PARSONS ENGINEERING SCIENCE, INC.

290 Elwood Davis Road, Suite 312 • Liverpool, New York 13088 • (315) 451-9560 • Fax (315) 451-9570

November 25, 1997

Ms. Susan Hugo
Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RE: Quarterly Status Report
Greyhound Terminal (Location No. 8934)
Oakland, California

Dear Ms. Hugo:

On behalf of Greyhound Lines, Inc. (Greyhound), Parsons Engineering Science, Inc. (Parsons ES) is pleased to present the October Quarterly Status Report for the Greyhound terminal in Oakland, California. The Quarterly Status Report provides the information specified in "Appendix A" of the "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" (August 1990). Greyhound has reviewed and approved the enclosed report, and agrees with the conclusions and recommendations provided herein.

Monitoring activities and groundwater sampling were conducted on October 7 and 8, 1997. A third site visit was made on October 18, 1997 to recollect samples from ES-2, ES-3, BC-1 and BC-3 (due to sample bottle breakage during initial sample shipment). Table 1 summarizes fluid levels and other pertinent information. Nine groundwater samples were collected and analyzed for MTBE, benzene, toluene, ethylbenzene, and xylene (MTBE/BTEX) (EPA Method 8020), total diesel petroleum hydrocarbons (TPH-D), (Modified EPA Method 8015), total gasoline petroleum hydrocarbons (TPH-G, Modified EPA Method 8015), and total polynuclear aromatic hydrocarbons (PAHs), (EPA Method 8310). Monitoring well locations are shown on Figure 1. Analytical results are summarized in Table 2. During the October site visit, a slight hydrocarbon film was observed in ES-1. No measurable free product was observed in any of the other wells monitored.

The next groundwater sampling event will be conducted in January 1998. The next quarterly status report will be prepared and submitted to your department during February 1998. If you have any questions or require additional information, please call us at (315) 451-9560.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.

CRTorell
Christopher R. Torell – (315) 451-9570 ~~fax~~
Project Manager (315) 451 9560 phone

D. Chaffin
David L. Chaffin, R.G.
California Registered Geologist (No. 4885)

cc: Rita Felton, GLI, Dallas, TX
Kevin Graves, Regional Water Quality Control Board
Env. Mgr.
Greyhound Lines Inc.
P.O. Box 660362
Dallas, TX 75266-0362
Fax (214) 849-6163

OCTOBER 1997
QUARTERLY STATUS REPORT
GREYHOUND TERMINAL
OAKLAND, CALIFORNIA

- **Site Background:**

A preliminary site investigation was completed by Engineering-Science, Inc. (ES) in January 1992. Five monitoring wells (ES-1 through ES-5 in Figure 1) were installed on site and sampled during the investigation. The Preliminary Site Investigation report was submitted to the Alameda County Department of Environmental Health (ACDEH) on January 27, 1992.

Based on the results of the preliminary investigation, a groundwater monitoring program was initiated by Greyhound in June 1992 to assess the impact of former UST operations on groundwater. The program includes monthly groundwater level measurements, quarterly groundwater sampling, and reporting.

Based on the presence of measurable thicknesses of free product discovered in four onsite monitoring wells, Greyhound subsequently proposed the installation of an automated free product recovery system. Upon ACDEH approval in October 1992, Greyhound obtained the required permits and installed a recovery system onsite during the week of November 9, 1992. A report detailing recovery system installation was submitted to ACDEH on December 18, 1992. The recovery system was placed in operation during the week of January 4, 1993 after discharge permit conditions were finalized with the East Bay Municipal Utility District (EBMUD).

In a letter to Greyhound dated October 23, 1992, ACDEH requested that Greyhound provide documentation regarding the underground fuel storage tank system (UST) removal, including disposal documentation. Greyhound subsequently prepared a Tank Closure Documentation Report for the facility. The report was submitted to ACDEH on December 15, 1992.

In July 1993, Greyhound implemented a Supplemental Site Assessment at the facility to define the full extent of contamination both on and offsite. Six monitoring wells (ES-6 through ES-11 in Figure 1) were installed and sampled during the investigation. Results of the Supplemental Site Assessment indicated that the residual soil and groundwater contamination is limited to the former tank pit area onsite. Greyhound presented these results to ACDEH in a meeting on September 1, 1993. At that time, ACDEH indicated that a risk assessment could be prepared to support "alternative points of compliance" or site-specific cleanup levels for this site. Greyhound submitted a Preliminary Risk Evaluation Report to ACDEH in October 1993. A Supplemental Site Assessment Report was submitted in November 1993.

During October 1995, the scope of the quarterly groundwater sampling program was reduced to consist of collecting and analyzing samples from three monitoring wells (ES-3, ES-4, and ES-6) with annual sampling of ES-7, ES-8, and ES-11. The reduction was discussed during an October 13, 1995 meeting between Greyhound and ACDEH, and confirmed in an October 31, 1995 letter from Greyhound to ACDEH.

In a February 19, 1997 letter, ACDEH authorized deactivation of the free product recovery system and modified the groundwater monitoring program. The modified groundwater program consists of quarterly monitoring for the presence of free product, quarterly measurement of groundwater elevations, quarterly sampling of wells ES-1, ES-2, ES-3, ES-4, ES-5, ES-6, BC-1, BC-2, and BC-3; and annual sampling of wells ES-7, 8, and 11. Analysis of TPH-G, TPH-D, BTEX, MTBE, and PAHs (if TPH-D is detected) was specified. The free product recovery system was deactivated during the week of January 6, 1997.

- **Water level measurements from most recent sampling event:**

  Monitoring well data obtained on July 15 and 16, 1997 are presented in Table 1. Groundwater elevations determined from the water level measurements are shown in Figure 2. The elevations indicate that the groundwater flow direction across the site is generally to the southeast.

- **Water level measurements from previous monitoring visits:**

  Monitoring well data obtained during prior quarterly sampling events are presented in Attachment B. Free product thicknesses have been reduced to 0.01 inches or less in the four onsite recovery wells (ES-1, ES-2, ES-5, and BC-1) since the product recovery system was activated in January 1993.

- **Analytical results from most recent sampling event:**

  Analytical results from the groundwater samples collected in July 1997 are summarized in Table 2. The samples were analyzed for MTBE, benzene, toluene, ethylbenzene, and xylene (MTBE/BTEX) by EPA Method 8020, for total diesel petroleum hydrocarbons (TPH-D) by Modified EPA Method 8015, and for total gasoline petroleum hydrocarbons (TPH-G) by Modified EPA Method 8015, and for polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310. Laboratory reports including chain-of-custody documentation, are included in Attachment A.

  BTEX compounds and TPH-G were detected in six of the nine samples (ES-1, ES-2, ES-4, ES-5, BC-1 and BC-3). TPH-D was detected in eight of the samples. PAHs were detected in five of the samples. MTBE was detected in one of the nine samples.

- **Analytical results from previous sampling events:**

  A summary of the analytical results from previous groundwater sampling events is presented in Attachment C.

- **Site map delineating contamination contours for soil and groundwater based on recent data:**

  Figure 3 shows the analytical results from the most recent groundwater sampling event.

  Figure 4 and Table 3 show the analytical results from soil samples collected during the preliminary site investigation (November 1991) and the supplemental site assessment (July 1993). The figure indicates that soil contamination is limited to the area near sample locations ES-1, ES-2, and ES-5.

- **Estimates of the quantity of contamination remaining in soil and groundwater, and time for completing remediation:**

  Greyhound has not prepared an estimate of the remaining volume of residual soil contamination, based on the recommendation presented in the Supplemental Site Assessment Report that no soil remediation be conducted at the site.

- **Method of cleanup proposed or implemented to date:**

  In October 1992, Greyhound proposed a free product recovery system to remove free product discovered in four on site wells. A hydrocarbon recovery system was installed in November 1992 after receiving approval from ACDEH. The recovery system was activated during the week of January 4, 1993. The system was deactivated during the week of January 6, 1997, as authorized by ACDEH in a February 19, 1997 letter.

- ***Times and dates equipment was not operating, cause of shutdown, and a corrective action plan to insure similar shutdowns do not reoccur:***

  October 6 to October 21, 1993: System shutdown due to an air compressor malfunction.

  November and December 1995: System shutdown to monitor hydrocarbon thicknesses.

  March and April 1996 (4 weeks maximum): System shutdown due to an air compressor malfunction.

  June and July 1996 (4 weeks maximum): System shutdown due to an electrical power supply problem.

The system was inspected quarterly during monitoring visits by Parsons ES personnel. The system was deactivated during the week of January 6, 1997, as authorized by ACDEH in a February 19, 1997 letter.

- **Method and location of disposal of the released hazardous substance and any contaminated soil, groundwater, or surface water:**

  To date, approximately 1,015 gallons of free product and contaminated groundwater have been recovered and properly disposed offsite by Safety Kleen, Inc. and Evergreen Vacuum Services, State of California-certified waste haulers. Product was last recovered during the September 1994 monitoring period. In addition, 82,610 gallons of groundwater have been carbon-treated in the recovery system onsite and discharged to the sanitary sewer under a permit issued by EBMUD.

- **Manifest required for transport of hazardous substances:**

  Previously received disposal/transport manifests for diesel fuel and contaminated groundwater recovered from the site were included in Appendix A of the January 1993 Quarterly Status Report. Future manifests will be included in future quarterly status reports.

- **Proposed continuing or next phase of investigation:**

  Greyhound is currently conducting the groundwater monitoring program specified in the February 19, 1997 letter from ACDEH.

  The next quarterly status report will be prepared and submitted to ACDEH on or before November 14, 1997.

- **Time schedules for the completion of the investigation of the site and remediation:**

  Greyhound proposes to continue the current groundwater monitoring program until January 1998. At that time, the data obtained during four consecutive quarterly monitoring and sampling events (April 1997, July 1997, October 1997, and January 1998) will be assessed with previously collected data to develop recommendations for additional remedial action, if warranted, or a no-further-action request.

- **Tank owner commitment letter:**

  The cover letter submitted with this report is intended to serve as the tank owner commitment letter.

TABLE 1

MONITORING WELL DATA SUMMARY
GREYHOUND TERMINAL, OAKLAND, CALIFORNIA
October 7 and 8, 1997

Well	Elevation of T.O.C.[1] (Ft.)	Depth to Groundwater (Ft.)	Groundwater Elevation[2] (Ft.)	Product Layer Thickness (Ft.)
ES-1[3]	96.64	18.37	78.27	0.01
ES-2[3]	96.44	18.87	77.57	0
ES-3	96.96	19.18	77.78	0
ES-4	95.70	18.23	77.47	0
ES-5[3]	95.85	18.48	77.37	0
ES-6	97.84	21.48	76.36	0
BC-1[3,4]	96.16	18.72	77.44	0
BC-2[4]	96.32	18.69	77.63	0
BC-3[4]	96.20	18.40	77.80	0

[1] T.O.C. = Top of PVC Casing. Elevations of T.O.C. measured with respect to on-site datum (97.50 feet, measured on steel grate for storm sewer near wash rack).

[2] Elevation of T.O.C. - depth to groundwater.

[3] Recovery wells.

[4] Approximate elevation, well casings not vertical. Wells constructed by Brown and Caldwell, Inc., during earlier phases of investigation.

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
GREYHOUND TERMINAL, OAKLAND, CALIFORNIA
OCTOBER 7, 8 & 18, 1997

Parameter	ES-1	ES-2	ES-3	ES-4	ES-5	ES-6	BC-1	BC-2	BC-3
MTBE [1]	14	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE [1]	49	190	ND	11	260	ND	310	ND	ND
TOLUENE [1]	3.4	46	ND	ND	470	ND	600	ND	ND
ETHYLBENZENE [1]	11	46	ND	2.8	160	ND	370	ND	1.9
XYLENES (TOTAL) [1]	23	70	ND	2.3	590	ND	1900	ND	1.5
TPH-G [2]	1700	7200	ND	120	15000	ND	31000	ND	51
TPH-D [3] ppm	2.77	8.04	0.205	0.101	6.51	ND	484	0.92	1.34
Total PAHs [4]	9.92	99.26	ND	2.4	423.6	ND	4343	ND	ND

ND - Parameter analyzed but not detected at or above the detection limit.

[1] Analyzed by EPA Method 8020, results reported in ug/L.

[2] Analyzed by DHS/LUFT Method Modified EPA 8015 for Gasoline. Concentrations reported in ug/L.

[3] Analyzed by DHS/LUFT Method Modified EPA 8015 for Diesel. Concentrations reported in mg/L.

[4] Analyzed by EPA Method 8310. Concentrations reporeted in ug/L.

TABLE 3

SOIL ANALYTICAL DATA SUMMARY
GREYHOUND TERMINAL, OAKLAND, CALIFORNIA

Location Sample Depth	Date	Benzene ug/kg	Toluene ug/kg	Ethylbenzene ug/kg	Xylene ug/kg	Total BTEX[1] ug/kg	TPH-D[2] mg/kg	TPH-G[3] mg/kg
ES-1 (16-18)	11/91	ND	3,000	3,400	22,000	28,400	ND	NA
ES-2 (16-18)	11/91	ND	27,000	28,000	150,000	205,000	ND	NA
ES-3 (18-19)	11/91	ND	ND	ND	ND	ND	ND	NA
ES-4 (16-16.5)	11/91	ND	ND	ND	ND	ND	ND	NA
ES-5 (15-17)	11/91	ND	80	65	330	475	160	NA
ES-6 (15-16.5)	7/93	ND	ND	ND	ND	ND	ND	ND
ES-7 (20-21.5)	7/93	ND	ND	ND	ND	ND	ND	ND
ES-8 (20-21.5)	7/93	ND	ND	ND	ND	ND	ND	ND
ES-9 (15-16.5)	7/93	ND	ND	ND	ND	ND	ND	ND
ES-10 (20-21.5)	7/93	ND	ND	ND	ND	ND	ND	ND
ES-11 (20-21.5)	7/93	ND	ND	ND	ND	ND	ND	ND

NA - Not analyzed.

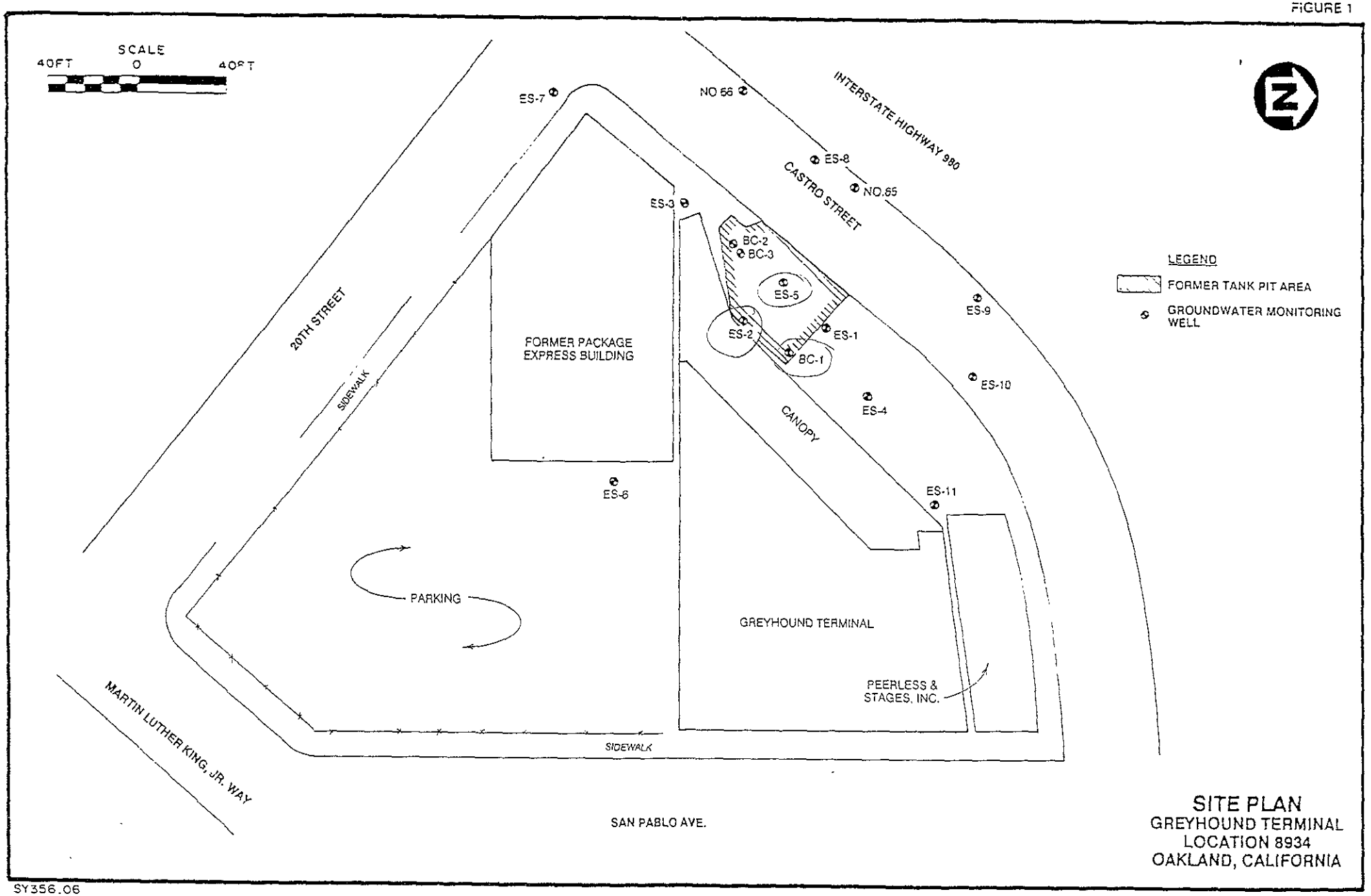
ND - Not-detected; concentration did not exceed Method Detection Limit.

[1] Total BTEX = analyzed by EPA Method 8020. Results reported in ug/kg. Refer to analytical laboratory reports for method detection limits.

[2] TPH-D = Total Petroleum Hydrocarbons (TPH) for Diesel by EPA Method 3510/8015. Results reported in mg/kg. Refer to analytical laboratory reports for method detection limits.

[3] TPH-G = Total Petroleum Hydrocarbons (TPH) for Gasoline by EPA Method 3510/8015. Results reported in mg/kg. Refer to analytical laboratory reports for method detection limits.

FIGURE 1

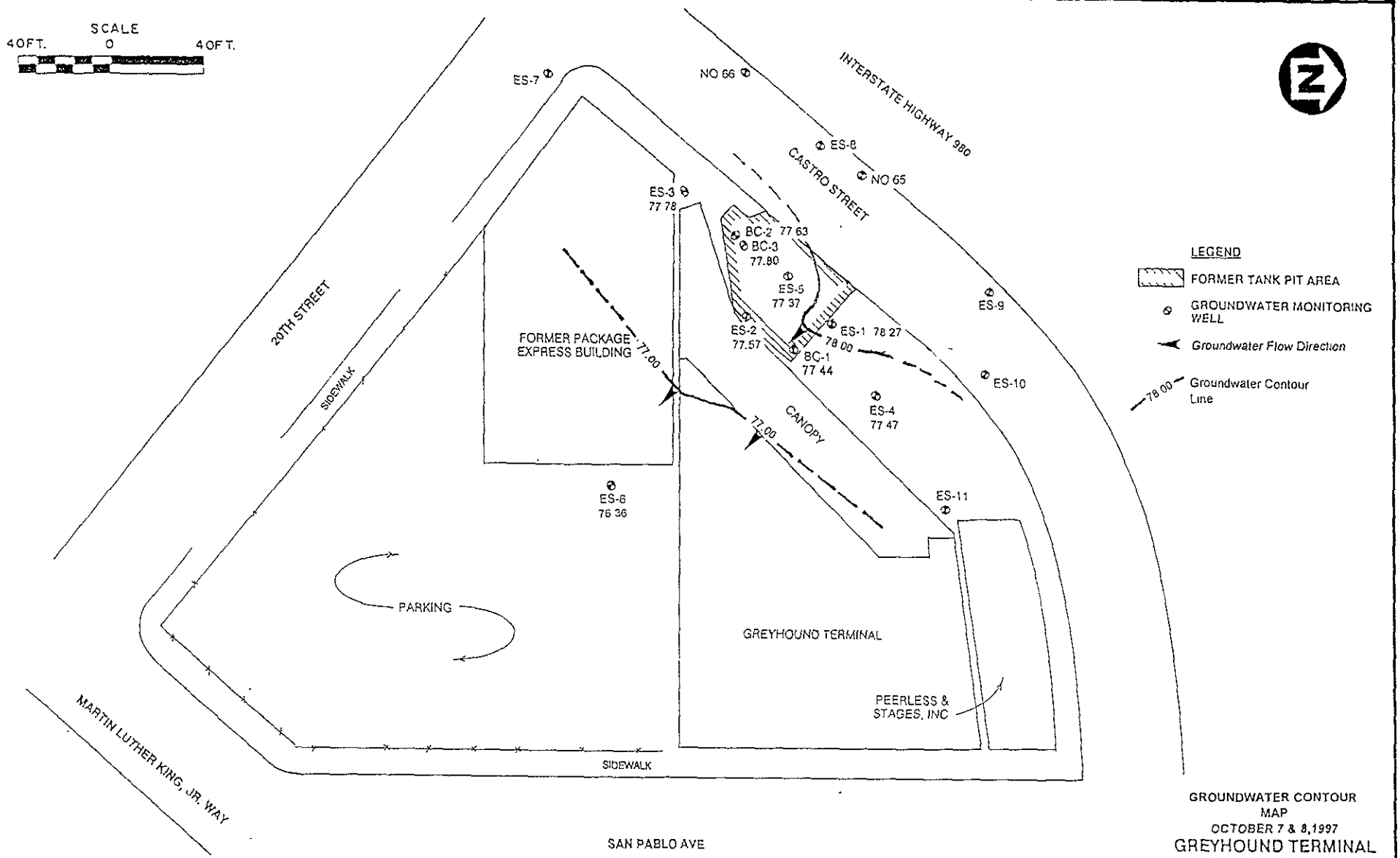


SITE PLAN
GREYHOUND TERMINAL
LOCATION 8934
OAKLAND, CALIFORNIA

SY356.06

PARSONS ENGINEERING SCIENCE INC

FIGURE 2

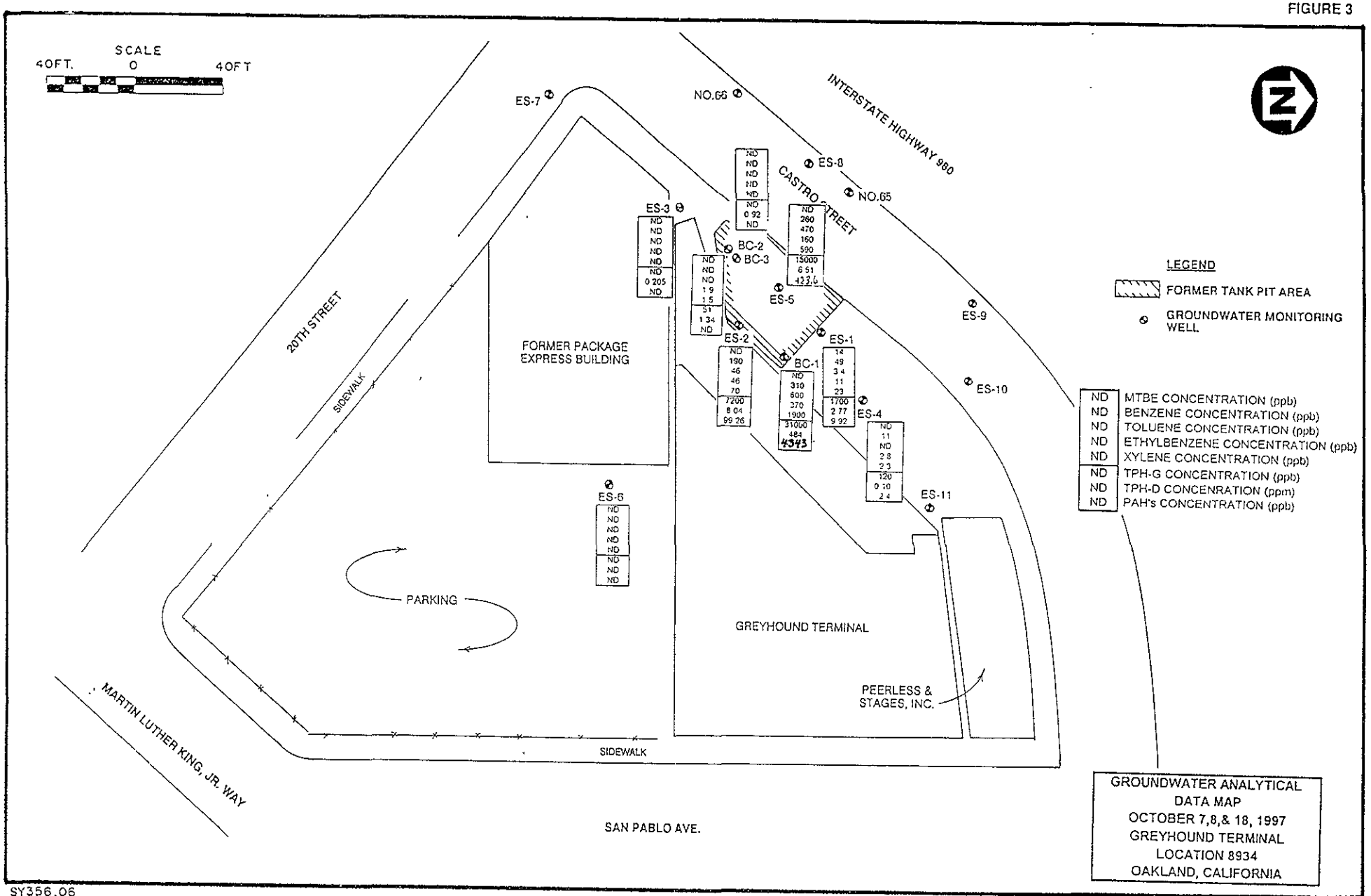


GROUNDWATER CONTOUR MAP
OCTOBER 7 & 8,1997
GREYHOUND TERMINAL
LOCATION 8934
OAKLAND, CALIFORNIA

SY356.06

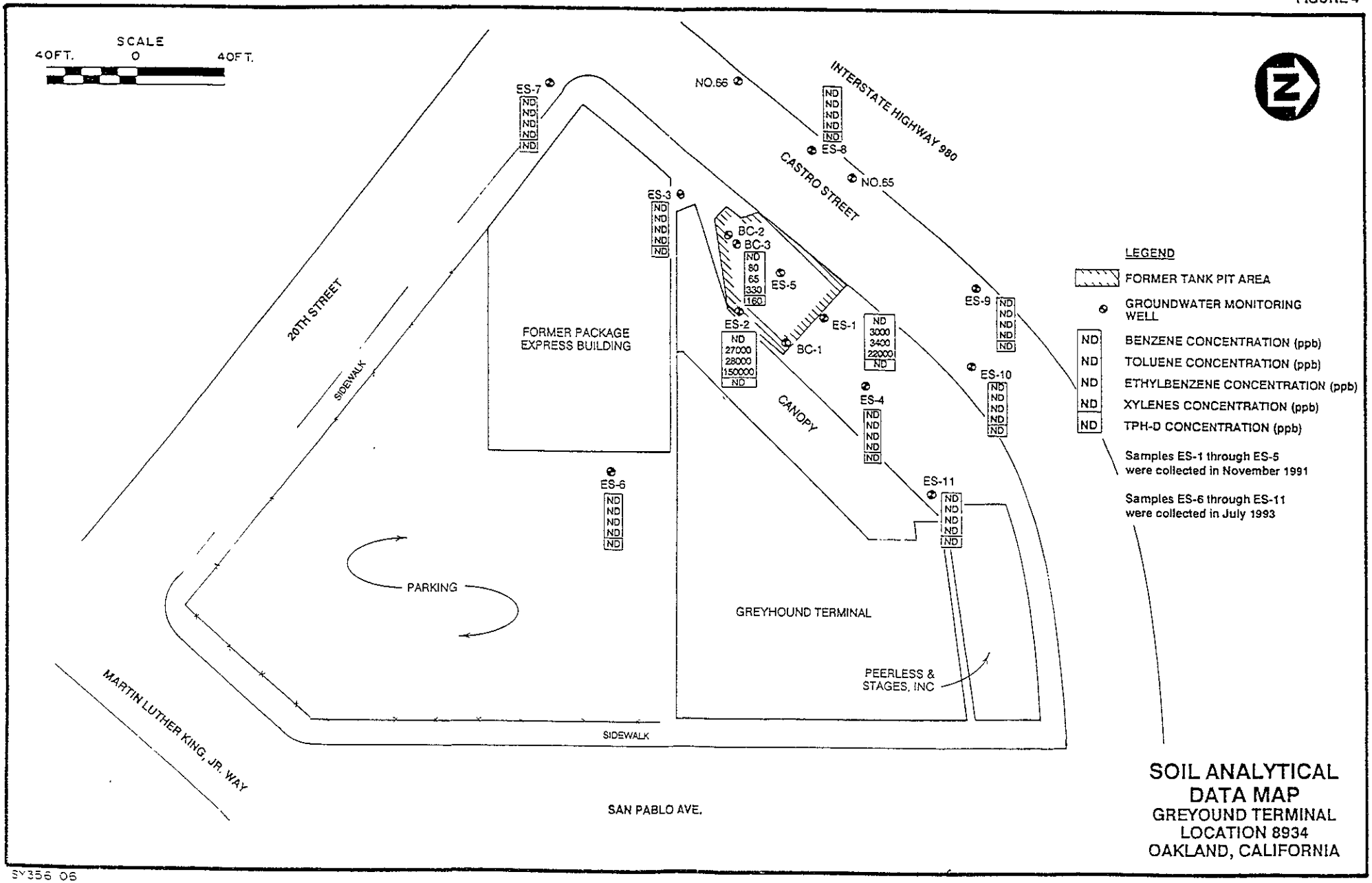
PARSONS ENGINEERING SCIENCE, INC

FIGURE 3



SY356.06

FIGURE 4



SOIL ANALYTICAL DATA MAP
GREYOUND TERMINAL
LOCATION 8934
OAKLAND, CALIFORNIA

SY356 06

PARSONS ENGINEERING SCIENCE, INC

ATTACHMENT A

LABORATORY REPORTS

A Subsidiary of SPL Incorporated

LAS Laboratories, Inc.

