Trichloropropane	0.5	ND	ND
Trichlorofluoromethane	0.5	ND	ND
Trichlorotrifluoroethane	5.0	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND
Vinyl chloride	0.5	ND	ND
Xylenes (total)	1.5	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	WHay3
Dibromofluoromethane	102	103
Toluene-d8	99	102
Bromofluorobenzene	105	98

Centrum
(800) 798-9336

QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: 8260W1737

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	107	59 - 172	Pass
Benzene	20.0	97	66 - 142	Pass
Trichloroethene	20.0	92	71 - 137	Pass
Toluene	20.0	93	59 - 139	Pass
Chlorobenzene	20.0	100	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	21.4	19.5	9%	22%	Pass
Benzene	19.4	19.1	1%	21%	Pass
Trichloroethene	18.5	18.7	1%	24%	Pass
Toluene	18.8	19.7	4%	21%	Pass
Chlorobenzene	19.9	20.1	1%	21%	Pass

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:

Centrum Analytical Laboratories, Inc.

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REDLANDS, CA 92373

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FAX (909) 793-1559

Centrum Job # 14981

Chain of Custody Record

Page 1 of 4

Project No.:	Project Name:
575-9G034	Caltrans: Ma
Project Manager:	**Phone:** / **Fax:**
Frank Poss	(510) 785-1111 / (510) 785-1192
Client Name: (Company)	**Address:**
PSI	1320 W. Winton Ave, Hayward

Analyses Requested

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 ~~8240 8010 8021~~	8080: Pesticides PCBs Pest/PCB	8015M: Diesel ~~Fuel Screen~~	8015M: Gasoline ~~8020 BTEX~~	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (Cam)	EPA 1664 (O&G)	Remarks/ Special Instructions
1	Hay3-0.15	6/1/99	850	S			X		X	X							X	X	
2	-0.3	↓	855	↓			↓		↓	↓							↓	↓	
3	-0.9		900																
4	-1.5		905																
5	-3.0		910																
6	-4.5		915	↓															
	~~Hay3-0.15~~																		
7	Hay4-0.15		1000	S															
8	-0.3		1005	↓															
9	-0.9	↓	1010	↓			↓		↓	↓							↓	↓	

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/1/99	1700			
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**
			Relinquished by:	**Date**	**Time**
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			**Received for Laboratory by:**	**Date**	**Time**
			Jeff Botts	6/2/99	9:20

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes: Please include ethyl dibromide and ethylene dichloride in 8260 scan Thanks

Sample Locator No. D-1

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373

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FAX (909) 793-1559

Centrum Job # 14981

Chain of Custody Record

Page 2 of 4

Project No.: 575 - 96034

Project Name: Caltrans: Mathox & Foothill

Project Manager: Frank Poss

Phone: Fax:

Client Name: (Company) PST

Address:

Analyses Requested

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 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	EPA 1664 (O&G)	Remarks/ Special Instructions
10	Hay 4-1.5	6/1/99	1015	S			X		X	X							X	X	
11	-3.0	↑	1020	↓			↓		↓	↓							↓	↓	
12	-4.5		1025																
	~~Hay 4~~																		
13	Hay 7-0.15		1110	S			X		X	X							X	X	
14	-0.30		1115				↓		↓	↓							↓	↓	
15	-0.90		1120																
16	-1.5		1125																
17	-3.0		1130																
18	-4.5	↓	1135	↓															

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/1/99	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			Received for Laboratory by: Jeff Batt	Date 6/2/99	Time 9:20

To be completed by laboratory personnel:

Samples chilled? ☐ Yes ☐ No

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No. D-1

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

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FAX (909) 793-1559

Chain of Custody Record

Centrum Job # 14981

Project No.: 575-96034
Project Name: Caltrans: McHoy + Foothill
Project Manager: Frank Ross
Phone: Fax:
Client Name: (Company) PSI
Address:

Analyses Requested

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 ~~8240~~ ~~8010~~ ~~8021~~	8080: Pesticides PCBs Pest/PCB	8015M: Diesel ~~Fuel Screen~~	8015M: Gasoline ~~8020~~ Gas/BTEX	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	EPA 1664 (O+G)	Remarks/ Special Instructions
	~~WHay7~~			W			X		X	X							X	X	S.B.
19	Hay 9-0.15	6/1/99	1200	S			X		X	X							X	X	
20	-0.30		1205																
21	-0.90		1210																
22	-1.5		1215																
23	-3.0		1220																
24	-4.5		1225																
25	Hay 10-0.15		1240																
26	-0.30		1245																
27	-0.90		1245																