PARSONS ENGINEERING SCIENCES

ANALYTICAL DATA REPORT

FOR

8015M EXTRACTABLE PETROLEUM HYDROCARBONS, 8020 AROMATIC VOLATILE ORGANICS/8015M PURGE AND TRAP GASOLINE, AND POLYNUCLEAR AROMATIC HYDROCARBONS

LOG-IN NUMBER	L10687
QUOTATION NUMBER	Q710656-MISC
DOCUMENT FILE NUMBER	1009772A

LAS LABORATORIES, INC. • 975 Kelly Johnson Drive • Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 • Facsimile 702-361-8146

October 20, 1997

Parsons Engineering Sciences
290 Elwood Davis Road, #312
Liverpool, NY 13088

ATTN: Mr. Martin Miller

RE:

LOG-IN NO.	L10687
QUOTATION NO.	Q710656-MISC
DOCUMENT FILE NO.	1009772A

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 9 October 1997.

The temperature of the cooler upon receipt was 3°C. All sample containers coincided with the chain-of-custody documentation. Several samples containers were broken during shipment. The two liter amber glass bottles for sample ES-3 and 1 40 mL voa vial for samples ES-6, ES-3, BC-2 and ES-4 were received broken. The samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data, please call Jenny Davis at (702) 361-3955, ext 213. If you are unable to contact the Client Services Representative, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Jenny L. Davis
Client Services Representative

cc: Client Services
Document Control

Organic Analytes - Case Narrative

General Introduction

The Case Narrative associated with the determination of organic analytes is separated into three (3) sections as follows:

SECTION 1

A brief word processed description of each method reported in this package. This is a general summary of the procedures used and quality control measures applied. It is not intended to include client-specific requirements. Results relating to initial calibration criteria and continuing calibration criteria are included in this section. This section will also describe any unusual events or important observations from the processing of the samples for each method. The initials of the reporting specialist compiling the Case Narrative with the date compiled will be at the end of this section.

SECTION 2

2. An *Exception Report* for each method printed from our data base that summarizes the results of all quality control (QC) measures. A separate *Exception Report* is included for each "QC Group" necessary for each method. At LAS, a QC Group is also called a "workgroup", or more descriptively, a "QC Batch". Each *Exception Report* includes:
   a. A table listing all the samples in the QC Group by LAS Sample ID and Client Sample ID with the date analyzed and Analytical Batch.
   b. Statement(s) relating to holding times for all samples in the QC Group.
   c. Statement(s) relating to the Method Blank (MB) for all samples in the QC Group.
   d. A list of all samples in the QC Group requiring reanalysis for dilution(s) or QC outliers.
   e. A list of all samples in the QC Group that failed surrogate recovery criteria with the recovery obtained and the Acceptance Limits.
   f. A list of all QC Samples that failed recovery criteria with the recovery obtained and the Acceptance Limits. The QC Samples are a laboratory control sample (LCS) and a matrix spike (MS)/matrix spike duplicate (MSD) pair. If insufficient sample exists for a MS/MSD pair, a laboratory control sample duplicate (LCSD) is included. Some methods call for a LCS/LCSD pair instead of a MS/MSD and some for MS/MSD and LCS/LCSD pairs.
   g. A list of all samples in the QC Group that failed internal standard criteria with the integrated areas of the internal standard(s) and their retention times. Note: Applicable to gas chromatography/mass spectrometry GC/MS methods only.

SECTION 3

A table describing all LAS default data qualifiers (flags) used to qualify the data reported on the result forms. Client-specific qualifiers may augment or replace these LAS default qualifiers.

Method 8015M Extractable Petroleum Hydrocarbons

This method quantifies extractable petroleum hydrocarbons using gas chromatography (GC) coupled with a flame ionization detector (FID). Target analytes are ranges of hydrocarbons not specific petroleum products. Examples are of target analytes are product range organics, like Diesel Range Organics or carbon number range organics, like C_{12} to C_{24} Range Organics. All FID-active substances, or practically speaking, all organic species, eluting within the specified range contribute to the reported value. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then concentrated to a final volume. The hydrocarbon range organics in the extract are quantified using GC/FID. To establish the retention time range for the specific target analyte, n-alkanes are analyze to define the chromatographic range of interest. A "common baseline" is then drawn between the n-alkane markers. All peaks eluting within the established retention time range are integrated and the areas summed. Products whose constituents closely match the target range are used to generate a five-point calibration. For example diesel fuel standards are used to calibrate for Diesel Range Organics or C_{12} to C_{24}. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted which contains the same product used for calibration in a matrix which does not interfere with the analytical procedure. Recoveries of the target analyte in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked products can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with a surrogate compound, n-octacosane, before extraction. Recoveries of the surrogate are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8020 Aromatic Volatile Organics/Method 8015M Purge and Trap Gasoline

This combination of methods identifies and quantifies aromatic volatile organics and quantifies Gasoline Range Organics using gas chromatography (GC) coupled with a photoionization detector (PID) and a flame ionization detector (FID) in series. Aromatic volatile organics are determined on the PID and Gasoline Range Organics are determined on the FID. Samples are placed is a specially designed purging chamber and an inert gas is bubbled through the sample. Volatile compounds partition to the gas phase. The gas then passes through a trap where organic compounds are retained. After the purging cycle, the trap is heated which releases the retained compounds into a GC/PID/FID system. Aromatic volatiles are quantified based on the absolute response of the analytes compared to the initial calibration. If necessary, aromatic volatiles detected at reportable levels on the primary column are confirmed on a second column. Confirmation is necessary only when analyzing an unfamiliar matrix or a complex matrix producing GC/PID chromatograms that are difficult to interpret. Standards of the aromatic volatiles to be confirmed are analyzed on the second column to establish retention times and ensure the aromatic volatiles to be confirmed can be confirmed at the levels detected. Gas chromatography/mass spectrometry can also be used for confirmation. Aromatic volatiles that are not confirmed are reported as less than the reporting limit.

To establish the retention time range for Gasoline Range Organics, gasoline standards are analyzed. A "common baseline" is drawn between the ends of the gasoline range. All peaks eluting within the established retention time range are integrated and the areas summed. All FID-active substances, or practically speaking, all purgeable organic species, eluting within the specified range contribute to the reported value. Gasoline is not actually quantified or reported. However, gasoline standards are used to generate a five-point calibration and for spiking quality control samples. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are purged quality control check samples are also analyzed. A MB is purged to verify that the system is not contaminating the samples. LCSs containing aromatic volatiles and gasoline in a matrix which does not interfere with the analytical procedure are also purged. Recoveries of the aromatic volatiles and Gasoline Range Organics in the LCSs are compared to control limits to verify that the analytical systems are operating properly. MS/MSDs are also analyzed for each group of twenty samples. The MS and MSD samples are portions of client samples that have been spiked identically to the LCSs. MS/MSD recoveries can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. Every sample, MB, MS, MSD, and LCS is spiked with surrogates before purging. Recoveries of the surrogates are used to verify performance of the analytical system on a sample by sample basis.

Before samples are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Samples are then run in groups of ten. After each ten samples, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected samples. A group of samples analyzed between continuing calibration verifications is called an Analytical Batch. A group of samples associated with a MS/MSD pair is called a QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8310 Polynuclear Aromatic Hydrocarbons

This method identifies and quantifies polynuclear aromatic hydrocarbons (PAHs) using reverse phase High Performance Liquid Chromatography (HPLC) coupled with a ultraviolet (UV) detector and a fluorescence detector in series. The surrogate nitrobenzene-d_5 and the target analyte acenaphthylene are determined on the UV detector at 254 nm. All other surrogates and target analytes are determined on the fluorescence detector. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then solvent exchanged to acetonitrile and concentrated to a final volume. The analytes in the extract are identified and quantified using HPLC/UV/Fluorescence. The fluorescence detector is programmed to switch excitation and emission wavelengths at various times during each run to maximize selectivity and sensitivity. However, extracts of matrices containing hydrocarbons usually must be diluted to obtain a valid chromatogram. Heavier hydrocarbons eluting near the end of the chromatogram pose the most difficulty. The heavier, more toxic PAHs elute in this region. This is an inherent limitation of the method. Analytes are quantified based on the absolute response of the analytes compared to the initial calibration.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted that contains most or all target analytes in a matrix which does not interfere with the analytical procedure. Recoveries of the target analytes in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked PAHs can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with surrogate compounds before extraction. Recoveries of the surrogate compounds are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Prepared By
Jenny L. Davis

October 20, 1997

LAS Laboratories, Inc.
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	***For CLP analyses Only*** – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. *[pesticide/PCB analyses only]*
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to surrogates being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	*Estimated value* -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs ***(For CLP Reporting Only)***.
N	***For CLP Reporting Only*** -- Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	***For CLP Reporting Only*** -- The percent difference between the concentrations detected on both GC columns was greater than 25 percent *[pesticide/PCB analyses only]*.
U	***For CLP Reporting Only*** -- Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "*as received*" basis. A value in the % moisture cell indicates that data are reported based on a "*dry weight*" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC Summary Form.

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54478

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
54478LCS	Lab Ctrl Sample	13-OCT-97	101397-8310-HPLCC-1
54478LCSD	Lab Ctrl Sample Dup	14-OCT-97	101397-8310-HPLCC-3
54478MB	Method Blank	13-OCT-97	101397-8310-HPLCC-1
L10685-1	ES-5	13-OCT-97	101397-8310-HPLCC-1
L10685-1 1	ES-5	14-OCT-97	101397-8310-HPLCC-3
L10685-4	ES-1	13-OCT-97	101397-8310-HPLCC-1
L10687-1	ES-6	13-OCT-97	101397-8310-HPLCC-1
L10687-2	BC-2	13-OCT-97	101397-8310-HPLCC-1
L10687-3	ES-4	13-OCT-97	101397-8310-HPLCC-1

HOLDING TIMES
__X__ All holding times were met for samples in this QC group.
__X__ The extraction holding times were met.
__X__ The analytical holding times were met.

METHOD BLANK

__X__ No target analytes were detected in the method blank(s).

SAMPLE RESULTS

__X__ The following samples required reanalysis for either dilutions or QC outliers.

LAS Sample ID	Client Sample ID
L10685-1 1	ES-5

__X__ The following samples required a dilution.

LAS Sample ID	Client Sample ID	Dilution
L10685-1 1	ES-5	30

SURROGATE RECOVERIES

__X__ The following samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	Limits
L10685-1	ES-5	Nitrobenzene-d5	233%	20-110
L10685-1	ES-5	2-Fluorobiphenyl	634%	24-110
L10685-1 1	ES-5	Nitrobenzene-d5	445%	20-110
L10685-1 1	ES-5	2-Fluorobiphenyl	1360%	24-110
L10685-1 1	ES-5	p-Terphenyl-d14	176%	22-167
L10685-4	ES-1	Nitrobenzene-d5	157%	20-110
L10685-4	ES-1	2-Fluorobiphenyl	129%	24-110

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54478

QC SAMPLE RESULTS

__X__ All QC samples met criteria for this QC group.

__X__ All associated CCV compounds met the percent deviation criteria.

SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 10 1997, 01:32 pm

Login Number: L10687
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10687-1	ES-6	07-OCT-97	09-OCT-97	16-OCT-97
Temp 4				
Location: EXPENDED				
Water 1 S 8310 PAH		Hold:14-OCT-97		
L10687-2	BC-2	07-OCT-97	09-OCT-97	16-OCT-97
Temp 4				
Location: EXPENDED				
Water 1 S 8310 PAH		Hold:14-OCT-97		
L10687-3	ES-4	07-OCT-97	09-OCT-97	16-OCT-97
Temp 4				
Location: EXPENDED				
Water 1 S 8310 PAH		Hold:14-OCT-97		
L10687-4	ES-6	07-OCT-97	09-OCT-97	16-OCT-97
8015=DIESEL= 50 ppb; Temp 4				
Location: RFG01-6B				
Water 1 S 8015M - TPH		Hold:14-OCT-97		
L10687-5	BC-2	07-OCT-97	09-OCT-97	16-OCT-97
8015=DIESEL=50 ppb, Temp 4				
Location: 124				
Water 1 S 8015M - TPH		Hold:14-OCT-97		
L10687-6	ES-4	07-OCT-97	09-OCT-97	16-OCT-97
8015=DIESEL=50 ppb; Temp 4				
Location: 124				
Water 1 S 8015M - TPH		Hold:14-OCT-97		
L10687-7	ES-6	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS= 50 ppb; Temp 4				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:21-OCT-97		
L10687-8	ES-6	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS=50 ppb; Temp 4				
Location: RFG01-41B				
Water 1 S NONE		Hold:17-OCT-97		
L10687-9	ES-3	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS= 50 ppb; Temp 4				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:21-OCT-97		

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LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 10 1997, 01:32 pm

Login Number: L10687
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10687-10	ES-3	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS= 50 ppb; Temp 4				
Location: RFG01-41B				
Water 1 S NONE		Hold:17-OCT-97		
L10687-11	BC-2	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS = 50 ppb; Temp 4				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:21-OCT-97		
L10687-12	BC-2	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS=50 ppb; Temp 4				
Location: RFG01-41B				
Water 1 S NONE		Hold:17-OCT-97		
L10687-13	ES-4	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS= 50 ppb; Temp 4				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:21-OCT-97		
L10687-14	ES-4	07-OCT-97	09-OCT-97	16-OCT-97
MTBE+BTEX+GAS=50 ppb; Temp 4				
Location: RFG01-41B				
Water 1 S NONE		Hold:17-OCT-97		
L10687-15	REPORT TYPE	09-OCT-97	09-OCT-97	16-OCT-97
Location:				
Water 1 S DAVIS				
Water 1 S GC2				

Signature: Jennifer Davis

Date: 10/10/97

100977sA

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No: C- 04176

page 1 of 2

Client Name:	Parsons ES
Address/Phone:	2101 Webster St., Ste 700, Oakland, CA
Client Contact:	Eric Storrs 510/891-9085
Project Name:	Greyhound - Oakland
Project Number:	730844.89343
Project Location:	Oakland, CA
Invoice To:	

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil SL=sludge O=other:)	bottle (P=plastic A=amber glass G=glass V=vial)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz)	pres. (1=HCl 2=HNO3 3=H2SO4 O=other:)	Number of Containers	Requested Analysis: TPH-g	BTEX	MtBE	TPH-d	PAHs				
ES-6	10/7/97	1100			W	A,V	1,40	1	5	X	X	X	X	X				
ES-3	"	1330			"	"	"	"	5	X	X	X	X	X				
BC-2	"	1410			"	"	"	"	5	X	X	X	X	X				
ES-4	"	1550			"	"	"	"	5	X	X	X	X	X				

Client/Consultant Remarks: Please fax analytical to Eric Storrs at (fax) 510/835-4355

Laboratory remarks:

Intact? ☐ Y ☐ N

Temp:

Requested TAT

24hr ☐ 72hr ☐

48hr ☐ Standard ☐

Other ☒ 7 days

Special Reporting Requirements: Fax Results ☒ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date: 10/8/97	time: 1730	2. Received by:
3. Relinquished by:	date:	time:	4. Received by:
5. Relinquished by:	date:	time:	6. Received by Laboratory:

☐ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459 Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☒ LAS, Las Vegas

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

☐ 1511 E. Orangethorpe Avenue, Fullerton, CA 92631 (714) 447-6868

LAS
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Sample Login
Login Review Checklist

Login Number L10687

The Login Review Checklist documents the review of the information entered into the ACS database for accuracy and useability. For effective login review, five items are necessary. They are the Chain of Custody (COC) (or equivalent), the Sample Summary Report (SSR), the Login COC Report, the Sample Receiving Checklist, and the Quote/COC Reconciliation Form. This checklist should be affixed to each login package prior to distribution.

SAMPLE SUMMARY REPORT	YES	NO	N/A	COMMENT
1. Are all samples on the COC logged in or the proper discrepancies noted on the SSR?	✓			
2. Are all Client Sample IDs logged in correctly?	✓			
3. Are all matrices indicated correctly?	✓			
4. Are all analyses on the COC logged in for appropriate samples?	✓			
5. Are samples logged in for the proper products?	✓			

LOGIN CHAIN OF CUSTODY REPORT	YES	NO	N/A	COMMENT
1. Are the collect, receive, and due dates correct for every sample?	✓			
2. Have all appropriate comments been included?	✓			

SAMPLE RECEIVING CHECKLIST	YES	NO	N/A	COMMENT
1. Are all discrepancies between the COC and login noted (if applicable)?	✓			SAMPLE SEE ATTACHED REC. CHECKLIST

LOGIN pH CHECK (applicable projects only)	YES	NO	N/A	COMMENT
1. Has the pH of all aqueous samples been checked and the report attached?	✓			

Login Specialist signature — 10-9-97 date

Secondary Reviewer signature — 10/9/97 date

Project Management signature — 10/10/97 date

revised 07-17-97, def, H:\fischer\sop\loginrev chk

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LAS LABORATORIES, INC.
Sample Receiving Checklist

Page ___ of ___

Client Name: SPL. Parsons Eng. Job No: L 10687 Cooler ID: _____

COOLER CONDITION UPON RECEIPT

Temperature of cooler upon receipt: 4°C
temperature of temp. blank upon receipt:

	yes	no	n/a	*Comments/Discrepancies
custody seals present	—			
custody seals intact	—			
chain of custody present	—			
blue ice(or equiv.)present	—			
blue ice(or equiv.)frozen	—			
rad survey completed	—			

SAMPLE CONDITION UPON RECEIPT

	yes	no	n/a	*Comments/Discrepancies
all bottles labeled	—			
bottle custody seal present		—		
bottle custody seal intact		—		
samples intact		—		6 containers broken - 2 1 liter ambers + 4 40ml vials - samples lost
proper container used for sample	—			
sample volume sufficient for analysis	—			
proper pres. indicated on the COC	—			
VOA's contain headspace	—			
are samples bi-phasic(if so, indicate sample ID's):		—		
		—		

MISCELLANEOUS ITEMS

	yes	no	n/a	*Comments/Discrepancies
samples with short holding times		—		
samples to subcontract		—		

ADDITIONAL COMMENTS/DISCREPANCIES 6 containers broken - ES-3 (2 1 l ambers) + 4 40 ml vials - # 1 ES-4, 1 ES-6, 1 ES-3, 1 BC-2. 40 ml vials have duplicates, No other duplicate for ES-3 1 liter amber containers. Containers broken due to poor packing in carrier (PM) CSR notified (PM)

Completed by / date: Gail Ackerman 10/9/97
sent to the client (date/initials): ** Client's signature upon receipt:

*Notes: * = contact the appropriate CSR of any discrepancies immediately upon receipt*
*** = please review this information and return via facsimile to the appropriate CSR (702)361-8146*

VERSION 3.0(03-03-97)

L10687

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: SPL - Fullerton *Fullerton, CA(772)
PROJECT: FULLERTON MISC.
LOGIN: L10687
MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	pH
1	L10687-1	ES-6	8310 PAH	7
2	L10687-2	BC-2	8310 PAH	7
3	L10687-3	ES-4	8310 PAH	7
4	L10687-4	ES-6	8015M - TPH	2
5	L10687-5	BC-2	8015M - TPH	2
6	L10687-6	ES-4	8015M - TPH	2
7	L10687-7	ES-6	P&T GAS/BTEX	7
8	L10687-8	ES-6	NONE	2
9	L10687-9	ES-3	P&T GAS/BTEX	2
10	L10687-10	ES-3	NONE	2
11	L10687-11	BC-2	P&T GAS/BTEX	2
12	L10687-12	BC-2	NONE	2
13	L10687-13	ES-4	P&T GAS/BTEX	2
14	L10687-14	ES-4	NONE	2
15	L10687-15	REPORT TYPE	DAVIS	
16	L10687-15	REPORT TYPE	GC2	

Signature: Date: 10-9-97

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LAS Laboratories
SAMPLE SUMMARY REPORT (su02 S1)
SPL - Fullerton *Fullerton, CA

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BC-2	L10687-2		Water	8310 PAH
	L10687-5		Water	8015M - TPH
	L10687-11		Water	P&T GAS/BTEX
	L10687-12		Water	NONE
ES-3	L10687-9		Water	P&T GAS/BTEX
	L10687-10		Water	NONE
ES-4	L10687-3		Water	8310 PAH
	L10687-6		Water	8015M - TPH
	L10687-13		Water	P&T GAS/BTEX
	L10687-14		Water	NONE
ES-6	L10687-1		Water	8310 PAH
	L10687-4		Water	8015M - TPH
	L10687-7		Water	P&T GAS/BTEX
	L10687-8		Water	NONE
REPORT TYPE	L10687-15		Water	DAVIS
	L10687-15		Water	GC2

100977dA

8015M EXTRACTABLE PETROLEUM HYDROCARBONS

A Subsidiary of SPL Incorporated

Certificate of Analysis No. L10687

Client:	Parsons Engineering Science	**Report Date:**	10/20/97
Client Address:	290 Elwood Davis Road #312	**Date(s) Received:**	10/9/97
	Liverpool, NY 13088	**Date(s) Sampled:**	10/8/97
Attention:	Martin Miller	**Date(s) Analyzed:**	10/16/97
Project Name:	Greyhound	**Project Number:**	730844.89343
Site:	Oakland, CA	**Matrix:**	WATER

Method: 8015**

Units: mg/L

LAS ID	Sample ID	Diesel Range Organics
L10687-4	ES-6	ND<0.05
L10687-5	BC-2	0.92
L10687-6	ES-4	0.101

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

A Subsidiary of SPL Incorporated

LAS BATCH QUALITY CONTROL REPORT
METHOD 8015/Diesel

Date: 10/20/97

Batch ID: L082697GC6
Matrix: WATER
Units: mg/L

LABORATORY CONTROL SAMPLE

Spike Compounds	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits (**) (Mandatory) % Recovery Range
Diesel Range Organics	ND<0.05	3	2.27	76	43 - 145

MATRIX SPIKES

Spike Compounds	Sample Results <2>	Spike Added <3>	LCS Spike Result <1>	LCS Spike Recovery <4>	LCS Spike Duplicate Result <1>	LCS Spike Duplicate Recovery <5>	LCS/LCSD Relative % Difference (RPD)	QC Limits (***) (Advisory) RPD MAX	QC Limits (***) (Advisory) Recovery Range
Diesel Range Organics	N/A	3	2.27	76	2.75	92	19	20	43 - 145

Analyst: DA
Sequence Date: 8/26/97
LAS QC Work Group: 54459

* = Values Outside QC Range. << = Data Outside Method Specification Limits
NC = Not Calculated (Sample Exceeds Spike by a factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = | (<4> - <5>| / [(<4> + <5>) x 0.5] x 100
(**) = Source:
(***) = Source:

SAMPLES IN BATCH (LAS ID): L10685-2,3,5
L10687-4,5,6

8020 AROMATIC VOLATILE ORGANICS/ 8015M PURGE AND TRAP GASOLINE

A Subsidiary of SPL Incorporated

Certificate of Analysis No. L10687

Client: Parsons Engineering Science
Client Address: 290 Elwood Davis Road, #312
Liverpool, NY 13088
Attention: Martin Miller
Project Name: Greyhound
Site: Oakland, CA

Report Date: 10/10/97
Date(s) Received: 10/9/97
Date(s) Sampled: 10/7/97
Date(s) Analyzed: 10/10/97
Project Number: 730844.89343
Matrix: WATER

Method: 8020***
Batch No.: 101097GC3 B

Units: ug/L

LAS ID No.	Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
L10687-7	ES-6	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10
L10687-9	ES-3	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10
L10687-11	BC-2	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10
L10687-13	ES-4	11	ND<1.0	2.8	2.3	ND<10

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

A Subsidiary of SPL Incorporated

LAS BATCH QUALITY CONTROL REPORT
METHOD 8020/602

Batch ID: 101097GC3 B **Date:** 10/10/97
Matrix: WATER
Units: ug/L

LABORATORY CONTROL SAMPLE

Spike Compounds	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits (**) (Mandatory) % Recovery Range
MTBE	ND<10	200	230	115	80 - 120
Benzene	ND<0.5	50	56	112	75 - 125
Toluene	ND<1.0	50	54	108	75 - 130
Ethylbenzene	ND<1.0	50	54	108	75 - 130
m,p-Xylene	ND<1.0	100	110	110	75 - 130
o- Xylene	ND<1.0	50	54	108	75 - 130

MATRIX SPIKES

Spike Compounds	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference (RPD)	QC Limits (***) (Advisory) RPD MAX	Recovery Range
Benzene	ND<0.5	50	55	110	55	110	0	20	75 - 125
Toluene	ND<1.0	50	53	106	53	106	0	25	75 - 130
Ethylbenzene	ND<1.0	50	52	104	52	104	0	25	75 - 130
m,p-Xylene	ND<1.0	100	110	110	110	110	0	25	75 - 130
o-Xylene	ND<1.0	50	53	106	52	104	2	25	75 - 130

Analyst: JKA/DA
Sequence Date: 10/8/97
LAS ID of Spiked Sample: L10687-7

* = Values Outside QC Range. << = Data Outside Method Specification Limits
NC = Not Calculated (Sample Exceeds Spike by a factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = | (<4> - <5>| / [(<4> + <5>) x 0.5] x 100
(**) = Source: Historical Limits
(***) = Source: Historical Limits

SAMPLES IN BATCH (LAS ID): L10687-7,9,11,13

A Subsidiary of SPL Incorporated

Certificate of Analysis No. L10687

Client: Parsons Engineering Science
Client Address: 290 Elwood Davis Road, #312
Liverpool, NY 13088
Attention: Martin Miller
Project Name: Greyhound
Site: Oakland, CA

Report Date: 10/10/97
Date(s) Received: 10/9/97
Date(s) Sampled: 10/7/97
Date(s) Analyzed: 10/10/97
Project Number: 730844.89343
Matrix: WATER

Method: 8015***
Batch No.: 101097GC3 A

Units: ug/L

LAS ID No.	Sample ID	Gasoline Range Organics
L10687-7	ES-6	ND<50
L10687-9	ES-3	ND<50
L10687-11	BC-2	ND<50
L10687-13	ES-4	120

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

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LAS BATCH QUALITY CONTROL REPORT
METHOD 8015/Gasoline

Batch ID: 101097GC3 A **DATE:** 10/10/97
Matrix: WATER
Units: ug/L

LABORATORY CONTROL SAMPLE

Spike Compounds	Method Blank Result	Spike Added	Blank Spike		QC Limits (**) (Mandatory)
			Result	Recovery	
	<2>	<3>	<1>	%	% Recovery Range
Gasoline Range Organics	ND<50	1000	920	92	60 - 130

MATRIX SPIKES

Spike Compounds	Sample Results	Spike Added	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative %	QC Limits (***) (Advisory)	
			Result	Recovery	Result	Recovery	Difference	RPD	
	<2>	<3>	<1>	<4>	<1>	<5>	(RPD)	MAX	Recovery Range
Gasoline Range Organics	ND<50	1000	960	96	950	110	1	25	60 - 130

Analyst: JKA/DA
Sequence Date: 10/8/97
LAS ID of Spiked Sample: L10687-7

* = Values Outside QC Range. << = Data Outside Method Specification Limits
NC = Not Calculated (Sample Exceeds Spike by a factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = | (<4> - <5>| / [(<4> + <5>) x 0.5] x 100
(**) = Source: Historical Limits
(***) = Source: Historical Limits

SAMPLES IN BATCH (LAS ID): L10687-7,9,11,13

EPA METHOD 8310 (Polynuclear Aromatic Hydrocarbon)

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-6	LAS Sample ID:	L10687-1
Date Collected:	07-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	102%	20-110
2-Fluorobiphenyl	101%	24-110
p-Terphenyl-d14	103%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	<2.0	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-2	LAS Sample ID:	L10687-2
Date Collected:	07-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.1
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	85%	20-110
2-Fluorobiphenyl	85%	24-110
p-Terphenyl-d14	101%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.1	1.1	
Acenaphthylene	208-96-8	<2.2	2.2	
Acenaphthene	83-32-9	<0.22	0.22	
Fluorene	86-73-7	<0.22	0.22	
Phenanthrene	85-01-8	<0.11	0.11	
Anthracene	120-12-7	<0.11	0.11	
Fluoranthene	206-44-0	<0.22	0.22	
Pyrene	129-00-0	<0.11	0.11	
Benzo(a)anthracene	56-55-3	<0.11	0.11	
Chrysene	218-01-9	<0.11	0.11	
Benzo(b)fluoranthene	205-99-2	<0.22	0.22	
Benzo(k)fluoranthene	207-08-9	<0.11	0.11	
Benzo(a)pyrene	50-32-8	<0.11	0.11	
Dibenzo(a,h)anthracene	53-70-3	<0.22	0.22	
Benzo(ghi)perylene	191-24-2	<0.22	0.22	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.22	0.22	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-4	LAS Sample ID:	L10687-3
Date Collected:	07-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	107%	20-110
2-Fluorobiphenyl	105%	24-110
p-Terphenyl-d14	106%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	2.4	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Method Blank	LAS Sample ID:	54478MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	103%	24-110
p-Terphenyl-d14	103%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	<2.0	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54478LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	102%	24-110
p-Terphenyl-d14	106%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.4	1.0	
Acenaphthylene	208-96-8	4.9	2.0	
Acenaphthene	83-32-9	0.47	0.20	
Fluorene	86-73-7	0.47	0.20	
Phenanthrene	85-01-8	0.27	0.10	
Anthracene	120-12-7	0.23	0.10	
Fluoranthene	206-44-0	0.54	0.20	
Pyrene	129-00-0	0.27	0.10	
Benzo(a)anthracene	56-55-3	0.25	0.10	
Chrysene	218-01-9	0.25	0.10	
Benzo(b)fluoranthene	205-99-2	0.50	0.20	
Benzo(k)fluoranthene	207-08-9	0.25	0.10	
Benzo(a)pyrene	50-32-8	0.24	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.48	0.20	
Benzo(ghi)perylene	191-24-2	0.50	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.48	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54478LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	14-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-3
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	103%	20-110
2-Fluorobiphenyl	109%	24-110
p-Terphenyl-d14	106%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.6	1.0	
Acenaphthylene	208-96-8	5.1	2.0	
Acenaphthene	83-32-9	0.51	0.20	
Fluorene	86-73-7	0.52	0.20	
Phenanthrene	85-01-8	0.25	0.10	
Anthracene	120-12-7	0.24	0.10	
Fluoranthene	206-44-0	0.49	0.20	
Pyrene	129-00-0	0.24	0.10	
Benzo(a)anthracene	56-55-3	0.24	0.10	
Chrysene	218-01-9	0.25	0.10	
Benzo(b)fluoranthene	205-99-2	0.52	0.20	
Benzo(k)fluoranthene	207-08-9	0.27	0.10	
Benzo(a)pyrene	50-32-8	0.25	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.61	0.20	
Benzo(ghi)perylene	191-24-2	0.55	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.53	0.20	

LAS LABORATORIES

LCS DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54478LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	102%	24-110
p-Terphenyl-d14	106%	22-167

Constituent	Spike Added ug/L	LCS Concentration ug/L	LCS % Recovery	QC Limits
Naphthalene	2.50	2.44	98	33-135
Phenanthrene	0.250	0.266	106	42-139
Pyrene	0.250	0.270	108	45-135
Benzo(a)pyrene	0.250	0.240	96	42-135
Benzo(ghi)perylene	0.500	0.500	100	43-135

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54478LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	14-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-3
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	103%	20-110
2-Fluorobiphenyl	109%	24-110
p-Terphenyl-d14	106%	22-167

Constituent	Spike Added ug/L	LCS DUP Concentration ug/L	% Recovery	RPD	QC Limits RPD	QC Limits % Recovery
Naphthalene	2.50	2.56	103	5	50	33-135
Phenanthrene	0.250	0.249	100	7	50	42-139
Pyrene	0.250	0.243	97	11	50	45-135
Benzo(a)pyrene	0.250	0.245	98	2	50	42-135
Benzo(ghi)perylene	0.500	0.547	109	9	50	43-135

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-1	Instrument ID:	HPLCC
Date Analyzed:	13-OCT-97 22:43	Analytical Batch ID:	101397-8310-HPLCC-1
File ID:	10139701.R18		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-1.00	988.1	1000.	-1.2
Acenaphthylene	208-96-8	-0.860	1948.	2000.	-2.6
2-Fluorobiphenyl	321-60-8	-0.790	528.9	500.0	5.8
Acenaphthene	83-32-9	-0.720	195.5	200.0	-2.2
Phenanthrene	85-01-8	-0.610	95.32	100.0	-4.7
Fluorene	86-73-7	-0.510	204.8	200.0	-2.4
Nitrobenzene-d5	4165-60-0	-0.460	532.4	500.0	6.5
Anthracene	120-12-7	-0.410	95.79	100.0	-4.2
p-Terphenyl-d14	1718-51-0	-0.400	511.7	500.0	2.3
Fluoranthene	206-44-0	-0.370	184.7	200.0	-7.6
Pyrene	129-00-0	-0.350	95.10	100.0	-4.9
Benzo(a)anthracene	56-55-3	-0.280	91.86	100.0	-8.1
Chrysene	218-01-9	-0.270	92.44	100.0	-7.6
Benzo(b)fluoranthene	205-99-2	-0.240	193.5	200.0	-3.3
Benzo(k)fluoranthene	207-08-9	-0.160	97.31	100.0	-2.7
Benzo(a)pyrene	50-32-8	-0.150	96.06	100.0	-3.9
Dibenzo(a,h)anthracene	53-70-3	0.000	194.3	200.0	-2.9
Benzo(ghi)perylene	191-24-2	0.0700	194.2	200.0	-2.9
Indeno(1,2,3-cd)pyrene	193-39-5	0.130	181.9	200.0	-9.0

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-3	Instrument ID:	HPLCC
Date Analyzed:	14-OCT-97 12:30	Analytical Batch ID:	101397-8310-HPLCC-3
File ID:	10139701.R34		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-0.500	982.5	1000.	-1.8
2-Fluorobiphenyl	321-60-8	-0.200	531.0	500.0	6.2
Acenaphthene	83-32-9	-0.180	195.5	200.0	-2.3
Acenaphthylene	208-96-8	-0.170	1960.	2000.	-2.0
Phenanthrene	85-01-8	-0.150	95.32	100.0	-4.7
Anthracene	120-12-7	0.000	94.49	100.0	-5.5
Fluorene	86-73-7	0.000	200.0	200.0	-0.0030
Nitrobenzene-d5	4165-60-0	0.000	532.4	500.0	6.5
Fluoranthene	206-44-0	0.000	185.9	200.0	-7.1
p-Terphenyl-d14	1718-51-0	0.100	510.6	500.0	2.1
Pyrene	129-00-0	0.120	93.69	100.0	-6.3
Benzo(b)fluoranthene	205-99-2	0.160	193.5	200.0	-3.3
Chrysene	218-01-9	0.180	92.88	100.0	-7.1
Benzo(a)anthracene	56-55-3	0.190	92.30	100.0	-7.7
Benzo(a)pyrene	50-32-8	0.220	91.08	100.0	-8.9
Benzo(k)fluoranthene	207-08-9	0.310	97.68	100.0	-2.3
Dibenzo(a,h)anthracene	53-70-3	0.420	198.7	200.0	-0.67
Benzo(ghi)perylene	191-24-2	0.550	194.8	200.0	-2.6
Indeno(1,2,3-cd)pyrene	193-39-5	0.660	179.9	200.0	-10.0

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID: R101397-HPLCC-2 Instrument ID: HPLCC
Date Analyzed: 14-OCT-97 08:46 Analytical Batch ID: 101397-8310-HPLCC-2
File ID: 10139701.R29

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-0.750	967.5	1000.	-3.2
Acenaphthylene	208-96-8	-0.690	1934.	2000.	-3.3
2-Fluorobiphenyl	321-60-8	-0.590	550.9	500.0	10.2
Acenaphthene	83-32-9	-0.540	193.1	200.0	-3.4
Fluorene	86-73-7	-0.310	215.4	200.0	7.7
Phenanthrene	85-01-8	-0.300	94.11	100.0	-5.9
Anthracene	120-12-7	-0.270	96.95	100.0	-3.1
Fluoranthene	206-44-0	-0.120	185.9	200.0	-7.1
p-Terphenyl-d14	1718-51-0	-0.100	514.6	500.0	2.9
Benzo(a)anthracene	56-55-3	0.000	92.30	100.0	-7.7
Nitrobenzene-d5	4165-60-0	0.000	538.4	500.0	7.7
Chrysene	218-01-9	0.000	92.21	100.0	-7.8
Pyrene	129-00-0	0.000	86.56	100.0	-13.4
Benzo(b)fluoranthene	205-99-2	0.000	195.5	200.0	-2.2
Benzo(a)pyrene	50-32-8	0.0700	96.65	100.0	-3.4
Benzo(k)fluoranthene	207-08-9	0.0800	98.97	100.0	-1.0
Dibenzo(a,h)anthracene	53-70-3	0.140	216.8	200.0	8.4
Benzo(ghi)perylene	191-24-2	0.200	192.9	200.0	-3.6
Indeno(1,2,3-cd)pyrene	193-39-5	0.260	186.8	200.0	-6.6

RUN LOGS/EXTRACTION SHEETS

HT= 10/14
DUE= 10/16

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs16 PAH)

EXTRACTION SHEET FOR: 8310 PAH Extraction

WORKSHEET NUMBER: 8310 PAH_54478

LAL #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/ CREATED	VOL/WT EXTR SP 10/10/97	WATER SAMPLE pH	SURR ML	MS ML	BROUGHT TO FINAL VOLUME OF GPP 10/11/97	AMT GIVEN TO ANALYST
L10685-1		ES-5	08-OCT-97	09-OCT-97	1000ml	7	1.0	N/A	5.0mL	4.0mL
L10685-4		ES-1	08-OCT-97	09-OCT-97	1000ml	↓	↓	↓	↓	↓
L10687-1		ES-6	07-OCT-97	09-OCT-97	1000ml					
L10687-2		BC-2	07-OCT-97	09-OCT-97	900ml					
L10687-3		ES-4	07-OCT-97	09-OCT-97	1000ml					
54478MB	MB	Method Blank		09-OCT-97	1000ml	7				
54478LCS	LCS	Lab Ctrl Sample		09-OCT-97	↓	↓		1.0		
54478LCSD	LCSD	Lab Ctrl Sample Dup		09-OCT-97				1.0		
~~SPIKELOT54478~~	~~SPIKELOT~~	~~Spike Lot Sample~~		~~09-OCT-97~~					SRP	10-09-97

EXTRACTION METHOD: 3520B Continuous

DATE STARTED: 10/10/97 DATE COMPLETED: 10/11/97 SIGNED: Steve Potter

CONTINUOUS DATE & TIME STARTED: 10/10/97 1:10pm SP DATE & TIME COMPLETED: 10/11/97 7:10am GPP SIGNED: [signature]

QC BATCH# : 8310 PAH_54478 LOT #'S SPIKE WITNESS: [signature]

SURR ID # : 1037-16-1 CONC: 5ug/ml MECL2: 37156 NA2SO4 : N/A

MS ID # : 1037-32-1 CONC: 0.25-5.0 ug/ml ACN : BP721 ACETONE: N/A

REVIEWED BY: [signature] 10-12-97

NARRATIVE EXTRACT COC: RECIEVED BY: [signature] 10 13 97 10 55AM DATE: 10-13-97

The LCS seems to have picked up some contamination. It has a slighty dark tint, while the LCSD is clear. GPP 10/11/97

AS REVIEWED BY _____ INSTRUMENT ID HPLC-C LOGBOOK# LAS-97-LOG-1109 PAGE # _____

ANALYST	DATE AND TIME	LAS SAMPLE ID	DESCRIPTION/ SOLUTION	MATRIX/ DILUTION	RAW DATA FILE	METHOD FILE	REPORTED	REANALYZED	COMMENTS ALS NO. (VOA ONLY)
JF	10-13-97 ~~16:37~~	AUTOCAL 1 SR	STD 0605-67-5		101397.D01	101397.MET	NO		PRIMER
	12:50:15	AUTOCAL 1R	0605-67-1		.D02		YES		
	13:16:04	Autocal 2R	0605-67-2		.D03				
	14:03:09	Autocal 3R	0605-67-3		.D04				
	14:51:25	Autocal 4R	0605-67-4		.D05				
	15:14:57	Autocal 5R	0605-67-5		.D06				
	15:42:12	Instrument blank			.D07				
	16:27:20	54478MB			.D08		YES		
	17:13:43	54478LCS			.D09		"		
	17:39:00	54478LCSD			.D10		NO	YES	
	18:29:50	54478LCSD			.D11		NO	YES	
	19:06:01	L10655-1			.D12		YES		
	19:42:23	L10655-4			.D13				
	20:18:28	L10687-1			.D14				
	20:54:58	L10687-2			.D15				
	21:31:13	L10687-3			.D16				
	22:07:32	LB			.D17				
	22:43:47	CCV4	0605-67-4		.D18		YES		
		LB			.D19				
	23:56	54107MB			.D20				
	10-14-97	54107LCS			.D21				
		L10609-4			.D22				
		L10609-2			.D23				
		54107MS			.D24				
		54107MSD			.D25				
		54L10609-1 1:3			.D26				
		L10609-3 1:5			.D27				
		LB			.D28				
	8:46:09	CCV4	0605-67-4		.29		YES		
	10:07:03	54478LCSD			.30				

LAS REVIEWED BY _____ INSTRUMENT ID HPLC-C LOGBOOK# LAS-97-LOG-1109 PAGE # _____

ANALYST	DATE AND TIME	LAS SAMPLE ID	DESCRIPTION/ SOLUTION	MATRIX/ DILUTION	RAW DATA FILE	METHOD FILE	REPORTED	REANALYZED	COMMENTS ALS NO. (VOA ONLY)
DF	10-M-97 10:43:05	L10655-1 1:10			101397.D31	101397.MET	NO		
	11:19:19	L10655-1 1:20			.D32		YES		
	11:54:35	IB			.D33				
	1230:53	CCV4	0605-67-4		.D34		YES		
		54498MB			.D35				
		54498LCS			.D36				
		L10670-3			.D37				
		L10670-7			.D38				
		L10701-1			.D39				
		L10701-3			.D40				
		L10701-2			.D41				
		54498MS			.D42				
		54498MSD			.D43				
		IB			.D44				
	↓	CCV4	0605-67-4		.D45				
		IB			.D46				
		53157MB			.D47				
		53157LCS			.D48				
		L10397-7			.D49				
		L10397-8 1:50			.D50				
		L10422-14			.D51				
		53157MS			.D52				
		53157MSD			.D53				
		~~IB~~ L10397 1:10			.D54				
		~~QC=V~~ 7 " 1:50			.D55				
		IB			.D56				
		CCV4	0605-67-4		.D57				

A Subsidiary of SPL Incorporated

LAS Laboratories, Inc.

PARSONS ENGINEERING SCIENCES

ANALYTICAL DATA REPORT

FOR

8015M EXTRACTABLE PETROLEUM HYDROCARBONS, 8020 AROMATIC VOLATILE ORGANICS/8015M PURGE AND TRAP GASOLINE, AND POLYNUCLEAR AROMATIC HYDROCARBONS

LOG-IN NUMBER	L10685
QUOTATION NUMBER	Q710656-MISC
DOCUMENT FILE NUMBER	1009772

LAS LABORATORIES, INC. • 975 Kelly Johnson Drive • Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 • Facsimile 702-361-8146

October 20, 1997

Parsons Engineering Sciences
290 Elwood Davis Road, #312
Liverpool, NY 13088

ATTN: **Mr. Martin Miller**

RE:

LOG-IN NO.	**L10685**
QUOTATION NO.	**Q710656-MISC**
DOCUMENT FILE NO.	**1009772**

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 9 October 1997.

The temperature of the cooler upon receipt was 3°C. All sample containers coincided with the chain-of-custody documentation. All sample containers were not received intact. The two liter amber glass bottles for samples BC-3 and ES-2 and one liter amber glass bottle for sample BC-1 were received broken. The samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data, please call Jenny Davis at (702) 361-3955, ext 213. If you are unable to contact the Client Services Representative, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Jenny L. Davis

Jenny L. Davis
Client Services Representative

cc: Client Services
Document Control

Organic Analytes - Case Narrative

General Introduction

The Case Narrative associated with the determination of organic analytes is separated into three (3) sections as follows:

SECTION 1

A brief word processed description of each method reported in this package. This is a general summary of the procedures used and quality control measures applied. It is not intended to include client-specific requirements. Results relating to initial calibration criteria and continuing calibration criteria are included in this section. This section will also describe any unusual events or important observations from the processing of the samples for each method. The initials of the reporting specialist compiling the Case Narrative with the date compiled will be at the end of this section.

SECTION 2

2. An *Exception Report* for each method printed from our data base that summarizes the results of all quality control (QC) measures. A separate *Exception Report* is included for each "QC Group" necessary for each method. At LAS, a QC Group is also called a "workgroup", or more descriptively, a "QC Batch". Each *Exception Report* includes:
   a. A table listing all the samples in the QC Group by LAS Sample ID and Client Sample ID with the date analyzed and Analytical Batch.
   b. Statement(s) relating to holding times for all samples in the QC Group.
   c. Statement(s) relating to the Method Blank (MB) for all samples in the QC Group.
   d. A list of all samples in the QC Group requiring reanalysis for dilution(s) or QC outliers.
   e. A list of all samples in the QC Group that failed surrogate recovery criteria with the recovery obtained and the Acceptance Limits.
   f. A list of all QC Samples that failed recovery criteria with the recovery obtained and the Acceptance Limits. The QC Samples are a laboratory control sample (LCS) and a matrix spike (MS)/matrix spike duplicate (MSD) pair. If insufficient sample exists for a MS/MSD pair, a laboratory control sample duplicate (LCSD) is included. Some methods call for a LCS/LCSD pair instead of a MS/MSD and some for MS/MSD and LCS/LCSD pairs.
   g. A list of all samples in the QC Group that failed internal standard criteria with the integrated areas of the internal standard(s) and their retention times. Note: Applicable to gas chromatography/mass spectrometry GC/MS methods only.

SECTION 3

A table describing all LAS default data qualifiers (flags) used to qualify the data reported on the result forms. Client-specific qualifiers may augment or replace these LAS default qualifiers.

Method 8015M Extractable Petroleum Hydrocarbons

This method quantifies extractable petroleum hydrocarbons using gas chromatography (GC) coupled with a flame ionization detector (FID). Target analytes are ranges of hydrocarbons not specific petroleum products. Examples are of target analytes are product range organics, like Diesel Range Organics or carbon number range organics, like C_{12} to C_{24} Range Organics. All FID-active substances, or practically speaking, all organic species, eluting within the specified range contribute to the reported value. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then concentrated to a final volume. The hydrocarbon range organics in the extract are quantified using GC/FID. To establish the retention time range for the specific target analyte, n-alkanes are analyze to define the chromatographic range of interest. A "common baseline" is then drawn between the n-alkane markers. All peaks eluting within the established retention time range are integrated and the areas summed. Products whose constituents closely match the target range are used to generate a five-point calibration. For example diesel fuel standards are used to calibrate for Diesel Range Organics or C_{12} to C_{24}. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted which contains the same product used for calibration in a matrix which does not interfere with the analytical procedure. Recoveries of the target analyte in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked products can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with a surrogate compound, n-octacosane, before extraction. Recoveries of the surrogate are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8020 Aromatic Volatile Organics/Method 8015M Purge and Trap Gasoline

This combination of methods identifies and quantifies aromatic volatile organics and quantifies Gasoline Range Organics using gas chromatography (GC) coupled with a photoionization detector (PID) and a flame ionization detector (FID) in series. Aromatic volatile organics are determined on the PID and Gasoline Range Organics are determined on the FID. Samples are placed is a specially designed purging chamber and an inert gas is bubbled through the sample. Volatile compounds partition to the gas phase. The gas then passes through a trap where organic compounds are retained. After the purging cycle, the trap is heated which releases the retained compounds into a GC/PID/FID system. Aromatic volatiles are quantified based on the absolute response of the analytes compared to the initial calibration. If necessary, aromatic volatiles detected at reportable levels on the primary column are confirmed on a second column. Confirmation is necessary only when analyzing an unfamiliar matrix or a complex matrix producing GC/PID chromatograms that are difficult to interpret. Standards of the aromatic volatiles to be confirmed are analyzed on the second column to establish retention times and ensure the aromatic volatiles to be confirmed can be confirmed at the levels detected. Gas chromatography/mass spectrometry can also be used for confirmation. Aromatic volatiles that are not confirmed are reported as less than the reporting limit.

To establish the retention time range for Gasoline Range Organics, gasoline standards are analyzed. A "common baseline" is drawn between the ends of the gasoline range. All peaks eluting within the established retention time range are integrated and the areas summed. All FID-active substances, or practically speaking, all purgeable organic species, eluting within the specified range contribute to the reported value. Gasoline is not actually quantified or reported. However, gasoline standards are used to generate a five-point calibration and for spiking quality control samples. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are purged quality control check samples are also analyzed. A MB is purged to verify that the system is not contaminating the samples. LCSs containing aromatic volatiles and gasoline in a matrix which does not interfere with the analytical procedure are also purged. Recoveries of the aromatic volatiles and Gasoline Range Organics in the LCSs are compared to control limits to verify that the analytical systems are operating properly. MS/MSDs are also analyzed for each group of twenty samples. The MS and MSD samples are portions of client samples that have been spiked identically to the LCSs. MS/MSD recoveries can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. Every sample, MB, MS, MSD, and LCS is spiked with surrogates before purging. Recoveries of the surrogates are used to verify performance of the analytical system on a sample by sample basis.

Before samples are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Samples are then run in groups of ten. After each ten samples, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected samples. A group of samples analyzed between continuing calibration verifications is called an Analytical Batch. A group of samples associated with a MS/MSD pair is called a QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8310 Polynuclear Aromatic Hydrocarbons

This method identifies and quantifies polynuclear aromatic hydrocarbons (PAHs) using reverse phase High Performance Liquid Chromatography (HPLC) coupled with a ultraviolet (UV) detector and a fluorescence detector in series. The surrogate nitrobenzene-d_5 and the target analyte acenaphthylene are determined on the UV detector at 254 nm. All other surrogates and target analytes are determined on the fluorescence detector. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then solvent exchanged to acetonitrile and concentrated to a final volume. The analytes in the extract are identified and quantified using HPLC/UV/Fluorescence. The fluorescence detector is programmed to switch excitation and emission wavelengths at various times during each run to maximize selectivity and sensitivity. However, extracts of matrices containing hydrocarbons usually must be diluted to obtain a valid chromatogram. Heavier hydrocarbons eluting near the end of the chromatogram pose the most difficulty. The heavier, more toxic PAHs elute in this region. This is an inherent limitation of the method. Analytes are quantified based on the absolute response of the analytes compared to the initial calibration.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted that contains most or all target analytes in a matrix which does not interfere with the analytical procedure. Recoveries of the target analytes in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked PAHs can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with surrogate compounds before extraction. Recoveries of the surrogate compounds are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows:
Client samples ES-5 (L10685-1) and ES-1 (L10685-4) contained high levels of unknown compounds which coeluted with the early surrogates causing the recoveries to be out of criteria.