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/1/99	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			Received for Laboratory by: Jeff Batty	Date 6/2/99	Time 9:20

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried
- ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No.
D-1

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Client Copy

GeoTest
3960 E. Gilman Street
Long Beach, 90815
Telephone: (310) 498-9615 (800) 624-5744
Fax: (310) 597-0786

CENTRAL ANALYTICAL

14981

CHAIN-OF-CUSTODY RECORD

GEOTEST
PROJECT NO:
DATE 6/1/99 PAGE 4 OF 4

PROJECT NAME Caltrans : Mather & Foothill
ADDRESS
SAMPLER'S SIGNATURE
PRINTED NAME Scott Bones
CLIENT PROJECT NO. 575-9C034
PROJECT MANAGER Frank Poss

	SAMPLE NO.	DATE	TIME	LOCATION	METHODS: TPH GASOLINE	TPH DIESEL	BTEX	418.1	8260	Total Lead (Gold) EPA 1664 (O+G)				MATRIX	CONTAINER TYPE	# OF CONTAINERS	SPECIAL HANDLING
28	Hay 10-1.5	6/1/99	1250		X	X			X	X	X						
29	Hay 10 - 3.0		1255														
30	Hay 10 - 4.5		1300														
31	Hay 8 - 0.15		1410														
32	- 0.3		1415														
33	- 0.9		1420														
34	- 1.5		1425														
35	- 3.0		1430														
36	- 4.5		1435														

1 RELINQUISHED BY	DATE	3 RELINQUISHED BY	DATE	5 RELINQUISHED BY	DATE
SIGNATURE Scott Bones	6/1/99	SIGNATURE		SIGNATURE	
PRINTED NAME PSI	TIME 1700	PRINTED NAME	TIME	PRINTED NAME	TIME
COMPANY		COMPANY		COMPANY	
2 RECEIVED BY	DATE	**4 RECEIVED BY**	DATE	**6 RECEIVED BY (LAB)**	DATE 6/2/99
SIGNATURE		SIGNATURE		SIGNATURE Jeff Butler / Jeff Butler	
PRINTED NAME	TIME	PRINTED NAME	TIME	PRINTED NAME Centrum Analytical	TIME 9:20
COMPANY		COMPANY		COMPANY	

SAMPLE CONDITIONS
RECEIVED ON ICE YES/NO
CHAIN OF CUSTODY SEAL YES/NO

PROJECT COMMENTS

Chilled shipment

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 06/01/99
Date Received: 06/02/99
Job Number: 14981A

Project: Caltrans:Mattox & Foothill

CASE NARRATIVE

The following information applies to samples which were received on 06/02/99 :

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

This report is an addendum to Centrum Job #14981 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 08/04/99.

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 artalyzed for.

Centrum
(800) 798-9336

STLC Lead by ICP

Client:	PSI	Date Sampled:	06/01/99
Project:	Caltrans:Mattox & Foothill	Date Received:	06/02/99
Job No.:	14981A	Date Extracted:	07/30/99
Matrix:	STLC Leachate*	Date Analyzed:	08/02/99
Analyst:	RLB	Batch Number:	6010W1280
		Method Number:	6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	2.5	ND
Hay3-1.5	2.5	ND
Hay9-0.90	2.5	6.3
Hay10-0.30	2.5	6.6
Hay8-0.3	2.5	ND

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

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1280

Batch Accuracy Results

Sample ID: Initial Calibration Verification Standard

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	**98.1**	75 - 125	**Pass**

Analytical Notes:

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	0.981	0.985	**0%**	20%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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FAX (909) 793-1559

Centrum Job # 14981

Chain of Custody Record

Page 1 of 4

Project No.:	Project Name:
575-96034	Caltrans: Ma
Project Manager:	**Phone:** / **Fax:**
Frank Poss	(510) 785-1111 / (510) 785-1192
Client Name: (Company)	**Address:**
PSI	1320 W. Winton Ave, Hayward