Prepared By
Jenny L. Davis

October 20, 1997

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54478

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
54478LCS	Lab Ctrl Sample	13-OCT-97	101397-8310-HPLCC-1
54478LCSD	Lab Ctrl Sample Dup	14-OCT-97	101397-8310-HPLCC-3
54478MB	Method Blank	13-OCT-97	101397-8310-HPLCC-1
L10685-1	ES-5	13-OCT-97	101397-8310-HPLCC-1
L10685-1 1	ES-5	14-OCT-97	101397-8310-HPLCC-3
L10685-4	ES-1	13-OCT-97	101397-8310-HPLCC-1
L10687-1	ES-6	13-OCT-97	101397-8310-HPLCC-1
L10687-2	BC-2	13-OCT-97	101397-8310-HPLCC-1
L10687-3	ES-4	13-OCT-97	101397-8310-HPLCC-1

HOLDING TIMES
__X__ All holding times were met for samples in this QC group.
__X__ The extraction holding times were met.
__X__ The analytical holding times were met.

METHOD BLANK

__X__ No target analytes were detected in the method blank(s).

SAMPLE RESULTS

__X__ The following samples required reanalysis for either dilutions or QC outliers.

LAS Sample ID	Client Sample ID
L10685-1 1	ES-5

__X__ The following samples required a dilution.

LAS Sample ID	Client Sample ID	Dilution
L10685-1 1	ES-5	30

SURROGATE RECOVERIES

__X__ The following samples failed the recovery criteria for this QC group.

LAS Sample ID	Client Sample ID	Parameter	Recovery	Limits
L10685-1	ES-5	Nitrobenzene-d5	233%	20-110
L10685-1	ES-5	2-Fluorobiphenyl	634%	24-110
L10685-1 1	ES-5	Nitrobenzene-d5	445%	20-110
L10685-1 1	ES-5	2-Fluorobiphenyl	1360%	24-110
L10685-1 1	ES-5	p-Terphenyl-d14	176%	22-167
L10685-4	ES-1	Nitrobenzene-d5	157%	20-110
L10685-4	ES-1	2-Fluorobiphenyl	129%	24-110

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54478

QC SAMPLE RESULTS

__X__ All QC samples met criteria for this QC group.

__X__ All associated CCV compounds met the percent deviation criteria.

LAS Laboratories, Inc.
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	*For CLP analyses Only* – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. *[pesticide/PCB analyses only]*
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to surrogates being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	*Estimated value* -- (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs ***(For CLP Reporting Only)***.
N	*For CLP Reporting Only* – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	*For CLP Reporting Only* – The percent difference between the concentrations detected on both GC columns was greater than 25 percent *[pesticide/PCB analyses only].*
U	*For CLP Reporting Only* – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "*as received*" basis. A value in the % moisture cell indicates that data are reported based on a "*dry weight*" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC Summary Form.

SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 10 1997, 01:35 pm

Login Number: L10685
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10685-1	ES-5	08-OCT-97	09-OCT-97	16-OCT-97
8015M=DIESEL; Temp 3				
Location: EXPENDED				
Water 1 S 8310 PAH		Hold:15-OCT-97		
L10685-2	ES-5	08-OCT-97	09-OCT-97	16-OCT-97
8015M=DIESEL=50 ppb, Temp 3				
Location: 124				
Water 1 S 8015M - TPH		Hold:15-OCT-97		
L10685-3	BC-1	08-OCT-97	09-OCT-97	16-OCT-97
8015M=DIESEL=50 ppb; Temp 3				
Location: 124				
Water 1 S 8015M - TPH		Hold:15-OCT-97		
L10685-4	ES-1	08-OCT-97	09-OCT-97	16-OCT-97
8015M=DIESEL=50 ppb; Temp 3				
Location: EXPENDED				
Water 1 S 8310 PAH		Hold:15-OCT-97		
L10685-5	ES-1	08-OCT-97	09-OCT-97	16-OCT-97
8015M=DIESEL=50 ppb; Temp 3				
Location: 124				
Water 1 S 8015M - TPH		Hold:15-OCT-97		
L10685-6	BC-3	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS=50 ppb; Temp 3				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97		
L10685-7	BC-3	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3				
Location: RFG01-42B				
Water 1 S NONE		Hold:18-OCT-97		
L10685-8	BC-3	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3				
Location: RFG01-42B				
Water 1 S NONE		Hold:18-OCT-97		
L10685-9	ES-5	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97		

1009772

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 10 1997, 01:32 pm

Login Number: L10685
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	PR	Due Date
L10685-10	ES-5	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			
L10685-11	BC-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3					
Location: 127-JA-10/10/97					
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97			
L10685-12	BC-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			
L10685-13	BC-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			
L10685-14	ES-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3					
Location: 127-JA-10/10/97					
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97			
L10685-15	ES-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			
L10685-16	ES-1	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			
L10685-17	ES-2	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS=50 ppb; Temp 3					
Location: 127-JA-10/10/97					
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97			
L10685-18	ES-2	08-OCT-97	09-OCT-97		16-OCT-97
P&T=MTBE+BTEX+GAS= 50 ppb; Temp 3					
Location: RFG01-42B					
Water 1 S NONE		Hold:18-OCT-97			

1009772

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 10 1997, 01:32 pm

Login Number: L10685
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10685-19	ES-2	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS=50 ppb; Temp 3				
Location: RFG01-42B				
Water 1 S NONE		Hold:18-OCT-97		
L10685-20	TRIP BLANK	08-OCT-97	09-OCT-97	16-OCT-97
P&T=MTBE+BTEX+GAS = 50 ppb; Temp 3				
Location: 127-JA-10/10/97				
Water 1 S P&T GAS/BTEX		Hold:22-OCT-97		
L10685-21	REPORT TYPE	09-OCT-97	09-OCT-97	16-OCT-97
Location:				
Water 1 S DAVIS				
Water 1 S GC2				

Signature: Jenny L. Davis

Date: 10/16/97

100972

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: SPL - Fullerton *Fullerton, CA(772)
PROJECT: FULLERTON MISC.
LOGIN: L10685
MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	pH
1	L10685-1	ES-5	8310 PAH	7
2	L10685-2	ES-5	8015M - TPH	2
3	L10685-3	BC-1	8015M - TPH	2
4	L10685-4	ES-1	8310 PAH	7
5	L10685-5	ES-1	8015M - TPH	2
6	L10685-6	BC-3	P&T GAS/BTEX	2
7	L10685-7	BC-3	NONE	2
8	L10685-8	BC-3	NONE	2
9	L10685-9	ES-5	P&T GAS/BTEX	2
10	L10685-10	ES-5	NONE	2
11	L10685-11	BC-1	P&T GAS/BTEX	2
12	L10685-12	BC-1	NONE	2
13	L10685-13	BC-1	NONE	2
14	L10685-14	ES-1	P&T GAS/BTEX	2
15	L10685-15	ES-1	NONE	2
16	L10685-16	ES-1	NONE	2
17	L10685-17	ES-2	P&T GAS/BTEX	2
18	L10685-18	ES-2	NONE	2
19	L10685-19	ES-2	NONE	2
20	L10685-20	TRIP BLANK	P&T GAS/BTEX	2
21	L10685-21	REPORT TYPE	DAVIS	
22	L10685-21	REPORT TYPE	GC2	

Signature: _____ Date: 10-9-97

1009772

LAS Laboratories
SAMPLE SUMMARY REPORT (su02 S1)
SPL - Fullerton *Fullerton, CA

Client Sample Number	LAL Sample Number	Matrix	Method
BC-1	L10685-3	Water	8015M - TPH
	L10685-11	Water	P&T GAS/BTEX
	L10685-12	Water	NONE
	L10685-13	Water	NONE
BC-3	L10685-6	Water	P&T GAS/BTEX
	L10685-7	Water	NONE
	L10685-8	Water	NONE
ES-1	L10685-4	Water	8310 PAH
	L10685-5	Water	8015M - TPH
	L10685-14	Water	P&T GAS/BTEX
	L10685-15	Water	NONE
	L10685-16	Water	NONE
ES-2	L10685-17	Water	P&T GAS/BTEX
	L10685-18	Water	NONE
	L10685-19	Water	NONE
ES-5	L10685-1	Water	8310 PAH
	L10685-2	Water	8015M - TPH
	L10685-9	Water	P&T GAS/BTEX
	L10685-10	Water	NONE
REPORT TYPE	L10685-21	Water	DAVIS
	L10685-21	Water	GC2
TRIP BLANK	L10685-20	Water	P&T GAS/BTEX

1009772

8015M EXTRACTABLE PETROLEUM HYDROCARBONS

A Subsidiary of SPL Incorporated

Certificate of Analysis No. L10685

Client: Parsons Engineering Science
Client Address: 290 Elwood Davis Road #312
Liverpool, NY 13088
Attention: Martin Miller
Project Name: Greyhound
Site: Oakland, CA

Report Date: 10/20/97
Date(s) Received: 10/9/97
Date(s) Sampled: 10/8/97
Date(s) Analyzed: 10/16 & 10/20/97
Project Number: 730844.89343
Matrix: WATER

Method: 8015**

Units: mg/L

LAS ID	Sample ID	Diesel Range Organics
L10685-2	ES-5	6.51
L10685-3	BC-1	484
L10685-5	ES-1	2.77

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

A Subsidiary of SPL Incorporated

LAS BATCH QUALITY CONTROL REPORT
METHOD 8015/Diesel

Date: *10/20/97*

Batch ID: L082697GC6
Matrix: WATER
Units: mg/L

LABORATORY CONTROL SAMPLE

Spike Compounds	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits (**) (Mandatory) % Recovery Range
Diesel Range Organics	ND<0.05	3	2.27	76	43 - 145

MATRIX SPIKES

Spike Compounds	Sample Results <2>	Spike Added <3>	LCS Spike Result <1>	LCS Spike Recovery <4>	LCS Spike Duplicate Result <1>	LCS Spike Duplicate Recovery <5>	LCS/LCSD Relative % Difference (RPD)	QC Limits (***) (Advisory) RPD MAX	QC Limits (***) (Advisory) Recovery Range
Diesel Range Organics	N/A	3	2.27	76	2.75	92	19	20	43 - 145

Analyst: DA
Sequence Date: 8/26/97
LAS QC Work Group: 54459

* = Values Outside QC Range. << = Data Outside Method Specification Limits
NC = Not Calculated (Sample Exceeds Spike by a factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = | (<4> - <5>| / [(<4> + <5>) x 0.5] x 100
(**) = Source:
(***) = Source:

SAMPLES IN BATCH (LAS ID): L10685-2,3,5
L10687-4,5,6

8020 AROMATIC VOLATILE ORGANICS/ 8015M PURGE AND TRAP GASOLINE

A Subsidiary of SPL Incorporated

Certificate of Analysis No. *L10685*

Client: Parsons Engineering Science
Client Address: 290 Elwood Davis Road, #312
Liverpool, NY 13088
Attention: Martin Miller
Project Name: *Greyhound*
Site: Oakland, CA

Report Date: 10/10/97
Date(s) Received: 10/9/97
Date(s) Sampled: 10/8/97
Date(s) Analyzed: 10/10/97
Project Number: 730844.89343
Matrix: WATER

Method: 8020***
Batch No.: 101097GC4 B

Units: ug/L

LAS ID No.	Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
L10685-6	BC-3	ND<0.5	ND<1.0	1.9	1.5	ND<10
L10685-9	ES-5	260	470	160	590	ND<50
L10685-11	BC-1	310	600	370	1900	ND<50
L10685-14	ES-1	49	3.4	11	23	14
L10685-17	ES-2	190	46	46	70	ND<10
L10685-20	TRIP BLANK	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: *Methods for Chemical Analysis of Water and Wastes*, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

EPA METHOD 8310 (Polynuclear Aromatic Hydrocarbon)

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-5	LAS Sample ID:	L10685-1
Date Collected:	08-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	233%	*	20-110
2-Fluorobiphenyl	634%	*	24-110
p-Terphenyl-d14	85%		22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	NA	1.0	NQ
Acenaphthylene	208-96-8	NA	2.0	NQ
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	1.7	0.10	E
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-5	LAS Sample ID:	L10685-1
Date Collected:	08-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	14-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-3
Date Extracted:	10-OCT-97	Analytical Dilution:	30
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	445%	*	20-110
2-Fluorobiphenyl	1360%	*	24-110
p-Terphenyl-d14	176%	*	22-167

CONSTITUENT	CAS NO	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	200	30.	
Acenaphthylene	208-96-8	220	60.	
Acenaphthene	83-32-9	<6.0	6.0	
Fluorene	86-73-7	<6.0	6.0	
Phenanthrene	85-01-8	3.6	3.0	
Anthracene	120-12-7	<3.0	3.0	
Fluoranthene	206-44-0	<6.0	6.0	
Pyrene	129-00-0	<3.0	3.0	
Benzo(a)anthracene	56-55-3	<3.0	3.0	
Chrysene	218-01-9	<3.0	3.0	
Benzo(b)fluoranthene	205-99-2	<6.0	6.0	
Benzo(k)fluoranthene	207-08-9	<3.0	3.0	
Benzo(a)pyrene	50-32-8	<3.0	3.0	
Dibenzo(a,h)anthracene	53-70-3	<6.0	6.0	
Benzo(ghi)perylene	191-24-2	<6.0	6.0	
Indeno(1,2,3-cd)pyrene	193-39-5	<6.0	6.0	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-1	LAS Sample ID:	L10685-4
Date Collected:	08-OCT-97	Date Received:	09-OCT-97
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	157% *	20-110
2-Fluorobiphenyl	129% *	24-110
p-Terphenyl-d14	96%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	1.9	1.0	
Acenaphthylene	208-96-8	7.9	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	0.12	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Method Blank	LAS Sample ID:	54478MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	103%	24-110
p-Terphenyl-d14	103%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	<2.0	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS - HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54478LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	102%	24-110
p-Terphenyl-d14	106%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.4	1.0	
Acenaphthylene	208-96-8	4.9	2.0	
Acenaphthene	83-32-9	0.47	0.20	
Fluorene	86-73-7	0.47	0.20	
Phenanthrene	85-01-8	0.27	0.10	
Anthracene	120-12-7	0.23	0.10	
Fluoranthene	206-44-0	0.54	0.20	
Pyrene	129-00-0	0.27	0.10	
Benzo(a)anthracene	56-55-3	0.25	0.10	
Chrysene	218-01-9	0.25	0.10	
Benzo(b)fluoranthene	205-99-2	0.50	0.20	
Benzo(k)fluoranthene	207-08-9	0.25	0.10	
Benzo(a)pyrene	50-32-8	0.24	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.48	0.20	
Benzo(ghi)perylene	191-24-2	0.50	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.48	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS - HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54478LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	14-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-3
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	103%	20-110
2-Fluorobiphenyl	109%	24-110
p-Terphenyl-d14	106%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.6	1.0	
Acenaphthylene	208-96-8	5.1	2.0	
Acenaphthene	83-32-9	0.51	0.20	
Fluorene	86-73-7	0.52	0.20	
Phenanthrene	85-01-8	0.25	0.10	
Anthracene	120-12-7	0.24	0.10	
Fluoranthene	206-44-0	0.49	0.20	
Pyrene	129-00-0	0.24	0.10	
Benzo(a)anthracene	56-55-3	0.24	0.10	
Chrysene	218-01-9	0.25	0.10	
Benzo(b)fluoranthene	205-99-2	0.52	0.20	
Benzo(k)fluoranthene	207-08-9	0.27	0.10	
Benzo(a)pyrene	50-32-8	0.25	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.61	0.20	
Benzo(ghi)perylene	191-24-2	0.55	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.53	0.20	

LAS LABORATORIES

LCS DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54478LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	13-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-1
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	100%	20-110
2-Fluorobiphenyl	102%	24-110
p-Terphenyl-d14	106%	22-167

Constituent	Spike Added ug/L	LCS Concentration ug/L	LCS % Recovery	QC Limits
Naphthalene	2.50	2.44	98	33-135
Phenanthrene	0.250	0.266	106	42-139
Pyrene	0.250	0.270	108	45-135
Benzo(a)pyrene	0.250	0.240	96	42-135
Benzo(ghi)perylene	0.500	0.500	100	43-135

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54478LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	14-OCT-97	Analytical Batch ID:	101397-8310-HPLCC-3
Date Extracted:	10-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54478

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	103%	20-110
2-Fluorobiphenyl	109%	24-110
p-Terphenyl-d14	106%	22-167

Constituent	Spike Added ug/L	LCS DUP Concentration ug/L	% Recovery	RPD	QC Limits RPD	QC Limits % Recovery
Naphthalene	2.50	2.56	103	5	50	33-135
Phenanthrene	0.250	0.249	100	7	50	42-139
Pyrene	0.250	0.243	97	11	50	45-135
Benzo(a)pyrene	0.250	0.245	98	2	50	42-135
Benzo(ghi)perylene	0.500	0.547	109	9	50	43-135

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-1	Instrument ID:	HPLCC
Date Analyzed:	13-OCT-97 22:43	Analytical Batch ID:	101397-8310-HPLCC-1
File ID:	10139701.R18		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-1.00	988.1	1000.	-1.2
Acenaphthylene	208-96-8	-0.860	1948.	2000.	-2.6
2-Fluorobiphenyl	321-60-8	-0.790	528.9	500.0	5.8
Acenaphthene	83-32-9	-0.720	195.5	200.0	-2.2
Phenanthrene	85-01-8	-0.610	95.32	100.0	-4.7
Fluorene	86-73-7	-0.510	204.8	200.0	-2.4
Nitrobenzene-d5	4165-60-0	-0.460	532.4	500.0	6.5
Anthracene	120-12-7	-0.410	95.79	100.0	-4.2
p-Terphenyl-d14	1718-51-0	-0.400	511.7	500.0	2.3
Fluoranthene	206-44-0	-0.370	184.7	200.0	-7.6
Pyrene	129-00-0	-0.350	95.10	100.0	-4.9
Benzo(a)anthracene	56-55-3	-0.280	91.86	100.0	-8.1
Chrysene	218-01-9	-0.270	92.44	100.0	-7.6
Benzo(b)fluoranthene	205-99-2	-0.240	193.5	200.0	-3.3
Benzo(k)fluoranthene	207-08-9	-0.160	97.31	100.0	-2.7
Benzo(a)pyrene	50-32-8	-0.150	96.06	100.0	-3.9
Dibenzo(a,h)anthracene	53-70-3	0.000	194.3	200.0	-2.9
Benzo(ghi)perylene	191-24-2	0.0700	194.2	200.0	-2.9
Indeno(1,2,3-cd)pyrene	193-39-5	0.130	181.9	200.0	-9.0

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-3	Instrument ID:	HPLCC
Date Analyzed:	14-OCT-97 12:30	Analytical Batch ID:	101397-8310-HPLCC-3
File ID:	10139701.R34		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-0.500	982.5	1000.	-1.8
2-Fluorobiphenyl	321-60-8	-0.200	531.0	500.0	6.2
Acenaphthene	83-32-9	-0.180	195.5	200.0	-2.3
Acenaphthylene	208-96-8	-0.170	1960.	2000.	-2.0
Phenanthrene	85-01-8	-0.150	95.32	100.0	-4.7
Anthracene	120-12-7	0.000	94.49	100.0	-5.5
Fluorene	86-73-7	0.000	200.0	200.0	-0.0030
Nitrobenzene-d5	4165-60-0	0.000	532.4	500.0	6.5
Fluoranthene	206-44-0	0.000	185.9	200.0	-7.1
p-Terphenyl-d14	1718-51-0	0.100	510.6	500.0	2.1
Pyrene	129-00-0	0.120	93.69	100.0	-6.3
Benzo(b)fluoranthene	205-99-2	0.160	193.5	200.0	-3.3
Chrysene	218-01-9	0.180	92.88	100.0	-7.1
Benzo(a)anthracene	56-55-3	0.190	92.30	100.0	-7.7
Benzo(a)pyrene	50-32-8	0.220	91.08	100.0	-8.9
Benzo(k)fluoranthene	207-08-9	0.310	97.68	100.0	-2.3
Dibenzo(a,h)anthracene	53-70-3	0.420	198.7	200.0	-0.67
Benzo(ghi)perylene	191-24-2	0.550	194.8	200.0	-2.6
Indeno(1,2,3-cd)pyrene	193-39-5	0.660	179.9	200.0	-10.0

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-2	Instrument ID:	HPLCC
Date Analyzed:	14-OCT-97 08:46	Analytical Batch ID:	101397-8310-HPLCC-2
File ID:	10139701.R29		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-0.750	967.5	1000.	-3.2
Acenaphthylene	208-96-8	-0.690	1934.	2000.	-3.3
2-Fluorobiphenyl	321-60-8	-0.590	550.9	500.0	10.2
Acenaphthene	83-32-9	-0.540	193.1	200.0	-3.4
Fluorene	86-73-7	-0.310	215.4	200.0	7.7
Phenanthrene	85-01-8	-0.300	94.11	100.0	-5.9
Anthracene	120-12-7	-0.270	96.95	100.0	-3.1
Fluoranthene	206-44-0	-0.120	185.9	200.0	-7.1
p-Terphenyl-d14	1718-51-0	-0.100	514.6	500.0	2.9
Benzo(a)anthracene	56-55-3	0.000	92.30	100.0	-7.7
Nitrobenzene-d5	4165-60-0	0.000	538.4	500.0	7.7
Chrysene	218-01-9	0.000	92.21	100.0	-7.8
Pyrene	129-00-0	0.000	86.56	100.0	-13.4
Benzo(b)fluoranthene	205-99-2	0.000	195.5	200.0	-2.2
Benzo(a)pyrene	50-32-8	0.0700	96.65	100.0	-3.4
Benzo(k)fluoranthene	207-08-9	0.0800	98.97	100.0	-1.0
Dibenzo(a,h)anthracene	53-70-3	0.140	216.8	200.0	8.4
Benzo(ghi)perylene	191-24-2	0.200	192.9	200.0	-3.6
Indeno(1,2,3-cd)pyrene	193-39-5	0.260	186.8	200.0	-6.6

RUN LOGS/EXTRACTION SHEETS

HT= 10/14
DUE= 10/16

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs16 PAH)

EXTRACTION SHEET FOR: 8310 PAH Extraction

WORKSHEET NUMBER: 8310 PAH_54478

LAL #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/ CREATED	VOL/WT EXTR 10/10/97	WATER SAMPLE pH	SURR ML	MS ML	BROUGHT TO FINAL VOLUME OF 10/11/97	AMT GIVEN TO ANALYST
L10685-1		ES-5	08-OCT-97	09-OCT-97	1000 ml	7	1.0	N/A	5.0 mL	4.0 mL
L10685-4		ES-1	08-OCT-97	09-OCT-97	1000 ml	↓	↓	↓	↓	↓
L10687-1		ES-6	07-OCT-97	09-OCT-97	1000 ml					
L10687-2		BC-2	07-OCT-97	09-OCT-97	900 ml					
L10687-3		ES-4	07-OCT-97	09-OCT-97	1000 ml					
54478MB	MB	Method Blank		09-OCT-97	1000 ml	7				
54478LCS	LCS	Lab Ctrl Sample		09-OCT-97	↓	↓		1.0		
54478LCSD	LCSD	Lab Ctrl Sample Dup		09-OCT-97			↓	1.0	↓	↓
~~SPIKELOT54478~~	~~SPIKELOT~~	~~Spike Lot Sample~~		~~09-OCT-97~~						
									JDP	10-09-97

EXTRACTION METHOD: 3520B CONTINUOUS

DATE STARTED: 10/10/97 DATE COMPLETED: 10/11/97

CONTINUOUS DATE & TIME STARTED: 10/10/97 1:10 pm DATE & TIME COMPLETED: 10/11/97 7:10am

QC BATCH# : 8310 PAH_54478 LOT #'S

SURR ID # : 1037-16-1 CONC: 5 ug/ml MECL2: 37156 NA2SO4 : N/A

MS ID # : 1037-32-1 CONC: 0.25-5.0 ug/ml ACN : BP721 ACETONE: N/A

SIGNED: Steve Potter

SIGNED: [signature]

SPIKE WITNESS: [signature]

REVIEWED BY: [signature] 10-12-97

EXTRACT COC: RECIEVED BY: [signature] 10 13 97 10 55AM DATE: 10-13-97

NARRATIVE

The LCS seems to have picked up some contamination. It has a slighty dark tint, while the LCSD is clear. JDP 10/11/97

000001

LAS REVIEWED BY _____ INSTRUMENT ID HPLC-C LOGBOOK# LAS-97-LOG-1109 PAGE # _____

ANALYST	DATE AND TIME	LAS SAMPLE ID	DESCRIPTION/ SOLUTION	MATRIX/ DILUTION	RAW DATA FILE	METHOD FILE	REPORTED	REANALYZED	COMMENTS ALS NO. (VOA ONLY)
JF	10-13-97 ~~10-12-97~~	ALICAL-1 SR	STD 0605-67-5		101397.D01	101397.MET	NO		PRIMER
	12:30:15	AUTOCAL 1R	0605-67-1		.D02		YES		
	13:26:04	Autocal 2R	0605-67-2		.D03				
	14:03:09	Autocal 3R	0605-67-3		.D04				
	14:39:25	Autocal 4R	0605-67-4		.D05				
	15:14:57	Autocal 5R	0605-67-5		.D06				
	15:50:12	Instrument Blank			.D07				
	16:27:20	54478MB			.D08		YES		
	17:03:43	54478LCS			.D09		"		
	17:40:05	54478LCSD			.D10		NO	YES	
	18:18:50	54478LCSD			.D11		NO	YES	
	19:06:01	L10685-1			.D12		YES		
	19:42:23	L10685-4			.D13				
	20:18:28	L10687-1			.D14				
	20:54:58	L10687-2			.D15				
	21:31:13	L10687-3			.D16				
	22:07:32	IB			.D17				
	22:43:47	CCV4	0605-67-4		.D18		YES		
		IB			.D19				
	23:56	54107MB			.D20				
	10-14-97	54107LCS			.D21				
		L10609-1			.D22				
		L10609-2			.D23				
		54107MS			.D24				
		54107MSD			.D25				
		54 L10609-1 1:3			.D26				
		L10609-3 1:5			.D27				
		IB			.D28				
	8:46:09	CCV4	0605-67-4		.29		YES		
	10:07:03	54478LCSD			.30				

LAS REVIEWED BY _____ INSTRUMENT ID HPLC-C LOGBOOK# LAS-97-LOG-1109 PAGE # _____

ANALYST	DATE AND TIME	LAS SAMPLE ID	DESCRIPTION/ SOLUTION	MATRIX/ DILUTION	RAW DATA FILE	METHOD FILE	REPORTED	REANALYZED	COMMENTS ALS NO. (VOA ONLY)
DF	10-MAY-97 10:43:05	L1065-1 1:10			101397.D31	101397.MET	NO		
	11:19:19	L1065-1 1:20			.D32		YES		
	11:54:35	IB			.D33				
	1230:53	CCV4	0605-67-4		.D34		YES		
		54498MB			.D35				
		54498LCS			.D36				
		L10670-3			.D37				
		L10670-7			.D38				
		L10701-1			.D39				
		L10701-3			.D40				
		L10701-2			.D41				
		54498MS			.D42				
		54498MSD			.D43				
		IB			.D44				
	↓	CCV4	0605-67-4		.D45				
		IB			.D46				
		53157MB			.D47				
		53157LCS			.D48				
		L10397-7			.D49				
		L10397-8 1:50			.D50				
		L10422-14			.D51				
		53157MS			.D52				
		53157MSD			.D53				
		HB L10397 1:10			.D54				
		QC-V 7 11 1050			.D55				
		IB			.D56				
		CCV4	0605-67-4		.D57				

LAS Laboratories, Inc.

PARSONS ENGINEERING SCIENCES

ANALYTICAL DATA REPORT

FOR

8015M EXTRACTABLE PETROLEUM HYDROCARBONS AND POLYNUCLEAR AROMATIC HYDROCARBONS

LOG-IN NUMBER	L10779
QUOTATION NUMBER	Q710656-MISC
DOCUMENT FILE NUMBER	1021772

LAS LABORATORIES, INC. • 975 Kelly Johnson Drive • Las Vegas, Nevada 89119-3705
Telephone 702-361-0220 • Facsimile 702-361-8146

November 6, 1997

Parson Engineering Sciences
390 Elwood Davis Road, #312
Liverpool, NY 13088

ATTN: **Mr. Martin Miller**

RE:

LOG-IN NO.	**L10779**
QUOTATION NO.	**Q710656-MISC**
DOCUMENT FILE NO.	**1021772**

The attached data report contains the analytical results of samples that were submitted to Southern Petroleum Laboratories on 18 October 1997 and forwarded to LAS Laboratories, Inc. on 21 October 1997.

The temperature of the cooler upon receipt was 7°C. All sample containers coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data, please call Jenny Davis at (702) 361-3955, ext 213. If you are unable to contact the Client Services Representative, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Jenny L. Davis

Jenny L. Davis
Client Services Representative

cc: Client Services
Document Control

Organic Analytes - Case Narrative

General Introduction

The Case Narrative associated with the determination of organic analytes is separated into three (3) sections as follows:

SECTION 1

A brief word processed description of each method reported in this package. This is a general summary of the procedures used and quality control measures applied. It is not intended to include client-specific requirements. Results relating to initial calibration criteria and continuing calibration criteria are included in this section. This section will also describe any unusual events or important observations from the processing of the samples for each method. The initials of the reporting specialist compiling the Case Narrative with the date compiled will be at the end of this section.

SECTION 2

2. An *Exception Report* for each method printed from our data base that summarizes the results of all quality control (QC) measures. A separate *Exception Report* is included for each "QC Group" necessary for each method. At LAS, a QC Group is also called a "workgroup", or more descriptively, a "QC Batch". Each *Exception Report* includes:
   a. A table listing all the samples in the QC Group by LAS Sample ID and Client Sample ID with the date analyzed and Analytical Batch.
   b. Statement(s) relating to holding times for all samples in the QC Group.
   c. Statement(s) relating to the Method Blank (MB) for all samples in the QC Group.
   d. A list of all samples in the QC Group requiring reanalysis for dilution(s) or QC outliers.
   e. A list of all samples in the QC Group that failed surrogate recovery criteria with the recovery obtained and the Acceptance Limits.
   f. A list of all QC Samples that failed recovery criteria with the recovery obtained and the Acceptance Limits. The QC Samples are a laboratory control sample (LCS) and a matrix spike (MS)/matrix spike duplicate (MSD) pair. If insufficient sample exists for a MS/MSD pair, a laboratory control sample duplicate (LCSD) is included. Some methods call for a LCS/LCSD pair instead of a MS/MSD and some for MS/MSD and LCS/LCSD pairs.
   g. A list of all samples in the QC Group that failed internal standard criteria with the integrated areas of the internal standard(s) and their retention times. Note: Applicable to gas chromatography/mass spectrometry GC/MS methods only.

SECTION 3

A table describing all LAS default data qualifiers (flags) used to qualify the data reported on the result forms. Client-specific qualifiers may augment or replace these LAS default qualifiers.

Method 8015M Extractable Petroleum Hydrocarbons

This method quantifies extractable petroleum hydrocarbons using gas chromatography (GC) coupled with a flame ionization detector (FID). Target analytes are ranges of hydrocarbons not specific petroleum products. Examples are of target analytes are product range organics, like Diesel Range Organics or carbon number range organics, like C_{12} to C_{24} Range Organics. All FID-active substances, or practically speaking, all organic species, eluting within the specified range contribute to the reported value. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then concentrated to a final volume. The hydrocarbon range organics in the extract are quantified using GC/FID. To establish the retention time range for the specific target analyte, n-alkanes are analyze to define the chromatographic range of interest. A "common baseline" is then drawn between the n-alkane markers. All peaks eluting within the established retention time range are integrated and the areas summed. Products whose constituents closely match the target range are used to generate a five-point calibration. For example diesel fuel standards are used to calibrate for Diesel Range Organics or C_{12} to C_{24}. Calibration standard chromatograms and sample chromatograms are integrated identically as described above.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted which contains the same product used for calibration in a matrix which does not interfere with the analytical procedure. Recoveries of the target analyte in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked products can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with a surrogate compound, n-octacosane, before extraction. Recoveries of the surrogate are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows: None

Method 8310 Polynuclear Aromatic Hydrocarbons

This method identifies and quantifies polynuclear aromatic hydrocarbons (PAHs) using reverse phase High Performance Liquid Chromatography (HPLC) coupled with a ultraviolet (UV) detector and a fluorescence detector in series. The surrogate nitrobenzene-d_5 and the target analyte acenaphthylene are determined on the UV detector at 254 nm. All other surrogates and target analytes are determined on the fluorescence detector. Samples are extracted with an organic solvent to separate the target analytes from the sample matrix. The extract is then solvent exchanged to acetonitrile and concentrated to a final volume. The analytes in the extract are identified and quantified using HPLC/UV/Fluorescence. The fluorescence detector is programmed to switch excitation and emission wavelengths at various times during each run to maximize selectivity and sensitivity. However, extracts of matrices containing hydrocarbons usually must be diluted to obtain a valid chromatogram. Heavier hydrocarbons eluting near the end of the chromatogram pose the most difficulty. The heavier, more toxic PAHs elute in this region. This is an inherent limitation of the method. Analytes are quantified based on the absolute response of the analytes compared to the initial calibration.

Each time that samples are extracted a collection of quality control check samples are also extracted. A MB is extracted to verify that the laboratory procedures are not contaminating the samples. A LCS is extracted that contains most or all target analytes in a matrix which does not interfere with the analytical procedure. Recoveries of the target analytes in the LCS are compared to control limits to verify that the analytical systems are operating properly. MS/MSD samples are also prepared with each extraction batch, when sufficient sample exists. The MS and MSD samples are portions of client samples that have been spiked identically to the LCS. Recoveries of the spiked PAHs can be used to estimate the accuracy and precision of the measurements in a real client sample matrix, and they can be used to determine the effect of the sample matrix on the analytical procedures. In cases where there is not enough sample for an MS and MSD, a duplicate of the LCS, a LCSD, is prepared. Every sample, MB, MS, MSD, and LCS is spiked with surrogate compounds before extraction. Recoveries of the surrogate compounds are used to verify performance of the analytical systems on a sample by sample basis. A group of samples extracted together is called an extraction batch or a QC Group. The procedure used for extraction depends on the sample matrix, so samples with different matrices (e.g. solids, aqueous liquids, solvent-miscible organic fluids, etc.) will be extracted in separate QC Groups.

Before extracts are analyzed the instrument must have an acceptable five-point initial calibration. Daily, a beginning continuing calibration verification is analyzed to determine if the initial calibration is still valid. Extracts are then run in groups of ten. After each ten extracts, another continuing calibration verification is analyzed. If a continuing calibration verification shows that either the absolute instrument response or the retention times have changed since the initial calibration, corrective actions are taken which may include reanalysis of the affected extracts. A group of extracts analyzed between continuing calibration verifications is called an Analytical Batch. The Exception Report(s) in the following section describe any quality control outliers or comments pertaining to each QC Group.

Results relating to initial and continuing calibration criteria are as follows:
All initial calibration criteria were met.
All continuing calibration criteria were met.

Unusual events or important observations from the processing of the samples are as follows:
During the extraction of sample BC-1 (L10779-6) a distinct oil layer formed during the blowdown phase. The client was contacted and a decision was made to split the extract into two extracts. The acetonitrile layer was approximately 3 uL and the oil layer was approximately 1 uL. The oil layer was logged in as BC1-OIL (L10779-10). In order to get the final value these two sample results should be summed.

Matrix effect, target analyte concentration and dilution factors caused the surrogate recoveries to be out of criteria. This should not effect the reported data since the LCS/LCSD met all criteria.

Prepared By
Jenny L. Davis

November 6, 1997

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54888

SAMPLE SUMMARY

LAS Sample ID	Client Sample ID	Date Analyzed	Analytical Batch
54888LCS	Lab Ctrl Sample	28-OCT-97 18:50	101397-8310-HPLCC-7
54888LCSD	Lab Ctrl Sample Dup	28-OCT-97 19:26	101397-8310-HPLCC-7
54888MB	Method Blank	28-OCT-97 18:14	101397-8310-HPLCC-7
L10779-10 1	BC-1OIL	03-NOV-97 17:44	101397-8310-HPLCC-9
L10779-10	BC-1OIL	28-OCT-97 15:15	101397-8310-HPLCC-9
L10779-5	BC-3	28-OCT-97 17:02	101397-8310-HPLCC-7
L10779-6 1	BC-1	28-OCT-97 14:39	101397-8310-HPLCC-7
L10779-6	BC-1	28-OCT-97 14:04	101397-8310-HPLCC-7
L10779-7	ES-2	28-OCT-97 16:27	101397-8310-HPLCC-7
L10779-7 1	ES-2	28-OCT-97 20:01	101397-8310-HPLCC-7
L10779-8	ES-3	28-OCT-97 17:38	101397-8310-HPLCC-7

HOLDING TIMES
__X__ All holding times were met for samples in this QC group.
__X__ The extraction holding times were met.
__X__ The analytical holding times were met.

METHOD BLANK

__X__ No target analytes were detected in the method blank(s).

SAMPLE RESULTS

__X__ The following samples required reanalysis for either dilutions or QC outliers.

LAS Sample ID	Client Sample ID
L10779-10 1	BC-1OIL
L10779-6 1	BC-1
L10779-7 1	ES-2

__X__ The following samples required a dilution.

LAS Sample ID	Client Sample ID	Dilution
L10779-10 1	BC-1OIL	200
L10779-10	BC-1OIL	100
L10779-6 1	BC-1	200
L10779-6	BC-1	50
L10779-7 1	ES-2	10

SURROGATE RECOVERIES

__X__ The following samples failed the recovery criteria for this QC group.

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
EXCEPTION REPORT
QC GROUP: 8310 PAH_54888

LAS Sample ID		Client Sample ID	Parameter	Recovery	Limits
L10779-10	1	BC-1OIL	Nitrobenzene-d5	0.00%	20-110
L10779-10	1	BC-1OIL	2-Fluorobiphenyl	80400%	24-110
L10779-10	1	BC-1OIL	p-Terphenyl-d14	0.00%	22-167
L10779-10		BC-1OIL	Nitrobenzene-d5	404%	20-110
L10779-10		BC-1OIL	2-Fluorobiphenyl	83800%	24-110
L10779-10		BC-1OIL	p-Terphenyl-d14	993%	22-167
L10779-5		BC-3	Nitrobenzene-d5	142%	20-110
L10779-6	1	BC-1	Nitrobenzene-d5	482%	20-110
L10779-6	1	BC-1	2-Fluorobiphenyl	24300%	24-110
L10779-6	1	BC-1	p-Terphenyl-d14	432%	22-167
L10779-6		BC-1	Nitrobenzene-d5	423%	20-110
L10779-6		BC-1	2-Fluorobiphenyl	23600%	24-110
L10779-7		ES-2	Nitrobenzene-d5	321%	20-110
L10779-7		ES-2	2-Fluorobiphenyl	676%	24-110
L10779-7	1	ES-2	Nitrobenzene-d5	344%	20-110
L10779-7	1	ES-2	2-Fluorobiphenyl	911%	24-110

QC SAMPLE RESULTS

__X__ All QC samples met criteria for this QC group.

__X__ All associated CCV compounds met the percent deviation criteria.

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-10	Instrument ID:	HPLCC
Date Analyzed:	28-OCT-97 11:09	Analytical Batch ID:	101397-8310-HPLCC-7
File ID:	10139701.R61		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-1.00	1929.	2000.	-3.5
Acenaphthylene	208-96-8	-0.690	3976.	4000.	-0.59
2-Fluorobiphenyl	321-60-8	-0.590	987.9	1000.	-1.2
Acenaphthene	83-32-9	-0.540	378.1	400.0	-5.5
Nitrobenzene-d5	4165-60-0	-0.460	989.7	1000.	1.0
Phenanthrene	85-01-8	-0.450	189.9	200.0	-5.0
Anthracene	120-12-7	-0.410	192.2	200.0	-3.9
Fluoranthene	206-44-0	-0.370	382.2	400.0	-4.5
Fluorene	86-73-7	-0.340	354.7	400.0	-11.3
Pyrene	129-00-0	-0.230	187.8	200.0	-6.1
p-Terphenyl-d14	1718-51-0	-0.200	950.8	1000.	-4.9
Benzo(a)anthracene	56-55-3	0.000	191.0	200.0	-4.5
Chrysene	218-01-9	0.0900	192.5	200.0	-3.7
Benzo(b)fluoranthene	205-99-2	0.240	384.7	400.0	-3.8
Benzo(a)pyrene	50-32-8	0.370	193.5	200.0	-3.3
Benzo(k)fluoranthene	207-08-9	0.390	192.6	200.0	-3.7
Dibenzo(a,h)anthracene	53-70-3	0.490	390.1	400.0	-2.5
Benzo(ghi)perylene	191-24-2	0.610	386.0	400.0	-3.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.860	381.2	400.0	-4.7

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-9	Instrument ID:	HPLCC
Date Analyzed:	28-OCT-97 21:13	Analytical Batch ID:	101397-8310-HPLCC-7
File ID:	10139701.R75		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-0.750	936.2	1000.	-6.4
Acenaphthylene	208-96-8	-0.520	1919.	2000.	-4.1
Nitrobenzene-d5	4165-60-0	-0.460	512.3	500.0	2.5
2-Fluorobiphenyl	321-60-8	-0.390	507.7	500.0	1.5
Acenaphthene	83-32-9	-0.360	188.1	200.0	-6.0
Phenanthrene	85-01-8	-0.300	91.78	100.0	-8.2
p-Terphenyl-d14	1718-51-0	-0.200	491.6	500.0	-1.7
Fluorene	86-73-7	-0.170	188.6	200.0	-5.7
Anthracene	120-12-7	-0.140	89.82	100.0	-10.2
Fluoranthene	206-44-0	-0.120	179.7	200.0	-10.1
Pyrene	129-00-0	-0.120	91.52	100.0	-8.5
Benzo(a)anthracene	56-55-3	-0.0900	89.80	100.0	-10.2
Chrysene	218-01-9	-0.0900	91.04	100.0	-9.0
Benzo(b)fluoranthene	205-99-2	-0.0800	185.2	200.0	-7.4
Benzo(a)pyrene	50-32-8	-0.0700	86.62	100.0	-13.4
Dibenzo(a,h)anthracene	53-70-3	-0.0700	186.0	200.0	-7.0
Benzo(k)fluoranthene	207-08-9	0.000	93.12	100.0	-6.9
Benzo(ghi)perylene	191-24-2	0.0700	184.9	200.0	-7.6
Indeno(1,2,3-cd)pyrene	193-39-5	0.130	180.8	200.0	-9.6

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID: R101397-HPLCC-5 Instrument ID: HPLCC
Date Analyzed: 03-NOV-97 13:45 Analytical Batch ID: 101397-8310-HPLCC-9
File ID: 10139701.R82

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Naphthalene	91-20-3	-1.00	1003.	1000.	0.34
2-Fluorobiphenyl	321-60-8	-0.790	555.5	500.0	11.1
Acenaphthylene	208-96-8	-0.690	2075.	2000.	3.8
Acenaphthene	83-32-9	-0.540	200.0	200.0	-0.0080
Nitrobenzene-d5	4165-60-0	-0.460	555.1	500.0	11.0
Fluorene	86-73-7	-0.340	182.8	200.0	-8.6
Phenanthrene	85-01-8	-0.300	100.7	100.0	0.72
Anthracene	120-12-7	-0.140	100.3	100.0	0.35
Fluoranthene	206-44-0	0.000	197.1	200.0	-1.4
Pyrene	129-00-0	0.120	99.55	100.0	-0.45
p-Terphenyl-d14	1718-51-0	0.300	537.2	500.0	7.4
Chrysene	218-01-9	0.450	99.81	100.0	-0.19
Benzo(a)anthracene	56-55-3	0.470	98.51	100.0	-1.5
Benzo(b)fluoranthene	205-99-2	0.490	202.2	200.0	1.1
Benzo(a)pyrene	50-32-8	0.520	101.0	100.0	1.0
Dibenzo(a,h)anthracene	53-70-3	0.560	213.5	200.0	6.7
Benzo(k)fluoranthene	207-08-9	0.620	102.3	100.0	2.3
Benzo(ghi)perylene	191-24-2	0.680	208.2	200.0	4.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.860	197.2	200.0	-1.4

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
CONTINUING CALIBRATION SUMMARY

LAS Sample ID:	R101397-HPLCC-6	Instrument ID:	HPLCC
Date Analyzed:	03-NOV-97 18:19	Analytical Batch ID:	101397-8310-HPLCC-9
File ID:	10139701.R87		

CONSTITUENT	CAS No.	RT	CONC (ug/ml)	NOMINAL CONC	%D
Nitrobenzene-d5	4165-60-0	-3.24	572.6	500.0	14.5
Naphthalene	91-20-3	-2.49	1042.	1000.	4.2
Acenaphthylene	208-96-8	-2.06	2165.	2000.	8.3
2-Fluorobiphenyl	321-60-8	-1.96	557.9	500.0	11.6
Phenanthrene	85-01-8	-1.66	104.6	100.0	4.6
Acenaphthene	83-32-9	-1.61	206.4	200.0	3.2
Anthracene	120-12-7	-1.50	102.9	100.0	2.9
Fluorene	86-73-7	-1.36	192.0	200.0	-4.0
Fluoranthene	206-44-0	-1.24	203.0	200.0	1.5
Pyrene	129-00-0	-0.930	103.7	100.0	3.7
p-Terphenyl-d14	1718-51-0	-0.600	563.2	500.0	12.6
Benzo(b)fluoranthene	205-99-2	-0.570	212.3	200.0	6.2
Chrysene	218-01-9	-0.550	104.2	100.0	4.2
Benzo(a)anthracene	56-55-3	-0.470	103.7	100.0	3.7
Benzo(k)fluoranthene	207-08-9	-0.390	107.0	100.0	7.0
Benzo(a)pyrene	50-32-8	-0.300	104.2	100.0	4.2
Dibenzo(a,h)anthracene	53-70-3	-0.140	225.7	200.0	12.8
Benzo(ghi)perylene	191-24-2	0.000	218.1	200.0	9.0
Indeno(1,2,3-cd)pyrene	193-39-5	0.0700	214.7	200.0	7.3

LAS Laboratories, Inc.
DATA QUALIFIERS FOR ORGANIC ANALYSES

[Revised 02/28/97]

For Use On The Analytical Data Reporting Forms	
A	***For CLP analyses Only*** – The TIC is a suspected aldol-condensation product.
B	Any constituent that was also detected in the associated blank whose concentration was greater than the practical or reporting detection limit (PQL or RDL), or method detection limit (MDL) for client samples that require "J" flags to be reported.
C	Constituent confirmed by GC/MS analysis. *[pesticide/PCB analyses only]*
D	Constituent detected in the diluted sample. It also indicates that an accurate quantitation is not possible due to surrogates being diluted out of the samples during the course of the analysis.
E	Constituent concentration exceeded the calibration range.
G	The quantitation is not gasoline or diesel but believed to be some other combination of hydrocarbons.
H	Sample analysis performed outside of method- or client-specified maximum holding time requirement.
J	*Estimated value* – (1) constituent detected at a level less than the RDL or PQL and greater than or equal to the MDL; (2) estimated concentration for TICs ***(For CLP Reporting Only)***.
N	***For CLP Reporting Only*** – Tentatively identified constituents (TICs) identified based on mass spectral library search.
NQ	Analyte detected, but Not Quantified; see result from subsequent analysis
P	***For CLP Reporting Only*** – The percent difference between the concentrations detected on both GC columns was greater than 25 percent *[pesticide/PCB analyses only].*
U	***For CLP Reporting Only*** – Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
X, Y, or Z	Analyst-defined qualifier.
N/A (% Moisture)	N/A in the % moisture cell indicates that data are reported on an "*as received*" basis. A value in the % moisture cell indicates that data are reported based on a "*dry weight*" basis.
For Use On The QC Data Reporting Forms	
*	QC data (i.e., percent recovery data for matrix spike, matrix spike duplicate, laboratory control standard, or surrogates; and RPD for matrix spike duplicate or unspiked duplicate) exceeded acceptance limits.
a[1]	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
b[1]	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

[1] Used as footnote designations on the QC Summary Form.

SAMPLE RECEIPT LOG-IN
AND
CHAIN OF CUSTODY

Revised

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Nov 06 1997, 01:39 pm

Login Number: L10779
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	PR	Due Date
L10779-1	BC-3	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-2	BC-1	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-3	ES-2	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-4	ES-3	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-5	BC-3	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: EXPENDED					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-6	BC-1	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: EXPENDED					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-7	ES-2	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: EXPENDED					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-8	ES-3	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: EXPENDED					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-9	REPORT TYPE	21-OCT-97	21-OCT-97		28-OCT-97
Location: RFG01-9A					
Water 1 S DAVIS					
Water 1 S GC2					

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Nov 06 1997, 01:39 pm

Login Number: L10779
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	Due PR Date
L10779-10	BC-10IL	18-OCT-97	21-OCT-97	28-OCT-97

Location:
Water 1 S 8310 PAH Hold:25-OCT-97

Signature: Jennifer L. Davis

Date: 11/6/97

LAS LABORATORIES
LOGIN CHAIN OF CUSTODY REPORT (ln01)
Oct 22 1997, 07:48 am

Login Number: L10779
Account: 772 SPL - Fullerton *Fullerton, CA
Project: FULLERTON MISC. Miscellaneous Fullerton Clients

Laboratory Sample Number	Client Sample Number	Collect Date	Receive Date	PR	Due Date
L10779-1	BC-3	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-2	BC-1	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-3	ES-2	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-4	ES-3	18-OCT-97	21-OCT-97		28-OCT-97
TPH=Diesel; Temp 3					
Location: EXPENDED					
Water 1 S 8015M - TPH		Hold:25-OCT-97			
L10779-5	BC-3	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: 124					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-6	BC-1	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: 124					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-7	ES-2	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: 124					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-8	ES-3	18-OCT-97	21-OCT-97		28-OCT-97
Temp 3					
Location: 124					
Water 1 S 8310 PAH		Hold:25-OCT-97			
L10779-9	REPORT TYPE	21-OCT-97	21-OCT-97		28-OCT-97
Location: RFG01-9A					
Water 1 S DAVIS					
Water 1 S GC2					

Signature: Jenny L. Davis

Date: 10/22/97

102772

LAS Laboratories
SAMPLE SUMMARY REPORT (su02 S1)
SPL - Fullerton *Fullerton, CA

Client Sample Number	LAL Sample Number	SDG Number	Matrix	Method
BC-1	L10779-2		Water	8015M - TPH
	L10779-6		Water	8310 PAH
BC-3	L10779-1		Water	8015M - TPH
	L10779-5		Water	8310 PAH
ES-2	L10779-3		Water	8015M - TPH
	L10779-7		Water	8310 PAH
ES-3	L10779-4		Water	8015M - TPH
	L10779-8		Water	8310 PAH
REPORT TYPE	L10779-9		Water	DAVIS
	L10779-9		Water	GC2

102772

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No: 9710061

C- 04239

page 1 of 1

Client Name: Parsons ES					matrix	bottle	size	pres.		Requested Analysis									
Address/Phone: 2101 Webster st. #700, Oakland, CA					W=water S=soil SL=sludge O=other:	P=plastic A=amber glass G=glass V=vial	1=1 liter 4=4oz 40=vial 8=8oz 16=16oz	1=HCl 2=HNO3 3=H2SO4 O=other:	Number of Containers	TPH-d	PAHs							
Client Contact: Eric Storrs																			
Project Name: Greyhound - Oakland																			
Project Number: 730844																			
Project Location: Oakland, CA																			
Invoice To:																			
SAMPLE ID	DATE	TIME	comp	grab															
BC-3	10/18/97	0950			W	A	1	0/3	2	x	x								
BC-1	"	1030			W	A	1	0/3	2	x	x								
ES-2	"	1145			W	A	1	0/3	2	x	x								
ES-3	"	1245			W	A	1	0/3	2	x	x								

Client/Consultant Remarks: Fed Ex Airbill: 522930689 1

Laboratory remarks:

Intact? ☒ Y ☐ N

Temp: 16 °C

Requested TAT

24hr ☐ 72hr ☐

48hr ☐ Standard ☐

Other ☒ 7 days

Special Reporting Requirements: Fax Results ☒ Raw Data ☐ Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial):

	date	time		date	time
1. Relinquished by Sampler:	10/18/97	14:00	2. Received by:	10/20/97	
3. Relinquished by:	date	time	4. Received by: CAS	10/21/97	9:45
5. Relinquished by:	date	time	6. Received by Laboratory.		

☐ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459 Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

☒ 1511 E. Orangethorpe Avenue, Fullerton, CA 92631 (714) 447-6868

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: SPL - Fullerton *Fullerton, CA(772)
PROJECT: FULLERTON MISC.
LOGIN: L10779
MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	pH
1	L10779-1	BC-3	8015M - TPH	
2	L10779-2	BC-1	8015M - TPH	
3	L10779-3	ES-2	8015M - TPH	1
4	L10779-4	ES-3	8015M - TPH	1
5	L10779-5	BC-3	8310 PAH	7
6	L10779-6	BC-1	8310 PAH	7
7	L10779-7	ES-2	8310 PAH	7
8	L10779-8	ES-3	8310 PAH	7

Signature: [signature] Date: 10-21-97

102772

LAS
A Subsidiary of SPL Laboratories

Sample Login
Login Review Checklist

Login Number 610779

The Login Review Checklist documents the review of the information entered into the ACS database for accuracy and useability. For effective login review, five items are necessary. They are the Chain of Custody (COC) (or equivalent), the Sample Summary Report (SSR), the Login COC Report, the Sample Receiving Checklist, and the Quote/COC Reconciliation Form. This checklist should be affixed to each login package prior to distribution.