Analyses Requested

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 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	EPA 1664 (5520)	STLC Pb	Remarks/ Special Instructions
1	Hay3-0.15	6/1/99	850	S			X		X	X							X	X		
2	-0.3		855																	
3	-0.9		900																	
4	-1.5		905																⊗	
5	-3.0		910																	
6	-4.5		915	↓																
	~~Hay3-0.15~~	~~6/1/99~~	~~915~~	~~S~~	~~Hay3-0.15~~	~~6/1/99~~	~~915~~	~~S~~	~~Hay3-0.15~~	~~6/1/99~~	~~915~~	~~S~~	~~Hay3-0.15~~	~~6/1/99~~	~~915~~	~~S~~	~~Hay3-0.15~~	~~6/1/99~~	~~915~~	~~S~~
7	Hay4-0.15		1000	S																
8	-0.3		1005	↓																
9	-0.9	↓	1010	↓																

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/1/99	1700			
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**
			Relinquished by:	**Date**	**Time**
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			**Received for Laboratory by:** Jeff Butts	**Date** 6/2/99	**Time** 9:20

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes: Please include ethyl dibromide and ethylene dichloride in 8260 scan Thanks

Sample Locator No. D-1

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

Centrum Job # 14981

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FAX (909) 793-1559

Chain of Custody Record

Page 2 of 4

Project No.: 375 - 96034

Project Name: Caltrans: Mathox & Foothill

Project Manager: Frank Poss

Phone: Fax:

Client Name: (Company) PSI

Address:

Analyses Requested

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 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	EPA 1664 (O&G)
10	Hay 4-1.5	6/1/99	1015	S			X		X	X							X	X
11	-3.0		1020															
12	-4.5		1025															
	~~Hay 4~~																	
13	Hay 7-0.15		1110	S			X		X	X							X	X
14	-0.30		1115															
15	-0.90		1120															
16	-1.5		1125															
17	-3.0		1130															
18	-4.5		1135															

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Remarks/ Special Instructions

	Date	Time
Relinquished by: (Sampler's Signature)	6/1/99	1700
Received by:		
Relinquished by:		
Received by:		
Relinquished by:		
Received for Laboratory by:	6/2/99	9:20

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by laboratory personnel:

Samples chilled? ☐ Yes ☐ No

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No. D-1

White Copy - Original (Accompanies Samples)

Yellow Copy - Centrum Files

Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

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

Chain of Custody Record

Centrum Job # 14981

Project No.: 575-96034
Project Name: Caltrans: Ma Hox + Fac
Project Manager: Frank Poss
Phone: Fax:
Client Name: (Company) PSI
Address:

Analyses Requested

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 8240 8010 524.2	8080: Pesticides PCBs Pest/PCB	8015M: Diesel Fuel	8015M: Gasoline 8020 BTEX	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	EPA 1664 (O+G)	STLC Pb	Remarks/ Special Instructions
	WHAT?			W			X		X	X							X	X		S. T.
19	Hay 9-0.15	6/1/99	1200	S			X		X	X							X	X		
20	-0.30		1205																⊗	
21	-0.90		1210																	
22	-1.5		1215																	
23	-3.0		1220																	
24	-4.5		1225																	
25	Hay 10-0.15		1240																	
26	-0.30		1245																⊗	
27	-0.90		1245																	

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

	Date	Time
Relinquished by: (Sampler's Signature)	6/1/99	1700
Received by:		
Relinquished by:		
Received by:		
Relinquished by:		
Received for Laboratory by: Jeff Batley	6/2/99	9:20

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by laboratory personnel:
- Samples chilled? ☑ Yes ☐ No
- Custody seals? ☐ Yes ☑ No
- All sample containers intact? ☑ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☑ Hand carried
- ☒ Airborne

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Sample Locator No.: D-1

Laboratory Notes:

White Copy - Original (Accompanies Samples) — Yellow Copy - Centrum Files — Pink Copy - Client Copy

GEOTEST
3990 E. Gilman Street
Long Beach, 90815
Telephone: (310) 498-8875 (800) 624-5744
Fax: (310) 597-0768

CENTRUM ANALYTICAL,

CHAIN-OF-CUSTODY RECORD

14981

GEOTEST PROJECT NO:
DATE 6/1/99 PAGE 4 OF 4

PROJECT NAME Caltrans - Mattar & Foothill
ADDRESS
SAMPLER'S SIGNATURE
PRINTED NAME Scott Bowers
CLIENT PROJECT NO. 575-9G034
PROJECT MANAGER Frank Ross