SAMPLE SUMMARY REPORT	YES	NO	N/A	COMMENT
1. Are all samples on the COC logged in or the proper discrepancies noted on the SSR?	4			
2. Are all Client Sample IDs logged in correctly?	4			
3. Are all matrices indicated correctly?	4			
4. Are all analyses on the COC logged in for appropriate samples?	4			
5. Are samples logged in for the proper products?	4			

LOGIN CHAIN OF CUSTODY REPORT	YES	NO	N/A	COMMENT
1. Are the collect, receive, and due dates correct for every sample?	4			
2. Have all appropriate comments been included?	4			

SAMPLE RECEIVING CHECKLIST	YES	NO	N/A	COMMENT
1. Are all discrepancies between the COC and login noted (if applicable)?	4			

LOGIN pH CHECK (applicable projects only)	YES	NO	N/A	COMMENT
1. Has the pH of all aqueous samples been checked and the report attached?	4			

D Fischer 10-21-97
Login Specialist signature date

LK 10/21/97
Secondary Reviewer signature date

Jenny L. Davis 10/22/97
Project Management signature date

revised 07-17-97, dcf, H:\fischer\sop\loginrev.chk

1C21772

LAS LABORATORIES, INC.

Sample Receiving Checklist

Page ___ of ___

Client Name: SPL Fullerton Job No: L10779 Cooler ID:

COOLER CONDITION UPON RECEIPT				
Temperature of cooler upon receipt: 3°C				
temperature of temp. blank upon receipt:				
	yes	no	n/a	*Comments/Discrepancies
custody seals present			✓	
custody seals intact			✓	
chain of custody present	✓			
blue ice(or equiv.)present	✓			
blue ice(or equiv.)frozen	✓			
rad survey completed	✓			

SAMPLE CONDITION UPON RECEIPT				
	yes	no	n/a	*Comments/Discrepancies
all bottles labeled	✓			
bottle custody seal present		✓		
bottle custody seal intact			✓	
samples intact	✓			
proper container used for sample	✓			
sample volume sufficient for analysis	✓			
proper pres. indicated on the COC	✓			
VOA's contain headspace			✓	
are samples bi-phasic(if so, indicate sample ID's):			✓	

MISCELLANEOUS ITEMS				
	yes	no	n/a	*Comments/Discrepancies
samples with short holding times		✓		
samples to subcontract		✓		

ADDITIONAL COMMENTS/DISCREPANCIES

Completed by / date: [signature] 10-21-97

sent to the client (date/initials): ** Client's signature upon receipt:

Notes: = contact the appropriate CSR of any discrepancies immediately upon receipt*

*** = please review this information and return via facsimile to the appropriate CSR (702)361-8146*

VERSION 3.0(03-03-97)

L10779

8015M EXTRACTABLE PETROLEUM HYDROCARBONS

A Subsidiary of SPL Incorporated

Certificate of Analysis No. L10779

Client:	Parsons Engineering Science	**Report Date:**	11/5/97
Client Address:	290 Elwood Davis Road #312	**Date(s) Received:**	10/20/97
	Liverpool, NY 13088	**Date(s) Sampled:**	10/18/97
Attention:	Martin Miller	**Date(s) Analyzed:**	10/25/97
Project Name:	Greyhound Lines	**Project Number:**	730844
Site:	Oakland, CA	**Matrix:**	WATER

Method: 8015**

Units: mg/L

LAS ID	Sample ID	Diesel Range Organics
L10779-1	BC-3	1.34
L10779-2	BC-1	149
L10779-3	ES-2	8.04
L10779-4	ES-3	0.205

Results reported at Practical Quantitation Limits unless otherwise specified.

*Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water and Wastewater, 18th Edition
***Ref: Test Methods for Evaluating Solid Waste, EPA SW-846, 3rd Edition

LAS/SPL California License Number 1392

A Subsidiary of SPL Incorporated

LAS BATCH QUALITY CONTROL REPORT
METHOD 8015/Diesel

Batch ID: L082597GC6
Matrix: WATER
Units: mg/L

LABORATORY CONTROL SAMPLE

Spike Compounds	Method Blank Result	Spike Added	Blank Spike		QC Limits (**) (Mandatory)
			Result	Recovery	
	<2>	<3>	<1>	%	% Recovery Range
Diesel Range Organics	ND<0.05	3.00	2.76	92	43 - 145

MATRIX SPIKES

Spike Compounds	Sample Results	Spike Added	LCS Spike		LCS Spike Duplicate		LCS/LCSD Relative % Difference (RPD)	QC Limits (***) (Advisory)	
			Result	Recovery	Result	Recovery		RPD MAX	Recovery Range
	<2>	<3>	<1>	<4>	<1>	<5>			
Diesel Range Organics	N/A	3.00	2.76	92	2.89	96	4.0	20	43 - 145

Analyst: DA
Sequence Date: 8/26/97
LAS QC Work Group: 54885

* = Values Outside QC Range. << = Data Outside Method Specification Limits
NC = Not Calculated (Sample Exceeds Spike by a factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = | (<4> - <5>| / [(<4> + <5>) x 0.5] x 100
(**) = Source:
(***) = Source:

SAMPLES IN BATCH (LAS ID): L10779-1,2,3,4

EPA METHOD 8310 (Polynuclear Aromatic Hydrocarbon)

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-3	LAS Sample ID:	L10779-5
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 17:02	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	0.97
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	142% *	20-110
2-Fluorobiphenyl	85%	24-110
p-Terphenyl-d14	100%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<0.97	0.97	
Acenaphthylene	208-96-8	<1.9	1.9	
Acenaphthene	83-32-9	<0.19	0.19	
Fluorene	86-73-7	<0.19	0.19	
Phenanthrene	85-01-8	<0.097	0.097	
Anthracene	120-12-7	<0.097	0.097	
Fluoranthene	206-44-0	<0.19	0.19	
Pyrene	129-00-0	<0.097	0.097	
Benzo(a)anthracene	56-55-3	<0.097	0.097	
Chrysene	218-01-9	<0.097	0.097	
Benzo(b)fluoranthene	205-99-2	<0.19	0.19	
Benzo(k)fluoranthene	207-08-9	<0.097	0.097	
Benzo(a)pyrene	50-32-8	<0.097	0.097	
Dibenzo(a,h)anthracene	53-70-3	<0.19	0.19	
Benzo(ghi)perylene	191-24-2	<0.19	0.19	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.19	0.19	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-1	LAS Sample ID:	L10779-6
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 14:04	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	50
Matrix:	Water	Preparation Dilution:	1.4
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	423% *	20-110
2-Fluorobiphenyl	23600% *	24-110
p-Terphenyl-d14	167%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	1600	69.	E
Acenaphthylene	208-96-8	2500	140	E
Acenaphthene	83-32-9	<14.	14.	
Fluorene	86-73-7	26.	14.	
Phenanthrene	85-01-8	89.	6.9	E
Anthracene	120-12-7	<6.9	6.9	
Fluoranthene	206-44-0	<14.	14.	
Pyrene	129-00-0	<6.9	6.9	
Benzo(a)anthracene	56-55-3	<6.9	6.9	
Chrysene	218-01-9	<6.9	6.9	
Benzo(b)fluoranthene	205-99-2	<14.	14.	
Benzo(k)fluoranthene	207-08-9	<6.9	6.9	
Benzo(a)pyrene	50-32-8	<6.9	6.9	
Dibenzo(a,h)anthracene	53-70-3	<14.	14.	
Benzo(ghi)perylene	191-24-2	<14.	14.	
Indeno(1,2,3-cd)pyrene	193-39-5	<14.	14.	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-1	LAS Sample ID:	L10779-6
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 14:39	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	200
Matrix:	Water	Preparation Dilution:	1.4
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	482%	*	20-110
2-Fluorobiphenyl	24300%	*	24-110
p-Terphenyl-d14	432%	*	22-167

CONSTITUENT	CAS NO	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	1700	280	
Acenaphthylene	208-96-8	2500	550	
Acenaphthene	83-32-9	<55.	55.	
Fluorene	86-73-7	33.	55.	J
Phenanthrene	85-01-8	110	28.	
Anthracene	120-12-7	<28.	28.	
Fluoranthene	206-44-0	<55.	55.	
Pyrene	129-00-0	<28.	28.	
Benzo(a)anthracene	56-55-3	<28.	28.	
Chrysene	218-01-9	<28.	28.	
Benzo(b)fluoranthene	205-99-2	<55.	55.	
Benzo(k)fluoranthene	207-08-9	<28.	28.	
Benzo(a)pyrene	50-32-8	<28.	28.	
Dibenzo(a,h)anthracene	53-70-3	<55.	55.	
Benzo(ghi)perylene	191-24-2	<55.	55.	
Indeno(1,2,3-cd)pyrene	193-39-5	<55.	55.	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-2	LAS Sample ID:	L10779-7
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 16:27	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	0.97
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	321%	*	20-110
2-Fluorobiphenyl	676%	*	24-110
p-Terphenyl-d14	70%		22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	26.	0.97	E
Acenaphthylene	208-96-8	36.	1.9	E
Acenaphthene	83-32-9	0.32	0.19	
Fluorene	86-73-7	4.2	0.19	E
Phenanthrene	85-01-8	NA	0.097	NQ
Anthracene	120-12-7	NA	0.097	NQ
Fluoranthene	206-44-0	NA	0.19	NQ
Pyrene	129-00-0	NA	0.097	NQ
Benzo(a)anthracene	56-55-3	<0.097	0.097	
Chrysene	218-01-9	<0.097	0.097	
Benzo(b)fluoranthene	205-99-2	<0.19	0.19	
Benzo(k)fluoranthene	207-08-9	<0.097	0.097	
Benzo(a)pyrene	50-32-8	<0.097	0.097	
Dibenzo(a,h)anthracene	53-70-3	<0.19	0.19	
Benzo(ghi)perylene	191-24-2	<0.19	0.19	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.19	0.19	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-2	LAS Sample ID:	L10779-7
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 20:01	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	10
Matrix:	Water	Preparation Dilution:	0.97
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	344%	*	20-110
2-Fluorobiphenyl	911%	*	24-110
p-Terphenyl-d14	118%		22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	42.	9.7	
Acenaphthylene	208-96-8	48.	19.	
Acenaphthene	83-32-9	0.56	1.9	J
Fluorene	86-73-7	6.1	1.9	
Phenanthrene	85-01-8	2.1	0.97	
Anthracene	120-12-7	0.24	0.97	J
Fluoranthene	206-44-0	<1.9	1.9	
Pyrene	129-00-0	0.26	0.97	J
Benzo(a)anthracene	56-55-3	<0.97	0.97	
Chrysene	218-01-9	<0.97	0.97	
Benzo(b)fluoranthene	205-99-2	<1.9	1.9	
Benzo(k)fluoranthene	207-08-9	<0.97	0.97	
Benzo(a)pyrene	50-32-8	<0.97	0.97	
Dibenzo(a,h)anthracene	53-70-3	<1.9	1.9	
Benzo(ghi)perylene	191-24-2	<1.9	1.9	
Indeno(1,2,3-cd)pyrene	193-39-5	<1.9	1.9	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	ES-3	LAS Sample ID:	L10779-8
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 17:38	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
Matrix:	Water	Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	95%	20-110
2-Fluorobiphenyl	99%	24-110
p-Terphenyl-d14	101%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	<2.0	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-1OIL	LAS Sample ID:	L10779-10
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	28-OCT-97 15:15	Analytical Batch ID:	101397-8310-HPLCC-9
Date Extracted:	22-OCT-97	Analytical Dilution:	100
Matrix:	Water	Preparation Dilution:	4.2
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	404%	*	20-110
2-Fluorobiphenyl	83800%	*	24-110
p-Terphenyl-d14	993%	*	22-167

CONSTITUENT	CAS NO	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	4900	420	E
Acenaphthylene	208-96-8	8700	830	E
Acenaphthene	83-32-9	<83.	83.	
Fluorene	86-73-7	270	83.	
Phenanthrene	85-01-8	310	42.	
Anthracene	120-12-7	<42.	42.	
Fluoranthene	206-44-0	<83.	83.	
Pyrene	129-00-0	<42.	42.	
Benzo(a)anthracene	56-55-3	<42.	42.	
Chrysene	218-01-9	<42.	42.	
Benzo(b)fluoranthene	205-99-2	<83.	83.	
Benzo(k)fluoranthene	207-08-9	<42.	42.	
Benzo(a)pyrene	50-32-8	<42.	42.	
Dibenzo(a,h)anthracene	53-70-3	<83.	83.	
Benzo(ghi)perylene	191-24-2	<83.	83.	
Indeno(1,2,3-cd)pyrene	193-39-5	<83.	83.	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC
8310 PAH

Client Sample ID:	BC-1OIL	LAS Sample ID:	L10779-10
Date Collected:	18-OCT-97	Date Received:	21-OCT-97
Date Analyzed:	03-NOV-97 17:44	Analytical Batch ID:	101397-8310-HPLCC-9
Date Extracted:	22-OCT-97	Analytical Dilution:	200
Matrix:	Water	Preparation Dilution:	4.2
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY		QC Limits
Nitrobenzene-d5	0.00%	*	20-110
2-Fluorobiphenyl	80400%	*	24-110
p-Terphenyl-d14	0.00%	*	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	4900	830	
Acenaphthylene	208-96-8	8100	1700	
Acenaphthene	83-32-9	<170	170	
Fluorene	86-73-7	<170	170	
Phenanthrene	85-01-8	320	83.	
Anthracene	120-12-7	<83.	83.	
Fluoranthene	206-44-0	<170	170	
Pyrene	129-00-0	<83.	83.	
Benzo(a)anthracene	56-55-3	<83.	83.	
Chrysene	218-01-9	<83.	83.	
Benzo(b)fluoranthene	205-99-2	<170	170	
Benzo(k)fluoranthene	207-08-9	<83.	83.	
Benzo(a)pyrene	50-32-8	<83.	83.	
Dibenzo(a,h)anthracene	53-70-3	<170	170	
Benzo(ghi)perylene	191-24-2	<170	170	
Indeno(1,2,3-cd)pyrene	193-39-5	<170	170	

LAS LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Method Blank	LAS Sample ID:	54888MB
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	28-OCT-97 18:14	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	90%	20-110
2-Fluorobiphenyl	91%	24-110
p-Terphenyl-d14	97%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	<1.0	1.0	
Acenaphthylene	208-96-8	<2.0	2.0	
Acenaphthene	83-32-9	<0.20	0.20	
Fluorene	86-73-7	<0.20	0.20	
Phenanthrene	85-01-8	<0.10	0.10	
Anthracene	120-12-7	<0.10	0.10	
Fluoranthene	206-44-0	<0.20	0.20	
Pyrene	129-00-0	<0.10	0.10	
Benzo(a)anthracene	56-55-3	<0.10	0.10	
Chrysene	218-01-9	<0.10	0.10	
Benzo(b)fluoranthene	205-99-2	<0.20	0.20	
Benzo(k)fluoranthene	207-08-9	<0.10	0.10	
Benzo(a)pyrene	50-32-8	<0.10	0.10	
Dibenzo(a,h)anthracene	53-70-3	<0.20	0.20	
Benzo(ghi)perylene	191-24-2	<0.20	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.20	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54888LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	28-OCT-97 18:50	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	89%	20-110
2-Fluorobiphenyl	90%	24-110
p-Terphenyl-d14	97%	22-167

CONSTITUENT	CAS NO.	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.1	1.0	
Acenaphthylene	208-96-8	4.5	2.0	
Acenaphthene	83-32-9	0.43	0.20	
Fluorene	86-73-7	0.41	0.20	
Phenanthrene	85-01-8	0.23	0.10	
Anthracene	120-12-7	0.20	0.10	
Fluoranthene	206-44-0	0.45	0.20	
Pyrene	129-00-0	0.23	0.10	
Benzo(a)anthracene	56-55-3	0.23	0.10	
Chrysene	218-01-9	0.23	0.10	
Benzo(b)fluoranthene	205-99-2	0.48	0.20	
Benzo(k)fluoranthene	207-08-9	0.24	0.10	
Benzo(a)pyrene	50-32-8	0.22	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.50	0.20	
Benzo(ghi)perylene	191-24-2	0.50	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.48	0.20	

LAS LABORATORIES

SPIKED SAMPLE RESULT
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54888LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	28-OCT-97 19:26	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	81%	20-110
2-Fluorobiphenyl	83%	24-110
p-Terphenyl-d14	94%	22-167

CONSTITUENT	CAS NO	RESULT ug/L	PQL ug/L	DATA QUALIFIER(S)
Naphthalene	91-20-3	2.0	1.0	
Acenaphthylene	208-96-8	4.3	2.0	
Acenaphthene	83-32-9	0.41	0.20	
Fluorene	86-73-7	0.39	0.20	
Phenanthrene	85-01-8	0.22	0.10	
Anthracene	120-12-7	0.20	0.10	
Fluoranthene	206-44-0	0.44	0.20	
Pyrene	129-00-0	0.22	0.10	
Benzo(a)anthracene	56-55-3	0.22	0.10	
Chrysene	218-01-9	0.23	0.10	
Benzo(b)fluoranthene	205-99-2	0.46	0.20	
Benzo(k)fluoranthene	207-08-9	0.23	0.10	
Benzo(a)pyrene	50-32-8	0.21	0.10	
Dibenzo(a,h)anthracene	53-70-3	0.47	0.20	
Benzo(ghi)perylene	191-24-2	0.48	0.20	
Indeno(1,2,3-cd)pyrene	193-39-5	0.47	0.20	

LAS LABORATORIES

LCS DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample	LAS Sample ID:	54888LCS
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	28-OCT-97 18:50	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	89%	20-110
2-Fluorobiphenyl	90%	24-110
p-Terphenyl-d14	97%	22-167

Constituent	Spike Added ug/L	LCS Concentration ug/L	LCS % Recovery	QC Limits
Naphthalene	2.50	2.12	85	33-135
Phenanthrene	0.250	0.227	91	42-139
Pyrene	0.250	0.229	92	45-135
Benzo(a)pyrene	0.250	0.215	86	42-135
Benzo(ghi)perylene	0.500	0.497	99	43-135

LAS LABORATORIES

LCS DUPLICATE DATA SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS-HPLC

Client Sample ID:	Lab Ctrl Sample Dup	LAS Sample ID:	54888LCSD
Date Collected:	N/A	Date Received:	N/A
Date Analyzed:	28-OCT-97 19:26	Analytical Batch ID:	101397-8310-HPLCC-7
Date Extracted:	22-OCT-97	Analytical Dilution:	1
		Preparation Dilution:	1.0
		QC Group:	8310 PAH_54888

SURROGATE	RECOVERY	QC Limits
Nitrobenzene-d5	81%	20-110
2-Fluorobiphenyl	83%	24-110
p-Terphenyl-d14	94%	22-167

Constituent	Spike Added ug/L	LCS DUP Concentration ug/L	% Recovery	RPD	QC Limits RPD	QC Limits % Recovery
Naphthalene	2.50	1.98	79	7	50	33-135
Phenanthrene	0.250	0.218	87	4	50	42-139
Pyrene	0.250	0.224	90	2	50	45-135
Benzo(a)pyrene	0.250	0.209	84	3	50	42-135
Benzo(ghi)perylene	0.500	0.479	96	4	50	43-135

RUN LOGS/EXTRACTION SHEETS

HT= 10/25
Due=10/28

LAS LABORATORIES

TRACKING SHEET DATA REPORT (bs16 PAH)

EXTRACTION SHEET FOR: 8310 PAH Extraction

WORKSHEET NUMBER: 8310 PAH_54888

LAL #	QC TYPE	CLIENT ID	DATE COLLECTED	DATE RECEIVED/ CREATED	VOL/WT EXTR SP/pH/Sm 10/22/97	WATER SAMPLE pH	SURR ML	MS ML	BROUGHT TO FINAL VOLUME OF	AMT GIVEN TO ANALYST
L10779-8		ES-3	18-OCT-97	21-OCT-97	1000 ml	7	1.0	N/A	5.0 ml	5.0 ml
L10779-5		BC-3	18-OCT-97	21-OCT-97	1030 ml	↓	↓	↓	5.0 ml	5.0 ml
L10779-6		BC-1	18-OCT-97	21-OCT-97	960 ml	↓	↓	↓	5.0/5.0	5.0/5.0 ml
L10779-7		ES-2	18-OCT-97	21-OCT-97	1030 ml	↓	↓	↓	5.0 ml	5.0 ml
54888MB	MB	Method Blank		21-OCT-97	1000 ml	7	↓	↓	↓	↓
54888LCS	LCS	Lab Ctrl Sample		21-OCT-97	↓	↓	↓	1.0	↓	↓
54888LCSD	LCSD	Lab Ctrl Sample Dup		21-OCT-97	↓	↓	↓	1.0	↓	↓
~~SPIKELOT54888~~	~~SPIKELOT~~	~~Spike Lot Sample~~		~~21-OCT-97~~				SP 10-21-97		

EXTRACTION METHOD: 3520B Continuous

DATE STARTED: 10-22-97   DATE COMPLETED: 10-23-97   SIGNED: Steve Potter

CONTINUOUS DATE & TIME STARTED: 10-22-97 1:20pm   DATE & TIME COMPLETED: 10-23-97 7:20Am SP   SIGNED: [signature]

QC BATCH# : 8310 PAH_54888   LOT #'S   SPIKE WITNESS: [signature]

SURR ID # : 1037-16-1   CONC: 5ug/ml   MECL2: 37233   NA2SO4: 36363728

MS ID # : 1037-32-1   CONC: ~~0.25-5ug/ml~~   ACN : BP721   ACETONE: ~~N/A~~ dkh 10/23/97 37058

REVIEWED BY: [signature] 10-23-97

NARRATIVE   EXTRACT COC: RECIEVED BY: [initials] 2:30 PM   DATE: 10-23-97

L10779-6: when ACN exchange → ACN separated with oil. [initials] 10/23/97
L10779-6 treated as two samples with one layer (oil) brought to F. Vol. in acetone (5.0ml) and the acetonitrile layer brought to F. Vol of 5.0ml in ACN. SP 10/23/97

L10779-10   BC-1 oil sample was added to represent the oil layer from L10779-6

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed	Comments/ ALS No. (VOA Only)
BF	10/13/97 12:14	5R		1	HPLCC\8310\101397\10139701.d01	8310\101397.MET			
	10/13/97 12:50	AUTOCAL1R	0605-67-1	1	HPLCC\8310\101397\10139701.d02	8310\101397.MET			
	10/13/97 13:26	AUTOCAL2R	0605-67-2	1	HPLCC\8310\101397\10139701.d03	8310\101397.MET			
	10/13/97 14:03	AUTOCAL3R	0605-67-3	1	HPLCC\8310\101397\10139701.d04	8310\101397.MET			
	10/13/97 14:39	AUTOCAL4R	0605-67-4	1	HPLCC\8310\101397\10139701.d05	8310\101397.MET			
	10/13/97 15:14	AUTOCAL5R	0605-67-5	1	HPLCC\8310\101397\10139701.d06	8310\101397.MET			
	10/13/97 15:51	IB		1	HPLCC\8310\101397\10139701.d07	8310\101397.MET			
	10/13/97 16:27	54478MB		0.005	HPLCC\8310\101397\10139701.d08	8310\101397.MET	YES		
	10/13/97 17:03	54478LCS		0.005	HPLCC\8310\101397\10139701.d09	8310\101397.MET	YES		
	10/13/97 17:54	54478LCSD		0.005	HPLCC\8310\101397\10139701.d10	8310\101397.MET	NO		
	10/13/97 18:29	54478LCSD		0.005	HPLCC\8310\101397\10139701.d11	8310\101397.MET	NO		
	10/13/97 19:06	L10685-1		0.005	HPLCC\8310\101397\10139701.d12	8310\101397.MET	YES		
	10/13/97 19:42	L10685-4		0.005	HPLCC\8310\101397\10139701.d13	8310\101397.MET	YES		
	10/13/97 20:18	L10687-1		0.005	HPLCC\8310\101397\10139701.d14	8310\101397.MET	YES		
	10/13/97 20:54	L10687-2		0.0056	HPLCC\8310\101397\10139701.d15	8310\101397.MET	YES		
	10/13/97 21:31	L10687-3		0.005	HPLCC\8310\101397\10139701.d16	8310\101397.MET	YES		
	10/13/97 22:07	IB		1	HPLCC\8310\101397\10139701.d17	8310\101397.MET			
	10/13/97 22:43	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d18	8310\101397.MET	YES		
	10/13/97 23:20	IB		1	HPLCC\8310\101397\10139701.d19	8310\101397.MET			
	10/13/97 23:56	54107MB		0 1613	HPLCC\8310\101397\10139701.d20	8310\101397.MET	YES		
	10/14/97 00:32	54107LCS		0.1664	HPLCC\8310\101397\10139701.d21	8310\101397.MET	YES		
	10/14/97 01:08	L10609-4		0.1891	HPLCC\8310\101397\10139701.d22	8310\101397.MET	YES		
	10/14/97 01:45	L10609-2		0.1886	HPLCC\8310\101397\10139701.d23	8310\101397.MET	YES		
	10/14/97 02:21	54107MS		0.1867	HPLCC\8310\101397\10139701.d24	8310\101397.MET	YES		
	10/14/97 02:57	54107MSD		0.1873	HPLCC\8310\101397\10139701.d25	8310\101397.MET	YES		
	10/14/97 03:33	L10609-1 1:3		0.5443	HPLCC\8310\101397\10139701.d26	8310\101397.MET	YES		
	10/14/97 04:10	L10609-3 1:5		0.8955	HPLCC\8310\101397\10139701.d27	8310\101397.MET	YES		
	10/14/97 04:46	IB		1	HPLCC\8310\101397\10139701.d28	8310\101397.MET			
	10/14/97 08:46	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d29	8310\101397.MET	YES		
	10/14/97 10.07	54478LCSD		0.005	HPLCC\8310\101397\10139701.d30	8310\101397 MET	YES		
	10/14/97 10.43	L10685-1 1:10		0.05	HPLCC\8310\101397\10139701.d31	8310\101397.MET	YES		
	10/14/97 11:19	L10685-1 1:30		0.15	HPLCC\8310\101397\10139701.d32	8310\101397.MET	YES		
	10/14/97 11:54	IB		1	HPLCC\8310\101397\10139701.d33	8310\101397.MET			
	10/14/97 12:30	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d34	8310\101397.MET	YES		
	10/14/97 14:31	54498MB		1	HPLCC\8310\101397\10139701.d35	8310\101397.MET	YES		
	10/14/97 15:07	54498LCS		1	HPLCC\8310\101397\10139701.d36	8310\101397.MET	YES		
	10/14/97 15:43	L10679-3		1	HPLCC\8310\101397\10139701.d37	8310\101397.MET	YES		
	10/14/97 16:54	L10670-7		1	HPLCC\8310\101397\10139701.d38	8310\101397.MET	YES		
	10/14/97 17:30	L10701-1		1	HPLCC\8310\101397\10139701.d39	8310\101397.MET	YES		
	10/14/97 18:06	L10701-3		1	HPLCC\8310\101397\10139701.d40	8310\101397.MET	YES		
	10/14/97 18:42	L10701-2		1	HPLCC\8310\101397\10139701.d41	8310\101397.MET	YES		
	10/14/97 19:17	54498MS		1	HPLCC\8310\101397\10139701.d42	8310\101397.MET	YES		
	10/14/97 19:54	54498MSD		1	HPLCC\8310\101397\10139701.d43	8310\101397.MET	YES		
	10/14/97 20:29	IB		1	HPLCC\8310\101397\10139701.d44	8310\101397.MET			
	10/14/97 21:05	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d45	8310\101397.MET	YES		
	10/14/97 21:40	IB		1	HPLCC\8310\101397\10139701.d46	8310\101397.MET			
	10/14/97 22:17	53157MB		1	HPLCC\8310\101397\10139701.d47	8310\101397.MET	YES		
	10/14/97 22:52	53157LCS		1	HPLCC\8310\101397\10139701.d48	8310\101397.MET	YES		
	10/14/97 23:28	L10397-7		1	HPLCC\8310\101397\10139701.d49	8310\101397.MET	YES		
	10/15/97 00:03	L10397-8 1:50		1	HPLCC\8310\101397\10139701.d50	8310\101397 MET	YES		
✓	10/15/97 00:40	L10422-14		1	HPLCC\8310\101397\10139701.d51	8310\101397.MET	YES		

Analyst	Date and Time	Sample Name	Description/ Solution	Matrix/ Dil.	Raw Data File	Method File	Reported	ReAnalyzed	Comments/ ALS No. (VOA Only)
JJ	10/15/97 01:15	53157MS		1	HPLCC\8310\101397\10139701.d52	8310\101397.MET	YES		
	10/15/97 01:51	53157MSD		1	HPLCC\8310\101397\10139701.d53	8310\101397.MET	YES		
	10/15/97 02:27	L10397-8 1:10		1	HPLCC\8310\101397\10139701.d54	8310\101397.MET	YES		
	10/15/97 03:03	L10397-8 1:250		1	HPLCC\8310\101397\10139701.d55	8310\101397.MET	YES		
	10/15/97 03:38	IB		1	HPLCC\8310\101397\10139701.d56	8310\101397.MET			
	10/15/97 04:14	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d57	8310\101397.MET	YES		
	10/15/97 09:28	L10397-8		1	HPLCC\8310\101397\10139701.d58	8310\101397.MET	YES		
	10/15/97 10:04	L10397-8 1:3		1	HPLCC\8310\101397\10139701.d59	8310\101397.MET	YES		
	10/15/97 10:40	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d60	8310\101397.MET	YES		
	10/28/97 11:09	CCV5	0605-67-5	1	HPLCC\8310\101397\10139701.d61	8310\101397.MET	YES		
	10/28/97 13:28	L10779-6 WATER		0.0069	HPLCC\8310\101397\10139701.d62	8310\101397.MET			
	10/28/97 14:04	L10779-6 1:50 WATER		0.345	HPLCC\8310\101397\10139701.d63	8310\101397.MET	YES		
	10/28/97 14:39	L10779-6 1:200 WATER		1.38	HPLCC\8310\101397\10139701.d64	8310\101397.MET	YES		
	10/28/97 15:15	L10779-10 1:100 OIL		2.083	HPLCC\8310\101397\10139701.d65	8310\101397.MET	YES		
	10/28/97 15:51	L10779-7		1	HPLCC\8310\101397\10139701.d66	8310\101397.MET	NO		
	10/28/97 16:27	L10779-7		0.0049	HPLCC\8310\101397\10139701.d67	8310\101397.MET	YES		
	10/28/97 17:02	L10779-5		0.0049	HPLCC\8310\101397\10139701.d68	8310\101397.MET	YES		
	10/28/97 17:38	L10779-8		0.005	HPLCC\8310\101397\10139701.d69	8310\101397.MET	YES		
	10/28/97 18:14	54888MB		0.005	HPLCC\8310\101397\10139701.d70	8310\101397.MET	YES		
	10/28/97 18:50	54888LCS		0.005	HPLCC\8310\101397\10139701.d71	8310\101397.MET	YES		
	10/28/97 19:26	54888LCSD		0.005	HPLCC\8310\101397\10139701.d72	8310\101397.MET	YES		
	10/28/97 20:01	L10779-7 1:10		0.0485	HPLCC\8310\101397\10139701.d73	8310\101397.MET	YES		
	10/28/97 20:37	IB		1	HPLCC\8310\101397\10139701.d74	8310\101397.MET			
	10/28/97 21:13	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d75	8310\101397.MET	YES		
	11/03/97 09:47	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d76	8310\101397.MET	NO		passed but not needed
	11/03/97 10:22	IB		1	HPLCC\8310\101397\10139701.d77	8310\101397.MET	NO		
	11/03/97 11:22	L10609-1 1:6		1.088	HPLCC\8310\101397\10139701.d78	8310\101397.MET	NO		
	11/03/97 11:58	L10609-1 1:10		1.814	HPLCC\8310\101397\10139701.d79	8310\101397.MET	NO		
	11/03/97 12:34	IB		1	HPLCC\8310\101397\10139701.d80	8310\101397.MET			
	11/03/97 13:10	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d81	8310\101397.MET	NO		passed but not needed
	11/03/97 13:45	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d82	8310\101397.MET	YES		
	11/03/97 15:57	L10609-1 1:6		1.088	HPLCC\8310\101397\10139701.d83	8310\101397.MET	NO		
	11/03/97 16:32	L10609-1 1:10		1.814	HPLCC\8310\101397\10139701.d84	8310\101397.MET	YES		
	11/03/97 17:08	L10609-1 1:6		1.088	HPLCC\8310\101397\10139701.d85	8310\101397.MET	NO		
	11/03/97 17:44	L10779-10 1:200 OIL		4.167	HPLCC\8310\101397\10139701.d86	8310\101397.MET	YES		
JJ	11/03/97 18:19	CCV4	0605-67-4	1	HPLCC\8310\101397\10139701.d87	8310\101397.MET	YES		

ATTACHMENT B

PRIOR MONITORING WELL DATA

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
BC-001	7/07/92	19.55	20.66	1.11
BC-001	8/04/92	18.47	20.90	2.43
BC-001	8/31/92	18.68	21.02	2.34
BC-001	10/06/92	18.82	21.14	2.32
BC-001	11/06/92	18.24	20.69	2.45
BC-001	1/07/93	19.60	21.76	2.16
BC-001	4/06/93	18.26	18.26	0.00
BC-001	7/03/93	19.05	19.15	.10
BC-001	8/04/93	19.30	19.40	.10
BC-001	9/01/93	19.23	19.32	.09
BC-001	10/07/93	19.25	19.43	.18
BC-001	11/02/93	19.42	19.61	.19
BC-001	12/06/93	19.31	19.53	.22
BC-001	1/05/94	19.25	19.42	.17
BC-001	2/02/94	19.30	19.50	.20
BC-001	3/02/94	18.40	18.60	.20
BC-001	4/07/94	18.10	18.20	.10
BC-001	5/05/94	18.65	18.84	.19
BC-001	6/07/94	18.25	18.52	.27
BC-001	7/13/94	18.70	18.70	0.00
BC-001	8/03/94	18.40	18.40	0.00
BC-001	9/14/94	18.72	18.73	.01
BC-001	10/06/94	18.58	18.58	0.00
BC-001	11/02/94	18.81	18.82	.01
BC-001	12/07/94	17.93	17.94	.01
BC-001	1/13/95	18.58	18.58	0.00
BC-001	2/14/95	16.76	16.80	.04
BC-001	3/07/95	17.08	17.08	0.00
BC-001	4/11/95	16.55	16.55	0.00
BC-001	5/09/95	16.99	17.00	.01
BC-001	6/09/95	17.38	17.39	.01
BC-001	7/06/95	17.64	17.64	0.00
BC-001	8/10/95	17.89	17.89	0.00
BC-001	9/07/95	17.96	17.96	0.00
BC-001	10/03/95	18.23	18.23	0.00
BC-001	10/05/95	18.23	18.23	0.00
BC-001	11/02/95	18.02	18.02	0.00
BC-001	12/07/95	18.64	18.64	0.00
BC-001	1/03/96	18.36	18.36	0.00
BC-001	2/06/96	17.43	17.43	0.00
BC-001	3/12/96	16.85	16.85	0.00
BC-001	5/07/96	17.45	17.45	0.00
BC-001	6/05/96	17.46	17.46	0.00
BC-001	9/05/96	18.16	18.16	0.00
BC-001	10/08/96	18.40	18.40	0.00
BC-001	11/08/96	18.57	18.57	0.00
BC-001	12/13/96	18.24	18.24	0.00
BC-001	1/16/97	17.19	17.19	0.00
BC-001	2/14/97	16.88	16.88	0.00
BC-001	3/07/97	17.31	17.31	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
BC-001	4/17/97	17.92	17.92	0.00
BC-001	7/15/97	18.61	18.61	0.00
BC-001	10/07/97	18.72	18.72	0.00
BC-002	7/07/92	16.89	16.89	0.00
BC-002	8/04/92	18.46	18.46	0.00
BC-002	8/31/92	18.89	18.89	0.00
BC-002	10/06/92	18.50	18.50	0.00
BC-002	11/06/92	15.98	15.98	0.00
BC-002	1/07/93	13.50	13.50	0.00
BC-002	4/06/93	15.20	15.20	0.00
BC-002	7/03/93	17.75	17.75	0.00
BC-002	8/04/93	18.10	18.10	0.00
BC-002	9/01/93	18.48	18.48	0.00
BC-002	10/07/93	19.02	19.02	0.00
BC-002	11/02/93	18.76	18.76	0.00
BC-002	12/06/93	18.87	18.87	0.00
BC-002	1/05/94	16.76	16.76	0.00
BC-002	2/02/94	16.42	16.42	0.00
BC-002	5/05/94	17.30	17.30	0.00
BC-002	6/07/94	17.70	17.70	0.00
BC-002	7/13/94	17.10	17.10	0.00
BC-002	8/03/94	18.36	18.36	0.00
BC-002	9/14/94	17.04	17.04	0.00
BC-002	1/13/95	12.80	12.80	0.00
BC-002	2/14/95	15.11	15.11	0.00
BC-002	3/07/95	16.21	16.21	0.00
BC-002	4/11/95	15.56	15.56	0.00
BC-002	5/09/95	15.81	15.81	0.00
BC-002	6/09/95	16.88	16.88	0.00
BC-002	7/06/95	16.88	16.88	0.00
BC-002	8/10/95	17.55	17.55	0.00
BC-002	9/07/95	18.03	18.03	0.00
BC-002	10/03/95	18.24	18.24	0.00
BC-002	10/05/95	18.24	18.24	0.00
BC-002	11/02/95	18.36	18.36	0.00
BC-002	1/03/96	17.86	17.86	0.00
BC-002	2/06/96	16.31	16.31	0.00
BC-002	3/12/96	16.50	16.50	0.00
BC-002	4/09/96	16.90	16.90	0.00
BC-002	5/07/96	17.20	17.20	0.00
BC-002	6/05/96	17.10	17.10	0.00
BC-002	7/09/96	17.70	17.70	0.00
BC-002	10/08/96	18.40	18.40	0.00
BC-002	11/08/96	18.30	18.30	0.00
BC-002	12/13/96	16.80	16.80	0.00
BC-002	1/16/97	16.40	16.40	0.00
BC-002	2/14/97	16.30	16.30	0.00
BC-002	3/07/97	17.00	17.00	0.00
BC-002	4/17/97	17.70	17.70	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
BC-002	7/15/97	18.50	18.50	0.00
BC-002	10/07/97	18.69	18.69	0.00
BC-003	7/07/92	16.68	16.68	0.00
BC-003	8/04/92	19.24	19.24	0.00
BC-003	8/31/92	19.10	19.10	0.00
BC-003	10/06/92	18.93	18.93	0.00
BC-003	11/06/92	16.81	16.81	0.00
BC-003	1/07/93	16.55	16.55	0.00
BC-003	4/06/93	15.44	15.44	0.00
BC-003	7/03/93	16.81	16.81	0.00
BC-003	8/04/93	18.82	18.82	0.00
BC-003	9/01/93	18.40	18.40	0.00
BC-003	10/07/93	18.58	18.58	0.00
BC-003	11/02/93	18.53	18.53	0.00
BC-003	12/06/93	18.67	18.67	0.00
BC-003	1/05/94	17.51	17.51	0.00
BC-003	2/02/94	16.40	16.40	0.00
BC-003	3/02/94	15.00	15.00	0.00
BC-003	4/07/94	17.70	17.70	0.00
BC-003	5/05/94	17.90	17.90	0.00
BC-003	6/07/94	17.34	17.34	0.00
BC-003	7/13/94	18.10	18.10	0.00
BC-003	8/03/94	18.36	18.36	0.00
BC-003	9/14/94	18.31	18.31	0.00
BC-003	10/06/94	18.58	18.58	0.00
BC-003	11/02/94	18.61	18.61	0.00
BC-003	12/07/94	16.29	16.29	0.00
BC-003	1/13/95	15.40	15.40	0.00
BC-003	2/14/95	15.86	15.86	0.00
BC-003	3/07/95	16.21	16.21	0.00
BC-003	4/11/95	15.08	15.08	0.00
BC-003	5/09/95	16.92	16.92	0.00
BC-003	6/09/95	16.90	16.90	0.00
BC-003	7/06/95	16.87	16.87	0.00
BC-003	8/10/95	17.54	17.54	0.00
BC-003	9/07/95	17.80	17.80	0.00
BC-003	10/03/95	17.95	17.95	0.00
BC-003	10/05/95	17.95	17.95	0.00
BC-003	11/02/95	18.33	18.33	0.00
BC-003	1/03/96	17.55	17.55	0.00
BC-003	2/06/96	17.15	17.15	0.00
BC-003	3/12/96	16.50	16.50	0.00
BC-003	4/09/96	16.60	16.60	0.00
BC-003	5/07/96	16.90	16.90	0.00
BC-003	6/05/96	17.00	17.00	0.00
BC-003	7/09/96	17.40	17.40	0.00
BC-003	10/08/96	18.10	18.10	0.00
BC-003	11/08/96	18.20	18.20	0.00
BC-003	12/13/96	17.60	17.60	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
BC-003	1/16/97	16.40	16.40	0.00
BC-003	2/14/97	16.20	16.20	0.00
BC-003	3/07/97	16.80	16.80	0.00
BC-003	4/17/97	17.50	17.50	0.00
BC-003	7/15/97	18.20	18.20	0.00
BC-003	10/07/97	18.40	18.40	0.00
ES-001	6/16/92	20.18	23.78	3.60
ES-001	7/07/92	18.60	18.60	0.00
ES-001	8/04/92	18.80	18.81	.01
ES-001	8/31/92	18.96	18.97	.01
ES-001	10/06/92	19.08	19.10	.02
ES-001	11/06/92	18.52	18.53	.01
ES-001	1/07/93	20.25	20.26	.01
ES-001	4/06/93	17.08	17.88	.80
ES-001	7/03/93	18.68	18.68	0.00
ES-001	8/04/93	18.85	18.85	0.00
ES-001	9/01/93	18.90	18.90	0.00
ES-001	10/07/93	19.02	19.03	.01
ES-001	11/02/93	19.20	19.20	0.00
ES-001	12/06/93	19.15	19.15	0.00
ES-001	1/05/94	18.96	18.96	0.00
ES-001	2/02/94	18.92	18.92	0.00
ES-001	3/02/94	17.91	18.08	.17
ES-001	4/07/94	18.50	18.68	.18
ES-001	5/05/94	17.88	18.02	.14
ES-001	6/07/94	18.04	18.21	.17
ES-001	7/13/94	18.08	18.08	0.00
ES-001	8/03/94	18.48	18.48	0.00
ES-001	9/14/94	18.62	18.64	.02
ES-001	10/06/94	18.39	18.43	.04
ES-001	11/02/94	18.39	18.39	0.00
ES-001	12/07/94	17.70	17.70	0.00
ES-001	1/13/95	18.39	18.43	.04
ES-001	2/14/95	16.44	16.45	.01
ES-001	3/07/95	16.74	16.74	0.00
ES-001	4/11/95	16.25	16.25	0.00
ES-001	5/09/95	16.66	16.66	0.00
ES-001	6/09/95	17.15	17.16	.01
ES-001	7/06/95	17.28	17.28	0.00
ES-001	8/10/95	17.60	17.61	.01
ES-001	9/07/95	17.79	17.79	0.00
ES-001	10/03/95	18.01	18.01	0.00
ES-001	10/05/95	18.01	18.01	0.00
ES-001	11/02/95	18.00	18.00	0.00
ES-001	12/07/95	18.39	18.40	.01
ES-001	1/03/96	18.04	18.04	0.00
ES-001	2/06/96	17.00	17.00	0.00
ES-001	3/12/96	16.51	16.51	0.00
ES-001	4/09/96	17.40	17.40	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-001	1/16/97	16.79	16.79	0.00
ES-001	2/14/97	16.53	16.53	0.00
ES-001	3/07/97	17.01	17.01	0.00
ES-001	4/17/97	18.13	18.13	0.00
ES-001	7/15/97	18.44	18.44	0.00
ES-001	10/07/97	18.36	18.37	.01
ES-002	6/16/92	18.63	18.64	.01
ES-002	7/07/92	19.62	19.62	0.00
ES-002	8/04/92	19.17	19.76	.59
ES-002	8/31/92	19.29	19.90	.61
ES-002	10/06/92	19.41	20.00	.59
ES-002	11/06/92	18.84	19.44	.60
ES-002	1/07/93	20.05	20.40	.35
ES-002	4/06/93	18.20	18.31	.11
ES-002	7/03/93	19.31	19.32	.01
ES-002	8/04/93	19.15	19.18	.03
ES-002	9/01/93	19.50	19.59	.09
ES-002	10/07/93	19.57	19.60	.03
ES-002	11/02/93	19.60	19.61	.01
ES-002	12/06/93	19.71	19.74	.03
ES-002	1/05/94	19.57	19.61	.04
ES-002	2/02/94	19.20	19.25	.05
ES-002	3/02/94	19.00	19.50	.50
ES-002	4/07/94	19.10	19.19	.09
ES-002	5/05/94	18.77	18.79	.02
ES-002	6/07/94	18.61	18.61	0.00
ES-002	7/13/94	18.78	18.78	0.00
ES-002	8/03/94	18.72	18.72	0.00
ES-002	9/14/94	19.10	19.14	.04
ES-002	10/06/94	18.86	18.86	0.00
ES-002	11/02/94	18.97	19.91	.94
ES-002	12/07/94	18.14	18.14	0.00
ES-002	1/13/95	18.86	18.86	0.00
ES-002	2/14/95	16.92	16.92	0.00
ES-002	3/07/95	17.25	17.25	0.00
ES-002	4/11/95	16.71	16.71	0.00
ES-002	5/09/95	17.15	17.15	0.00
ES-002	6/09/95	17.60	17.61	.01
ES-002	7/06/95	17.78	17.79	.01
ES-002	8/10/95	18.09	18.10	.01
ES-002	9/07/95	18.29	18.29	0.00
ES-002	10/03/95	18.48	18.45	-.03
ES-002	10/05/95	18.45	18.48	.03
ES-002	11/02/95	18.62	18.65	.03
ES-002	12/07/95	18.85	18.90	.05
ES-002	1/03/96	18.55	18.54	-.01
ES-002	2/06/96	17.60	17.60	0.00
ES-002	3/12/96	17.08	17.08	0.00
ES-002	4/09/96	17.18	17.18	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-002	5/07/96	17.66	17.66	0.00
ES-002	6/05/96	17.66	17.66	0.00
ES-002	7/09/96	18.02	18.02	0.00
ES-002	9/05/96	18.39	18.39	0.00
ES-002	10/08/96	18.61	18.61	0.00
ES-002	11/08/96	18.78	18.78	0.00
ES-002	12/13/96	18.43	18.43	0.00
ES-002	1/16/97	17.57	17.57	0.00
ES-002	2/14/97	17.08	17.08	0.00
ES-002	3/07/97	17.56	17.56	0.00
ES-002	4/17/97	18.11	18.11	0.00
ES-002	7/15/97	18.97	18.97	0.00
ES-002	10/07/97	18.87	18.87	0.00
ES-003	6/16/92	19.41	19.41	0.00
ES-003	7/07/92	19.52	19.52	0.00
ES-003	8/04/92	19.68	19.68	0.00
ES-003	8/31/92	19.80	19.80	0.00
ES-003	10/06/92	19.96	19.96	0.00
ES-003	11/06/92	18.84	19.84	1.00
ES-003	1/07/93	19.20	19.20	0.00
ES-003	4/06/93	15.92	15.92	0.00
ES-003	7/03/93	18.12	18.12	0.00
ES-003	8/04/93	19.18	19.18	0.00
ES-003	9/01/93	19.36	19.36	0.00
ES-003	10/07/93	19.62	19.62	0.00
ES-003	11/02/93	19.70	19.70	0.00
ES-003	12/06/93	19.68	19.68	0.00
ES-003	1/05/94	19.52	19.52	0.00
ES-003	2/02/94	19.30	19.30	0.00
ES-003	3/02/94	18.68	18.68	0.00
ES-003	4/07/94	19.00	19.00	0.00
ES-003	5/05/94	18.78	18.78	0.00
ES-003	6/07/94	18.90	18.90	0.00
ES-003	7/13/94	18.71	18.71	0.00
ES-003	8/03/94	19.03	19.03	0.00
ES-003	9/14/94	19.84	19.84	0.00
ES-003	10/06/94	19.24	19.24	0.00
ES-003	11/02/94	19.37	19.37	0.00
ES-003	12/07/94	18.44	18.44	0.00
ES-003	1/13/95	17.35	17.35	0.00
ES-003	2/14/95	17.22	17.22	0.00
ES-003	3/07/95	17.52	17.52	0.00
ES-003	4/11/95	16.95	16.95	0.00
ES-003	5/09/95	17.34	17.39	.05
ES-003	6/09/95	17.87	17.87	0.00
ES-003	7/06/95	18.07	18.07	0.00
ES-003	8/10/95	18.40	18.40	0.00
ES-003	9/07/95	18.59	18.59	0.00
ES-003	10/03/95	18.76	18.76	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-003	10/05/95	18.76	18.76	0.00
ES-003	11/02/95	18.96	18.96	0.00
ES-003	12/07/95	19.19	19.19	0.00
ES-003	1/03/96	17.55	17.55	0.00
ES-003	2/06/96	17.86	17.86	0.00
ES-003	3/12/96	17.35	17.35	0.00
ES-003	4/09/96	17.65	17.65	0.00
ES-003	5/07/96	17.94	17.94	0.00
ES-003	6/05/96	17.94	17.94	0.00
ES-003	7/09/96	18.33	18.33	0.00
ES-003	9/05/96	18.63	18.63	0.00
ES-003	10/08/96	18.98	18.98	0.00
ES-003	11/08/96	19.16	19.16	0.00
ES-003	12/13/96	18.81	18.81	0.00
ES-003	1/16/97	17.72	17.72	0.00
ES-003	2/14/97	17.47	17.47	0.00
ES-003	3/07/97	17.90	17.90	0.00
ES-003	4/17/97	18.42	18.42	0.00
ES-003	7/15/97	19.01	19.01	0.00
ES-003	10/07/97	19.18	19.18	0.00
ES-004	6/16/92	18.63	18.98	.35
ES-004	7/07/92	18.51	18.51	0.00
ES-004	8/04/92	18.66	18.66	0.00
ES-004	8/31/92	18.79	18.79	0.00
ES-004	10/06/92	18.92	18.92	0.00
ES-004	11/06/92	18.94	18.94	0.00
ES-004	1/07/93	18.76	18.76	0.00
ES-004	4/06/93	17.26	17.26	0.00
ES-004	7/03/93	18.08	18.08	0.00
ES-004	8/04/93	18.16	18.16	0.00
ES-004	9/01/93	18.46	18.46	0.00
ES-004	10/07/93	18.62	18.62	0.00
ES-004	11/02/93	18.74	18.74	0.00
ES-004	12/06/93	18.72	18.72	0.00
ES-004	1/05/94	18.55	18.55	0.00
ES-004	2/02/94	18.42	18.42	0.00
ES-004	3/02/94	17.86	17.86	0.00
ES-004	4/07/94	18.80	18.80	0.00
ES-004	5/05/94	17.86	17.86	0.00
ES-004	6/07/94	17.94	17.94	0.00
ES-004	7/13/94	18.13	18.13	0.00
ES-004	8/03/94	17.94	17.94	0.00
ES-004	9/14/94	18.18	18.18	0.00
ES-004	10/06/94	18.25	18.25	0.00
ES-004	11/02/94	18.35	18.35	0.00
ES-004	12/07/94	17.56	17.56	0.00
ES-004	1/13/95	16.77	16.77	0.00
ES-004	2/14/95	16.37	16.37	0.00
ES-004	3/07/95	16.66	16.66	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-004	4/11/95	16.14	16.14	0.00
ES-004	5/09/95	16.57	16.57	0.00
ES-004	6/09/95	17.02	17.02	0.00
ES-004	7/06/95	17.19	17.19	0.00
ES-004	8/10/95	17.84	17.84	0.00
ES-004	9/07/95	17.68	17.68	0.00
ES-004	10/03/95	17.84	17.84	0.00
ES-004	10/05/95	17.84	17.84	0.00
ES-004	11/02/95	18.02	18.02	0.00
ES-004	12/07/95	18.23	18.23	0.00
ES-004	1/03/96	17.87	17.87	0.00
ES-004	2/06/96	17.02	17.02	0.00
ES-004	3/12/96	16.54	16.54	0.00
ES-004	4/09/96	16.76	16.76	0.00
ES-004	5/07/96	16.17	16.17	0.00
ES-004	6/05/96	17.05	17.05	0.00
ES-004	7/09/96	17.37	17.37	0.00
ES-004	9/05/96	17.74	17.74	0.00
ES-004	10/08/96	17.97	17.97	0.00
ES-004	11/08/96	18.13	18.13	0.00
ES-004	12/13/96	17.83	17.83	0.00
ES-004	1/16/97	16.92	16.92	0.00
ES-004	2/14/97	16.56	16.56	0.00
ES-004	3/07/97	16.95	16.95	0.00
ES-004	4/17/97	17.45	17.45	0.00
ES-004	7/15/97	18.05	18.05	0.00
ES-004	10/07/97	18.23	18.23	0.00
ES-005	6/16/92	18.40	20.40	2.00
ES-005	7/07/92	20.23	20.23	0.00
ES-005	8/04/92	18.16	20.43	2.27
ES-005	8/31/92	18.24	20.80	2.56
ES-005	10/06/92	18.24	21.37	3.13
ES-005	11/06/92	17.60	20.92	3.32
ES-005	1/05/93	18.42	19.75	1.33
ES-005	1/07/93	19.35	22.00	2.65
ES-005	4/06/93	17.28	17.28	0.00
ES-005	7/03/93	19.50	19.50	0.00
ES-005	8/04/93	18.61	18.61	0.00
ES-005	9/01/93	18.79	18.80	.01
ES-005	10/07/93	18.65	19.33	.68
ES-005	11/02/93	18.91	19.45	.54
ES-005	12/06/93	18.78	19.25	.47
ES-005	2/02/94	18.18	19.98	1.80
ES-005	3/02/94	18.07	18.30	.23
ES-005	4/07/94	18.37	18.38	.01
ES-005	5/05/94	18.24	18.26	.02
ES-005	6/07/94	18.26	18.27	.01
ES-005	7/13/94	18.30	18.30	0.00
ES-005	8/03/94	17.90	17.90	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-005	9/14/94	18.41	18.42	.01
ES-005	10/06/94	18.23	18.23	0.00
ES-005	11/02/94	18.47	18.47	0.00
ES-005	12/07/94	17.45	17.45	0.00
ES-005	1/13/95	18.23	18.23	0.00
ES-005	2/14/95	16.45	16.45	0.00
ES-005	3/07/95	16.53	16.53	0.00
ES-005	4/11/95	16.00	16.00	0.00
ES-005	5/09/95	16.45	16.45	0.00
ES-005	6/09/95	16.90	16.90	0.00
ES-005	7/06/95	17.09	17.09	0.00
ES-005	8/10/95	17.44	17.44	0.00
ES-005	9/07/95	17.61	17.61	0.00
ES-005	10/03/95	18.74	18.74	0.00
ES-005	10/05/95	18.74	18.74	0.00
ES-005	11/02/95	17.98	17.98	0.00
ES-005	12/07/95	18.21	18.22	.01
ES-005	1/03/96	17.89	17.89	0.00
ES-005	2/06/96	16.76	16.76	0.00
ES-005	3/12/96	16.36	16.36	0.00
ES-005	4/09/96	16.70	16.70	0.00
ES-005	5/07/96	16.95	16.95	0.00
ES-005	6/05/96	16.95	16.95	0.00
ES-005	7/09/96	17.34	17.34	0.00
ES-005	1/16/97	16.68	16.68	0.00
ES-005	2/14/97	16.43	16.43	0.00
ES-005	3/07/97	16.90	16.90	0.00
ES-005	4/17/97	17.41	17.41	0.00
ES-005	7/15/97	18.29	18.29	0.00
ES-005	10/07/97	18.48	18.48	0.00
ES-006	1/05/93	21.76	21.76	0.00
ES-006	9/01/93	21.94	21.94	0.00
ES-006	10/07/93	21.81	21.81	0.00
ES-006	11/02/93	21.91	21.91	0.00
ES-006	12/06/93	21.90	21.90	0.00
ES-006	2/02/94	21.74	21.74	0.00
ES-006	3/02/94	21.10	21.10	0.00
ES-006	4/07/94	21.30	21.30	0.00
ES-006	5/05/94	21.16	21.16	0.00
ES-006	6/07/94	21.02	21.02	0.00
ES-006	7/13/94	21.40	21.40	0.00
ES-006	8/03/94	21.58	21.58	0.00
ES-006	9/14/94	21.52	21.52	0.00
ES-006	10/06/94	21.58	21.58	0.00
ES-006	11/02/94	21.64	21.64	0.00
ES-006	12/07/94	20.94	20.94	0.00
ES-006	1/13/95	20.25	20.25	0.00
ES-006	2/14/95	19.82	19.82	0.00
ES-006	3/07/95	20.06	20.06	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-006	4/11/95	19.56	19.56	0.00
ES-006	5/09/95	97.84	97.84	0.00
ES-006	6/09/95	20.37	20.37	0.00
ES-006	7/06/95	20.55	20.55	0.00
ES-006	8/10/95	20.81	20.81	0.00
ES-006	9/07/95	20.94	20.94	0.00
ES-006	10/03/95	21.14	21.14	0.00
ES-006	10/05/95	21.14	21.14	0.00
ES-006	11/02/95	21.31	21.31	0.00
ES-006	12/07/95	21.48	21.48	0.00
ES-006	1/03/96	21.24	21.24	0.00
ES-006	2/06/96	20.52	20.52	0.00
ES-006	3/12/96	19.85	19.85	0.00
ES-006	4/09/96	20.14	20.14	0.00
ES-006	5/07/96	20.42	20.42	0.00
ES-006	6/05/96	20.41	20.41	0.00
ES-006	7/09/96	20.74	20.74	0.00
ES-006	10/08/96	21.23	21.23	0.00
ES-006	11/08/96	21.44	21.44	0.00
ES-006	12/13/96	21.19	21.19	0.00
ES-006	1/16/97	20.15	20.15	0.00
ES-006	2/14/97	19.92	19.92	0.00
ES-006	3/07/97	20.31	20.31	0.00
ES-006	4/17/97	20.78	20.78	0.00
ES-006	7/15/97	21.32	21.32	0.00
ES-006	10/07/97	21.48	21.48	0.00
ES-007	1/05/93	19.90	19.90	0.00
ES-007	9/01/93	19.71	19.71	0.00
ES-007	10/07/93	19.99	19.99	0.00
ES-007	11/02/93	20.12	20.12	0.00
ES-007	12/06/93	20.15	20.15	0.00
ES-007	2/02/94	19.79	19.79	0.00
ES-007	3/02/94	19.14	19.14	0.00
ES-007	4/07/94	19.44	19.44	0.00
ES-007	5/05/94	19.30	19.30	0.00
ES-007	6/07/94	19.33	19.33	0.00
ES-007	7/13/94	19.11	19.11	0.00
ES-007	8/03/94	19.40	19.40	0.00
ES-007	9/14/94	19.64	19.64	0.00
ES-007	10/06/94	19.73	19.73	0.00
ES-007	11/02/94	19.79	19.79	0.00
ES-007	12/07/94	19.89	19.89	0.00
ES-007	1/13/95	18.11	18.11	0.00
ES-007	2/14/95	17.63	17.63	0.00
ES-007	3/07/95	17.92	17.92	0.00
ES-007	4/11/95	17.35	17.35	0.00
ES-007	5/09/95	17.79	17.79	0.00
ES-007	6/09/95	18.29	18.29	0.00
ES-007	7/06/95	18.46	18.46	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-007	8/10/95	18.77	18.77	0.00
ES-007	9/07/95	18.98	18.98	0.00
ES-007	10/03/95	19.15	19.15	0.00
ES-007	10/05/95	19.15	19.15	0.00
ES-007	11/02/95	19.36	19.36	0.00
ES-007	12/07/95	19.57	19.57	0.00
ES-007	1/03/96	19.29	19.29	0.00
ES-007	2/06/96	18.41	18.41	0.00
ES-007	3/12/96	17.76	17.76	0.00
ES-007	4/09/96	18.05	18.05	0.00
ES-007	5/07/96	18.36	18.36	0.00
ES-007	6/05/96	18.36	18.36	0.00
ES-007	7/09/96	18.72	18.72	0.00
ES-007	9/05/96	19.12	19.12	0.00
ES-007	10/08/96	19.37	19.37	0.00
ES-007	11/08/96	19.56	19.56	0.00
ES-007	12/13/96	19.28	19.28	0.00
ES-007	1/16/97	18.19	18.19	0.00
ES-007	2/14/97	17.88	17.88	0.00
ES-007	3/07/97	18.30	18.30	0.00
ES-007	4/17/97	18.81	18.81	0.00
ES-008	9/01/93	18.88	18.88	0.00
ES-008	10/07/93	19.13	19.13	0.00
ES-008	11/02/93	19.26	19.26	0.00
ES-008	12/06/93	19.24	19.24	0.00
ES-008	1/05/94	19.10	19.10	0.00
ES-008	2/02/94	19.08	19.08	0.00
ES-008	3/02/94	18.28	18.28	0.00
ES-008	4/07/94	18.44	18.44	0.00
ES-008	5/05/94	18.26	18.26	0.00
ES-008	6/07/94	18.32	18.32	0.00
ES-008	7/13/94	18.50	18.50	0.00
ES-008	8/03/94	18.42	18.42	0.00
ES-008	9/14/94	18.50	18.50	0.00
ES-008	10/06/94	18.76	18.76	0.00
ES-008	11/02/94	18.76	18.76	0.00
ES-008	12/07/94	18.00	18.00	0.00
ES-008	1/13/95	16.83	16.83	0.00
ES-008	2/14/95	16.67	16.67	0.00
ES-008	3/07/95	16.99	16.99	0.00
ES-008	4/11/95	16.41	16.41	0.00
ES-008	5/09/95	16.92	16.92	0.00
ES-008	6/09/95	17.35	17.35	0.00
ES-008	7/06/95	17.56	17.56	0.00
ES-008	8/10/95	17.89	17.89	0.00
ES-008	9/07/95	18.09	18.09	0.00
ES-008	10/03/95	18.27	18.27	0.00
ES-008	10/05/95	18.27	18.27	0.00
ES-008	11/02/95	18.51	18.51	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-008	12/07/95	18.72	18.72	0.00
ES-008	1/03/96	18.36	18.36	0.00
ES-008	2/06/96	17.07	17.07	0.00
ES-008	3/12/96	16.79	16.79	0.00
ES-008	4/09/96	17.10	17.10	0.00
ES-008	5/07/96	17.34	17.34	0.00
ES-008	6/05/96	17.36	17.36	0.00
ES-008	7/09/96	17.71	17.71	0.00
ES-008	9/05/96	18.13	18.13	0.00
ES-008	10/08/96	18.44	18.44	0.00
ES-008	11/08/96	18.61	18.61	0.00
ES-008	12/13/96	18.32	18.32	0.00
ES-008	1/16/97	17.22	17.22	0.00
ES-008	2/14/97	16.94	16.94	0.00
ES-008	3/07/97	17.36	17.36	0.00
ES-008	4/17/97	17.90	17.90	0.00
ES-009	9/01/93	19.74	19.74	0.00
ES-009	10/07/93	17.90	17.90	0.00
ES-009	12/06/93	18.00	18.00	0.00
ES-009	1/05/94	17.80	17.80	0.00
ES-009	2/02/94	17.02	17.02	0.00
ES-009	3/02/94	17.12	17.12	0.00
ES-009	4/07/94	17.24	17.24	0.00
ES-009	5/05/94	17.04	17.04	0.00
ES-009	6/07/94	17.06	17.06	0.00
ES-009	7/13/94	17.40	17.40	0.00
ES-009	8/03/94	17.10	17.10	0.00
ES-009	9/14/94	17.09	17.09	0.00
ES-009	10/06/94	17.46	17.46	0.00
ES-009	11/02/94	17.55	17.55	0.00
ES-009	12/07/94	16.79	16.79	0.00
ES-009	1/13/95	15.80	15.80	0.00
ES-009	2/14/95	15.49	15.49	0.00
ES-009	3/07/95	15.79	15.79	0.00
ES-009	4/11/95	15.23	15.23	0.00
ES-009	5/09/95	15.72	15.72	0.00
ES-009	6/09/95	16.13	16.13	0.00
ES-009	7/06/95	16.34	16.34	0.00
ES-009	8/10/95	16.67	16.67	0.00
ES-009	9/07/95	16.87	16.87	0.00
ES-009	10/03/95	17.09	17.09	0.00
ES-009	10/05/95	17.09	17.09	0.00
ES-009	11/02/95	17.30	17.30	0.00
ES-009	12/07/95	17.48	17.48	0.00
ES-009	1/03/96	17.12	17.12	0.00
ES-009	2/06/96	16.00	16.00	0.00
ES-009	3/12/96	15.63	15.63	0.00
ES-009	4/09/96	15.92	15.92	0.00
ES-009	5/07/96	16.17	16.17	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-009	6/05/96	16.19	16.19	0.00
ES-009	7/09/96	16.52	16.52	0.00
ES-009	9/05/96	16.92	16.92	0.00
ES-009	10/08/96	17.19	17.19	0.00
ES-009	11/08/96	17.37	17.37	0.00
ES-009	12/13/96	17.09	17.09	0.00
ES-009	1/16/97	15.99	15.99	0.00
ES-009	2/14/97	15.71	15.71	0.00
ES-009	3/07/97	16.12	16.12	0.00
ES-009	4/17/97	16.66	16.66	0.00
ES-010	9/01/93	18.04	18.04	0.00
ES-010	10/07/93	17.40	17.40	0.00
ES-010	11/02/93	17.46	17.46	0.00
ES-010	12/06/93	17.44	17.44	0.00
ES-010	1/05/94	17.27	17.27	0.00
ES-010	2/02/94	17.25	17.25	0.00
ES-010	3/02/94	16.61	16.61	0.00
ES-010	4/07/94	16.74	16.74	0.00
ES-010	5/05/94	16.55	16.55	0.00
ES-010	6/07/94	17.50	17.50	0.00
ES-010	7/13/94	16.10	16.10	0.00
ES-010	8/03/94	16.20	16.20	0.00
ES-010	9/14/94	16.48	16.48	0.00
ES-010	10/06/94	16.96	16.96	0.00
ES-010	11/02/94	17.05	17.05	0.00
ES-010	12/07/94	16.29	16.29	0.00
ES-010	1/13/95	15.42	15.42	0.00
ES-010	2/14/95	15.05	15.05	0.00
ES-010	3/07/95	15.34	15.34	0.00
ES-010	4/11/95	14.82	14.82	0.00
ES-010	5/09/95	15.26	15.26	0.00
ES-010	6/09/95	15.70	15.70	0.00
ES-010	7/06/95	15.89	15.89	0.00
ES-010	8/10/95	16.21	16.21	0.00
ES-010	9/07/95	16.42	16.42	0.00
ES-010	10/03/95	16.59	16.59	0.00
ES-010	10/05/95	16.59	16.59	0.00
ES-010	11/02/95	16.77	16.77	0.00
ES-010	12/07/95	16.97	16.97	0.00
ES-010	1/03/96	16.61	16.61	0.00
ES-010	2/06/96	15.71	15.71	0.00
ES-010	3/12/96	17.35	17.35	0.00
ES-010	4/09/96	15.44	15.44	0.00
ES-010	5/07/96	15.75	15.75	0.00
ES-010	6/05/96	17.75	17.75	0.00
ES-010	7/09/96	18.04	18.04	0.00
ES-010	9/05/96	16.45	16.45	0.00
ES-010	10/08/96	16.70	16.70	0.00
ES-010	11/08/96	16.87	16.87	0.00

FACILITY NO.: 8934
FACILITY NAME:
STATE: CA
FACILITY TYPE:

Well ID	Date	DEPTH TO LIQUID (ft)	DEPTH TO WATER (ft)	PRODUCT THICKNESS (ft)
ES-010	12/13/96	16.55	16.55	0.00
ES-010	1/16/97	15.49	15.49	0.00
ES-010	2/14/97	15.23	15.23	0.00
ES-010	3/07/97	15.67	15.67	0.00
ES-010	4/17/97	16.18	16.18	0.00
ES-011	9/01/93	18.74	18.74	0.00
ES-011	10/07/93	18.90	18.90	0.00
ES-011	11/02/93	19.00	19.00	0.00
ES-011	12/06/93	19.02	19.02	0.00
ES-011	1/05/94	18.86	18.86	0.00
ES-011	2/02/94	18.74	18.74	0.00
ES-011	3/02/94	18.14	18.14	0.00
ES-011	4/07/94	18.38	18.38	0.00
ES-011	5/05/94	18.15	18.15	0.00
ES-011	6/07/94	18.28	18.28	0.00
ES-011	7/13/94	18.60	18.60	0.00
ES-011	8/03/94	18.18	18.18	0.00
ES-011	9/14/94	18.47	18.47	0.00
ES-011	10/06/94	18.55	18.55	0.00
ES-011	11/02/94	18.64	18.64	0.00
ES-011	12/07/94	17.49	17.49	0.00
ES-011	1/13/95	17.16	17.16	0.00
ES-011	2/14/95	16.76	16.76	0.00
ES-011	3/07/95	17.04	17.04	0.00
ES-011	4/11/95	16.54	16.54	0.00
ES-011	5/09/95	16.95	16.95	0.00
ES-011	6/09/95	17.34	17.34	0.00
ES-011	7/06/95	17.54	17.54	0.00
ES-011	8/10/95	17.85	17.85	0.00
ES-011	9/07/95	18.03	18.03	0.00
ES-011	10/03/95	18.20	18.20	0.00
ES-011	10/05/95	18.20	18.20	0.00
ES-011	11/02/95	18.38	18.38	0.00
ES-011	12/07/95	18.59	18.59	0.00
ES-011	1/03/96	18.21	18.21	0.00
ES-011	2/06/96	17.45	17.45	0.00
ES-011	3/12/96	16.83	16.83	0.00
ES-011	4/09/96	17.13	17.13	0.00
ES-011	5/07/96	17.42	17.42	0.00
ES-011	6/05/96	17.42	17.42	0.00
ES-011	7/09/96	17.71	17.71	0.00
ES-011	9/05/96	18.07	18.07	0.00
ES-011	10/08/96	18.29	18.29	0.00
ES-011	11/08/96	18.45	18.45	0.00
ES-011	12/13/96	18.09	18.09	0.00
ES-011	1/16/97	17.10	17.10	0.00
ES-011	2/14/97	16.90	16.90	0.00
ES-011	3/07/97	17.30	17.30	0.00
ES-011	4/17/97	17.80	17.80	0.00

ATTACHMENT C

PREVIOUS ANALYTICAL DATA SUMMARY

8934
OAKLAND CA
TERMINAL

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/08/92	BC-02	WATER	NA	ND	ND	ND	8.4	8.4	2.1	NA	NA
7/08/92	BC-03	WATER	NA	ND	2.5	ND	6.1	8.6	3.9	NA	NA
7/08/92	ES-03	WATER	NA	54	21	48	34	157	1.3	NA	NA
7/08/92	ES-04	WATER	NA	31	5.6	ND	2.8	39.4	ND	NA	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/06/92	BC-02	WATER	NA	ND	1.1	0.9	7.2	9.2	ND	NA	NA
10/06/92	BC-03	WATER	NA	ND	1.9	0.5	1.8	4.2	0.8	NA	NA
10/06/92	ES-03	WATER	NA	93	18	ND	11	122	ND	NA	NA
10/06/92	ES-04	WATER	NA	100	8.2	ND	7.6	115.8	ND	NA	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
1/07/93	BC-02	WATER	NA	ND	1.1	1.5	9.5	12.1	ND	NA	NA
1/07/93	BC-03	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA
1/07/93	ES-03	WATER	NA	52	49	100	250	451	ND	NA	NA
1/07/93	ES-04	WATER	NA	30	6.7	7.7	16	60.4	ND	NA	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
4/06/93	BC-02	WATER	NA	ND	ND	ND	ND	ND	0.13	ND	NA
4/06/93	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.12	ND	NA
4/06/93	ES-03	WATER	NA	53	ND	67	78	198	0.51	4.5	NA
4/06/93	ES-04	WATER	NA	33	2.3	1.9	4.7	41.9	ND	0.36	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/23/93	ES-03	WATER	NA	28	5.9	4.6	4.6	43.1	0.06	1500	NA
7/23/93	ES-04	WATER	NA	24	1.1	0.07	8.3	33.47	ND	ND	NA
7/23/93	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/23/93	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/23/93	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/23/93	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/23/93	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/23/93	ES-11	WATER	NA	ND	0.7	ND	1.2	1.9	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/07/93	BC-02	WATER	NA	ND	ND	ND	ND	ND	1.4	NA	NA
10/07/93	BC-03	WATER	NA	ND	ND	1.0	2.0	3.0	1.4	NA	NA
10/07/93	ES-03	WATER	NA	2.0	1.0	ND	2.0	5.0	ND	NA	NA
10/07/93	ES-04	WATER	NA	8.0	ND	ND	2.0	10.0	ND	NA	NA
10/07/93	ES-06	WATER	NA	1.0	ND	ND	ND	ND	ND	NA	NA
10/07/93	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA
10/07/93	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA
10/07/93	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA
10/07/93	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA
10/07/93	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	NA	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
1/05/94	BC-02	WATER	NA	NA	NA	NA	NA	NA	NA	NA	NA
1/05/94	BC-03	WATER	NA	ND	ND	ND	1.6	1.6	1.8	ND	NA
1/05/94	ES-03	WATER	NA	13	2.0	7.0	5.0	27	NA	0.53	NA
1/05/94	ES-04	WATER	NA	15	0.6	0.4	3.0	19	ND	0.13	NA
1/05/94	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/94	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/94	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/94	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/94	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/94	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
4/07/94	BC-02	WATER	NA	NA	NA	NA	NA	NA	NA	NA	NA
4/07/94	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.85	ND	NA
4/07/94	ES-03	WATER	NA	10	9	26	34	79	0.91	0.85	NA
4/07/94	ES-04	WATER	NA	11	ND	ND	ND	11	ND	0.17	NA
4/07/94	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	0.16	NA
4/07/94	ES-07	WATER	NA	ND	ND	ND	ND	ND	0.10	0.11	NA
4/07/94	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/07/94	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/07/94	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/07/94	ES-11	WATER	NA	ND	ND	ND	ND	ND	0.35	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/13/94	BC-02	WATER	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/13/94	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.20	ND	NA
7/13/94	ES-03	WATER	NA	2.0	0.9	0.8	3.0	6.7	0.28	0.37	NA
7/13/94	ES-04	WATER	NA	9.0	ND	ND	0.7	9.7	ND	0.13	NA
7/13/94	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/13/94	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/13/94	ES-08	WATER	NA	ND	ND	ND	ND	ND	NA	ND	NA
7/13/94	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/13/94	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/13/94	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/06/94	BC-02	WATER	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/06/94	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.82	ND	NA
10/06/94	ES-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-04	WATER	NA	18.0	ND	2.0	3.0	23.0	ND	0.10	NA
10/06/94	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/06/94	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
1/13/95	BC-02	WATER	NA	ND	ND	ND	ND	ND	1.1	ND	NA
1/13/95	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.89	ND	NA
1/13/95	ES-03	WATER	NA	19	15	72	88	194	1.1	1.6	NA
1/13/95	ES-04	WATER	NA	12	ND	ND	2	14	ND	0.15	NA
1/13/95	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/13/95	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/13/95	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/13/95	ES-09	WATER	NA	ND	ND	ND	ND	ND	1.1	ND	NA
1/13/95	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/13/95	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
4/11/95	BC-02	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	BC-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-03	WATER	NA	20	7	36	22	85	0.39	0.94	NA
4/11/95	ES-04	WATER	NA	39	4	12	24	79	ND	0.18	NA
4/11/95	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
4/11/95	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	0.17	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/06/95	BC-02	WATER	NA	ND	ND	ND	ND	ND	0.29	ND	NA
7/06/95	BC-03	WATER	NA	ND	ND	ND	ND	ND	0.38	ND	NA
7/06/95	ES-03	WATER	NA	6	ND	7	ND	13	1.2	0.24	NA
7/06/95	ES-04	WATER	NA	100	10	26	61	197	0.16	0.60	NA
7/06/95	ES-06	WATER	NA	ND	ND	ND	2	2	ND	ND	NA
7/06/95	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/06/95	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/06/95	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/06/95	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/06/95	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/05/95	BC-02	WATER	NA	1	ND	ND	1	2	1.5	ND	NA
10/05/95	BC-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-03	WATER	NA	2	2	ND	ND	4	0.11	ND	NA
10/05/95	ES-04	WATER	NA	210	16	71	84	381	0.17	1.2	NA
10/05/95	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-09	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-10	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/05/95	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
1/05/96	ES-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
1/05/96	ES-04	WATER	NA	34	ND	5	4	ND	ND	0.12	NA
1/05/96	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
4/09/96	ES-03	WATER	NA	ND	ND	ND	ND	ND	0.12	NA	NA
4/09/96	ES-04	WATER	NA	57	3	17	19	96	ND	NA	NA
4/09/96	ES-06	WATER	NA	ND	ND	ND	ND	ND	0.22	NA	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/09/96	ES-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/09/96	ES-04	WATER	NA	43	4.6	21	17	85.6	ND	0.22	NA
7/09/96	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/09/96	ES-07	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/09/96	ES-08	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
7/09/96	ES-11	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

8934
OAKLAND CA
TERMINAL

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/08/96	ES-03	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA
10/08/96	ES-04	WATER	NA	110	4.4	42	39	195.4	ND	0.86	NA
10/08/96	ES-06	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
1/16/97	ES-3	WATER	NA	ND	ND	ND	ND	ND	ND	0.051	NA
1/16/97	ES-4	WATER	NA	4.6	ND	ND	0.56	ND	ND	0.059	NA
1/16/97	ES-6	WATER	NA	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
4/17/97	BC-1	WATER	ND	160	72	35	93	360	0.64	2000	NA
4/17/97	BC-2	WATER	ND	ND	ND	ND	ND	ND	0.05	ND	NA
4/17/97	BC-3	WATER	ND	ND	ND	ND	ND	ND	ND	ND	NA
4/17/97	ES-1	WATER	ND	110	18	7.3	45	180.3	ND	1000	NA
4/17/97	ES-11	WATER	ND	ND	ND	ND	ND	ND	ND	ND	NA
4/17/97	ES-2	WATER	ND	340	110	110	240	800	1.8	3800	NA
4/17/97	ES-3	WATER	ND	ND	ND	ND	ND	ND	0.12	ND	NA
4/17/97	ES-4	WATER	ND	87	11	49	24	171	0.10	ND	NA
4/17/97	ES-5	WATER	ND	590	1200	180	1000	2970	1.6	2400	NA
4/17/97	ES-6	WATER	ND	ND	ND	ND	ND	ND	0.12	ND	NA
4/17/97	ES-7	WATER	ND	ND	ND	ND	ND	ND	0.06	ND	NA
4/17/97	ES-8	WATER	ND	ND	ND	ND	ND	ND	ND	ND	NA

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/15/97	BC-1	WATER	100	520	130	170	290	1110	95	11000	203
7/15/97	BC-2	WATER	ND	ND	ND	ND	ND	ND	0.68	ND	ND
7/15/97	BC-3	WATER	ND	ND	ND	ND	ND	ND	0.49	ND	ND
7/15/97	ES-2	WATER	81	190	140	73	250	653	16	3700	194
7/15/97	ES-3	WATER	ND	ND	ND	ND	ND	ND	0.17	ND	ND
7/15/97	ES-4	WATER	ND	110	11	42	40	203	0.37	920	18.40
7/15/97	ES-6	WATER	ND	ND	ND	ND	ND	ND	0.06	ND	ND

8934
OAKLAND CA
TERMINAL

Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
7/16/97	ES-1	WATER	ND	76	8.2	11	25	120.2	1.2	960	13.64
7/16/97	ES-5	WATER	350	810	1800	430	1800	9680	15	27000	215.6

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Date	Location	Matrix	MTBE	Benzene	Toulene	Ethyl-benzene	Total Xylenes	Total Btex	TPH diesel	TPH gasoline	Total PAHs
10/07/97	BC-1	WATER	ND	310	600	370	1900	3180	484	31000	~~4215~~ 1313
10/07/97	BC-2	WATER	ND	ND	ND	ND	ND	ND	0.92	ND	ND
10/07/97	BC-3	WATER	ND	ND	ND	1.9	1.5	3.4	1.34	51	ND
10/07/97	ES-1	WATER	14	49	3.4	11	23	100.4	2.77	1700	9.92
10/07/97	ES-2	WATER	ND	190	46	46	70	352	8.04	7200	99.26
10/07/97	ES-3	WATER	ND	ND	ND	ND	ND	ND	0.205	ND	ND
10/07/97	ES-4	WATER	ND	11	ND	2.8	2.3	16.1	0.101	120	2.4
10/07/97	ES-5	WATER	ND	260	470	160	590	1480	6.51	15000	~~425.3~~ 123.6
10/07/97	ES-6	WATER	ND	ND	ND	ND	ND	ND	ND	ND	ND