	SAMPLE NO.	DATE	TIME	LOCATION	METHODS: TPH GASOLINE	TPH DIESEL	BTEX	418.1	8260	7000 Lead (Cam)	EPA 1664 (O&G)	STLC Pb	MATRIX	CONTAINER TYPE	# OF CONTAINERS	SPECIAL HANDLING
28	Hay 10-1.5	6/1/99	1250		X	X			X	X	X					
29	Hay 10-3.0		1255													
30	Hay 10-4.5		1300													
31	Hay 8-0.15		1410													
32	-0.3		1415									X				
33	-0.9		1420													
34	-1.5		1425													
35	-3.0		1430													
36	-4.5		1435													

1 RELINQUISHED BY	DATE 6/1/99	3 RELINQUISHED BY	DATE	5 RELINQUISHED BY	DATE	SAMPLE CONDITIONS	
SIGNATURE		SIGNATURE		SIGNATURE		RECEIVED ON ICE	YES/NO
PRINTED NAME Scott Bowers	TIME 1700	PRINTED NAME	TIME	PRINTED NAME	TIME	CHAIN OF CUSTODY SEAL	YES/NO
COMPANY PSI		COMPANY		COMPANY		PROJECT COMMENTS	
2 RECEIVED BY	DATE	4 RECEIVED BY	DATE	6 RECEIVED BY (LAB)	DATE 6/2/99		
SIGNATURE		SIGNATURE		SIGNATURE Jeff Butler			
PRINTED NAME	TIME	PRINTED NAME	TIME	PRINTED NAME Jeff Butler	TIME 9:20		
COMPANY		COMPANY		COMPANY Centrum Analytical		Chilled & Intact	

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 06/02/99
Date Received: 06/03/99
Job Number: 14988B

Project: Caltrans: Mattox & Foothill

CASE NARRATIVE

The following information applies to samples which were received on 06/03/99 :

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

This report is an addendum to Centrum Job #14988 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 08/04/99.

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.

Centrum
(800) 798-9336

STLC Lead By ICP

Client: PSI
Project: Caltrans: Mattox & Foothill
Job No.: 14988B
Matrix: STLC Leachate*
Analyst: RLB

Date Sampled: 06/02/99
Date Received: 06/03/99
Date Extracted: 07/30/99
Date Analyzed: 08/02/99
Batch Number: 6010W1280
Method Number: 6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	2.5	ND
Hay6-0.90	2.5	3.0
Hay5-0.30	2.5	2.8
Hay5-0.90	2.5	2.8
Hay5-1.5	2.5	ND

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

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1280

Batch Accuracy Results

Sample ID: Initial Calibration Verification Standard

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	98.5	75 - 125	Pass

Analytical Notes:

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	0.985	1.034	5%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum Job # 71188

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373

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

Chain of Custody Record

Project No.: 577-76034	Project Name: [illegible]		
Project Manager: [illegible]	Phone: [illegible] 785-1111	Fax: (510) 785-1192	
Client Name: (Company) PSI	Address: 1220 W. Winton Ave, Hayward		

Analyses Requested

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 ~~8010~~ ~~8240~~	8080: Pesticides PCBs Pest/PCB	8015M: Diesel	8015M: Gasoline	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Total Lead (6010)	O+G (1664)	STLC Pb
1	Hay6-01	6/[illegible]	915	S			X		X	X							X	X	
[illegible]	-02	↓	920	↓			↓		↓	↓							↓	↓	(X)
[illegible]	-03		925																
	-04		930																
	-05		935																
	-06		940																
	11 [illegible]																		(X)
	[illegible]		1020																(X)
	[illegible]		1025																(X)
[illegible]	[illegible]	↓	1030	↓			↓		↓	↓							↓	↓	(X)

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Remarks/ Special Instructions

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
[signature]	6/26	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
			Received for Laboratory by: [signature]	Date: [illegible]	Time: 1115

To be completed by laboratory personnel:
- Samples chilled? ☒ Yes ☐ No
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☐ Courier ☐ UPS/Fed Ex ☐ Hand carried [illegible]

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

Laboratory Notes: [illegible]

Sample Locator No. D-Z

White Copy - Original (Accompanies Samples)

Yellow Copy - Centrum Files

Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373

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FAX (909) 793-1559

Chain of Custody Record

Centrum Job # 941[illegible]

Page 2 of 3

Project No.: 275-96034	Project Name:	
Project Manager: [illegible]	Phone:	Fax:
Client Name: (Company) [illegible]	Address:	

Analyses Requested

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 8240 8010 524.2	8080: Pesticides PCBs Pest/PCB	8015M: Diesel-Fuel Screen	8015M: Gasoline 8020 Benzene	418.1 (TRPH)	Semivolatiles: 8270 625	Metals: TTLC(CAM) PP, RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	TPH Lead (8015M)	Oil & Grease (1664)		Remarks/ Special Instructions
11	Hwy 5 - 3.0	4/1/99	1040				X		X	X							X	X		
	- 4.5																			
12	Hwy 1 - 0.15		1045																	
13	- 0.5		1050																	
14	- 0.9		1055																	
15	- 1.5		1100																	
	- 3.0																			
	- 4.5																			
16	Hwy 2 - 0.15		1105				X		X	X							X	X		
17	- 0.3		1110				X		X	X							X	X		

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
[illegible]	4/2/99	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			Received for Laboratory by: [illegible]	4/1/99	1715

To be completed by laboratory personnel:

Samples chilled? ☒ Yes ☐ No

Custody seals? ☐ Yes ☒ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried ☒ [illegible]

Turn-around time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No.

D-2

White Copy - Original (Accompanies Samples) | Yellow Copy - Centrum Files | Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

Centrum Job # 74788

290 TENNESSEE STREET
REDLANDS, CA 92373

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

Chain of Custody Record

Project No.: t27-960341

Project Name:

Project Manager:

Phone:

Fax:

Client Name: (Company) FSI

Address:

Analyses Requested

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 625	Metals: TTLC(CAM) PP RCRA	Lead Only	pH TDS TSS Conductivity COD	Flashpoint Fluoride Hex Chrome	Tot. Lead (6010)	O&G (1664)	Remarks/ Special Instructions
1	H-1Y2-U9	6/2/99	1115	S			X		X	X							X	X	
	-15		1120																
	RU-1		1200																
	RU-2		1202																
	RU-3		1204																
	RU-4		1206																
4	WH-3			W															
5	HA42-3.0		11:25	S															

Turn-around time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

* Requires prior approval, additional charges apply

Relinquished by: (Sampler's Signature)	Date	Time	Relinquished by:	Date	Time
	6/2/99	1700			
Received by:	Date	Time	Received by:	Date	Time
			Relinquished by:	Date	Time
			Received for Laboratory by:	Date	Time
				6/4/	7:45

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by laboratory personnel:

Samples chilled? ☒ Yes ☐ No

Custody seals? ☐ Yes ☒ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal fee $5

Laboratory Notes:

Sample Locator No.

D-2

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Client Copy

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 06/02/99
Date Received: 06/03/99
Job Number: 14988B

Project: Caltrans: Mattox & Foothill

CASE NARRATIVE

The following information applies to samples which were received on 06/03/99 :

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

This report is being re-issued at the request of our client. There have been no changes in the results as previously reported. The date of re-issue is 08/17/99.

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

Report approved by:

Roberto Vega, Jr.
FOR
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.

Centrum
(800) 798-9336

STLC Lead By ICP

Client:	PSI	Date Sampled:	06/02/99
Project:	Caltrans: Mattox & Foothill	Date Received:	06/03/99
Job No.:	14988B	Date Extracted:	07/30/99
Matrix:	STLC Leachate*	Date Analyzed:	08/02/99
Analyst:	RLB	Batch Number:	6010W1280
		Method Number:	6010

	Detection Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	2.5	ND
Hay6-0.90	2.5	**3.0**
Hay5-0.30	2.5	**2.8**
Hay5-0.90	2.5	**2.8**
Hay5-1.5	2.5	ND

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

Centrum
(800) 798-9336

QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1280

Batch Accuracy Results

Sample ID: Initial Calibration Verification Standard

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	**98.5**	75 - 125	**Pass**

Analytical Notes:

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	0.985	1.034	**5%**	20%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate