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PORT OF OAKLAND
ENVIRONMENTAL DIVISION

JUL 28 1997

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ENVIRONMENTAL DIVISION

July 11, 1997

Project No. 95-113.27

STID 3982

Mr. John Prall
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

97 JUL 28 PM 1:24
ENVIRONMENTAL
PROTECTION

Results of Soil and Water Investigation
TransBay Container Terminal, Berth 25
707 Ferry Street
Oakland, California 94607
(Work Order No.202634)

Dear Mr. Prall:

Innovative Technical Solutions, Inc. (ITSI) is pleased to provide the results of the soil and water investigation conducted in the area of two former 1,000-gallon gasoline and diesel underground storage tanks (USTs) at the TransBay Container Terminal (Berth 25), 707 Ferry Street in Oakland, California. This investigation was performed on behalf of the Port of Oakland in response to a December 17, 1996 letter from Ms. Jennifer Eberle, Hazardous Materials Specialist with the Alameda County Health Care Services Agency (Alameda County), requesting a Soil and Water Investigation (SWI) in the area of the former UST excavation.

Figure 1 shows the approximate location of the site, and Figure 2 shows the general site layout. Field activities were performed during the period of March 17 to April 8, 1997, and were performed as outlined in our February 12, 1997 *Workplan for Soil and Water Investigation.*

BACKGROUND

On June 21, 1996, two 1,000-gallon USTs (CF-03 and CF-05) and an associated fuel dispenser island were removed from the TransBay Container Terminal by Accutite Environmental Engineering (Accutite). Approximately 100 cubic yards of soil was removed from the tank

1330 Broadway, Suite 1625, Oakland, CA 94612 (510) 286-8888 (510) 286-8889 fax

excavation. Soil samples collected during removal of the UST were reported to contain elevated concentrations of petroleum hydrocarbons.

On July 23, 1996, approximately 20 cubic yards of additional soil was removed from the excavation. Due to the presence of an underground gas line along the south and west walls of the tank excavation, further excavation in these directions was restricted. Confirmation soil samples collected following overexcavation activities were reported to contain petroleum hydrocarbons and total lead. A water sample collected from groundwater present in the excavation also reportedly contained petroleum hydrocarbons. The results of the tank removal and overexcavation activities were documented in the *Tank Closure Report*, prepared by ITSI, dated November 12, 1996.

Based on the presence of petroleum hydrocarbons found in the soil and groundwater following overexcavation activities, Alameda County requested a SWI to be performed in the area of the former UST excavation. Pursuant to the above request, SWI activities included the installation and sampling of one groundwater monitoring well 10 feet west of the former UST excavation and the drilling and sampling of one soil boring south of the excavation. This report provides a summary of the field activities conducted as part of this SWI and laboratory results for the soil and groundwater samples collected during the field activities.

FIELD ACTIVITIES

Field activities performed as part of this SWI are discussed below.

Health and Safety

A site-specific Health and Safety Plan was prepared for the field activities by Environmental Health Consultants, and was signed and approved on February 3, 1997 by Ms. Irene Fanelli, CIH. Field activities were performed consistent with requirements of the Health and Safety Plan. A copy of the Health and Safety Plan is included as Attachment A.

Subsurface Utility Clearance

On March 17, 1997, soil boring and monitoring well locations were outlined in the field for Underground Service Alert (USA) utility clearance. Additionally, California Utility Surveys (CUS), an independent utility locating contractor, was utilized to clear the locations of the proposed soil boring and monitoring well.

Drilling of Soil Borings and Collection of Soil Samples

On April 2, 1997, two soil borings were drilled by Soils Exploration Services, Inc. (SES) using a drilling rig equipped with 8-inch hollow stem flight augers. One soil boring was drilled 10 feet west of the former UST excavation in the presumed downgradient direction and was completed as a monitoring well (MW-1). The second soil boring (SB-1) was drilled 5 feet south of the former excavation to further delineate the lateral extent of the remaining soil contamination reported along the south wall. Figure 2 shows the approximate locations of MW-1 and SB-1. The borings were drilled under permit number 97181 from Alameda County Flood Control and Water Conservation District, Zone 7. A copy of the permit is included in Attachment B.

Three soil samples were collected from SB-1 at depths of approximately 5 feet, 8 feet and 10.5 feet below grade surface (bgs). Two soil samples were collected during the drilling of MW-1 at depths of approximately 5 feet and 9.5 feet bgs. Soil samples were collected using a spilt spoon sampler equipped with three, 6-inch long by 2-inch diameter, brass sleeves driven with a 140-pound hammer into undisturbed soil. The bottom brass sleeve sample was then capped with Teflon patches and plastic friction caps, properly labeled, and placed in an iced cooler for transport to the laboratory. The samples were logged by a field geologist according to the Unified Soils Classification System (USCS). Copies of the boring logs are included in Attachment C.

The soil samples were submitted to Pace Analytical Services (Pace), a California-certified analytical laboratory located in Petaluma, California. The soil samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPHg) by Modified EPA Method 8015.
- Benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020.
- TPH as diesel (TPHd) by Modified EPA Method 8015 with silica gel cleanup.
- Total lead by EPA Method 6010.

Selected soil samples were screened in the field using an organic vapor meter equipped with photoionization detector (PID) by placing a small portion of the soil in a sealed container. The concentration of organic vapor in the headspace of the container was then measured with the PID, and the concentration recorded on the boring log.

The soil boring (SB-1) was abandoned by backfilling the borehole with neat cement grout from the total depth drilled (11.0 feet bgs) to approximately 4-inches bgs. The borehole was then capped with approximately 4-inches of asphalt patch to match the surrounding asphalt surface.

Construction of Monitoring Well

As previously mentioned, monitoring well MW-1 was constructed in the boring located 10 feet west of the former UST excavation in the presumed downgradient direction. The well was completed with 2-inch, Schedule 40, polyvinyl chloride (PVC) screen and blank well casing. Well casing was set to a depth of approximately 19.5 feet bgs. The screened interval for the monitoring well consists of 0.020-inch machine-slotted casing set from the total depth of the well (19.5 feet bgs) to a depth of approximately 6.0 feet bgs. Blank casing was set from the top of the screened casing (6.0 feet bgs) to within a few inches of the grade surface. Filter material consists of #3 Lonestar sand placed into the annular space of the monitoring well from the bottom of the well (19.5 feet bgs) to approximately 2 feet above the screened casing interval (4.0 feet bgs). A bentonite seal, approximately 1-foot thick, was placed on top of the sand, with an annular seal consisting of neat cement grout extending to grade surface (3.0 to 0.0 feet bgs). The monitoring wellhead was enclosed with a heavy duty, traffic rated, Morrison Buque well box and set in concrete placed flush with the surrounding grade surface. The wellhead was capped with a 2-inch locking compression well cap and locked. Well construction details are shown in Figure 3.

The monitoring well was constructed under permit number 97181 from Alameda County Flood Control and Water Conservation District, Zone 7. A State of California Well Completion Report was filed with Zone 7 agency on May 2, 1997. Copies of the permit and State of California Well Completion Report are included in Attachment B.

Monitoring Well Location Survey

On April 8, 1997, the groundwater monitoring wellhead was surveyed for vertical elevation and horizontal location by PLS Surveys, Inc., a California licensed land surveyor. The vertical elevation was surveyed relative to the Port of Oakland datum. The horizontal location was surveyed relative to fixed site features. Surveying results are shown on the survey map included in Attachment C.

Monitoring Well Development and Groundwater Sampling

On April 8, 1997, the monitoring well was monitored, developed and sampled. The well was initially gauged for depth to water and checked for the presence of separate phase hydrocarbons No separate phase hydrocarbons were observed in the monitoring well. The depth to water measurement was recorded on the Monitoring Well Development / Purge and Sample Form. A copy of the form is included in Attachment E. Depth to water and groundwater elevation data is summarized in Table 1. The groundwater elevation was calculated using the measured depth to water and survey elevation of top of casing. Figure 2 shows the groundwater elevation.

Following well monitoring, SES performed well development and purging using surge block and bail techniques. The monitoring well was developed (swabbed) using a 2-inch surge block followed by purging approximately three well volumes using a clean disposable bailer. This development and purging procedure was repeated four times until the groundwater removed appeared to be relatively free of sediments. Approximately 20 gallons of water were removed from the well during purging. Physical parameters, including pH, electrical conductivity, and temperature, were measured following each purge cycle (approximately three well volumes). Field parameters and development data were recorded on the Monitoring Well Development / Purge and Sample Form.

A groundwater sample was collected from MW-1 after 100 percent of the initial water level in the monitoring well had recovered. The water sample was collected using a clean disposable bailer and placed into laboratory provided containers according to procedures outlined in the Workplan. The sample containers were properly labeled and placed into an iced cooler for transport to the laboratory.

The groundwater sample was sent under chain-of-custody procedures to Pace and was analyzed for the following:

- TPHg by Modified EPA Method 8015.
- BTEX by EPA Method 8020.
- TPHd by Modified EPA Method 8015 with silica gel cleanup procedure.
- Total lead by EPA Method 7421.
- Total dissolved solids (TDS) by EPA Method 160.1.

Quality Assurance and Quality Control

Appropriate quality assurance and quality control (QA/QC) procedures were implemented during the soil and groundwater investigation, including:

- One field duplicate sample (designated QC-1) was collected of groundwater from MW-1 and was analyzed for volatile target compounds (TPHg and BTEX).
- A trip blank was included in the cooler with the groundwater sample, and was analyzed for volatile target compounds.
- Disposable sampling equipment was utilized for the collection of the groundwater sample, avoiding potential cross-contamination issues.
- Non-disposable sampling equipment (e.g., split spoon sampler) was decontaminated prior to collecting each soil sample by washing with a non-phosphate detergent and double rinsing with water.

Investigation Derived Waste

Rinse and purge water from decontamination and well development activities, and soil cuttings generated during drilling, were placed in 55-gallon drums and labeled as to the source and date of accumulation. Disposal of the water and soil cuttings will be performed by the current Port of Oakland disposal contractor.

FINDINGS

Table 2 provides a summary of laboratory results for the soil and groundwater samples. Copies of the laboratory reports, chromatograms and chain-of-custody forms are included in Attachment F.

Soil

Results of the soil sampling and analyses are summarized below:

- TPHg was reported at a concentration of 1.4 mg/kg in one soil sample collected from SB-1 at 8 feet in depth. TPHg was reportedly not detected in the remaining four soil samples collected from SB-1 and MW-1.
- Benzene, toluene, ethylbenzene, and/or xylenes were reportedly detected in two soil samples collected from SB-1, at 8 and 10.5 foot depths, at concentrations ranging from 0.0017 to 0.015 mg/kg. BTEX constituents were reportedly not detected in the remaining three soil samples collected.
- TPHd was reportedly detected in SB-1 at 8 feet in depth and in MW-1 at 5 feet in depth at concentrations of 1,600 and 120 mg/kg, respectively[1].
- Low levels of total lead (less than 10 times Soluble Threshold Limit Concentration [STLC]) were reported in three soil samples collected and analyzed. Total lead was reported not detected in the remaining two soil samples collected.

Groundwater

Results of the groundwater monitoring well sampling and analyses are summarized below:

- TPHg, toluene, ethylbenzene and xylenes, TPHd, and total lead were reportedly not detected in the groundwater sample collected.
- Benzene was reportedly detected at a concentration of 0.0019 mg/L in the groundwater sample, above its Maximum Contaminant Level (MCL) of 0.001mg/L.
- TDS was reported at a concentration of 5,560 mg/l in the groundwater sample, in excess of 3,000 mg/l limits for drinking water as outlined in State Water Resources Control Board Resolution No. 88-63.

[1] The laboratory reported the hydrocarbons present in these samples do not match the profile of the laboratory standard.

Please feel free to give us a call if you have any questions or need additional information.

Sincerely,

Jim Schollard
Environmental Scientist

Jeffrey D. Hess, R.G.
Project Director

Attachments

TABLE 1

GROUNDWATER ELEVATION
TRANSBAY CONTAINER TERMINAL, BERTH 25
707 FERRY STREET
OAKLAND, CALIFORNIA

Monitoring Well ID	Elevation of Top of Casing[1] (feet)	Date of Monitoring	Measured Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation[1] (feet)	Note
MW-1	14.56	04/08/97	9.51	-	5.05	-

[1] Relative to Port of Oakland datum.

TABLE 2

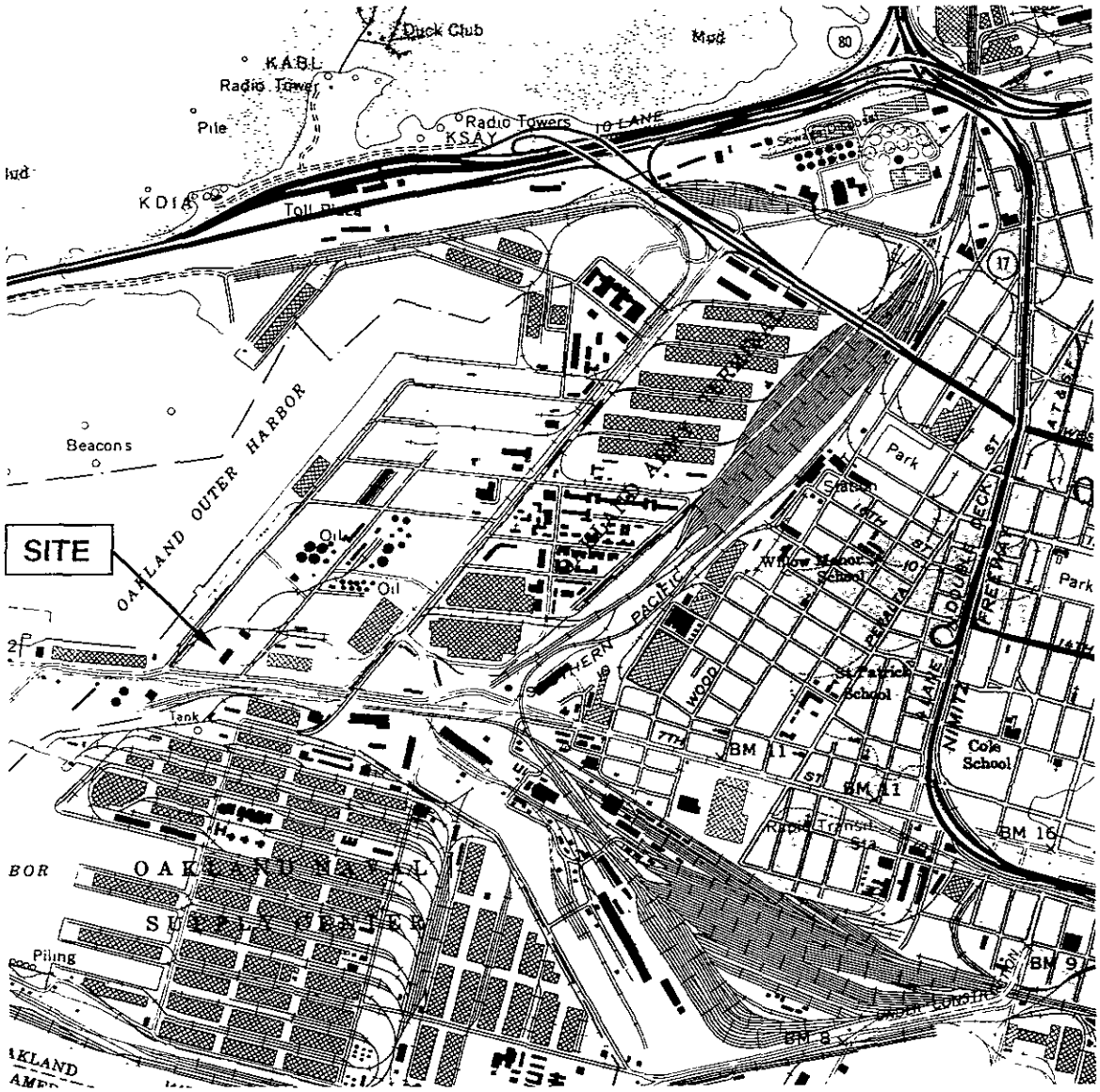
LABORATORY RESULTS FOR SOIL AND GROUNDWATER SAMPLES
TRANSBAY CONTAINER TERMINAL, BERTH 25
707 FERRY STREET
OAKLAND, CALIFORNIA

Sample ID	Depth	Date	TPHg	Benzene	Ethyl - benzene	Toluene	Xylenes	TPHd	Lead	TDS (mg/L)
SOIL SAMPLES (in mg/kg)										
SB1-5'	5'	4/2/97	<0.2[1]	<0.001	<0.001	<0.001	<0.002	<5	7.48	-
SB1-8'	8'	4/2/97	1.4[1]	0.015	0.0021	0.014	0.0021	1,600[1,2]	23.5	-
SB1-10.5'	10.5'	4/2/97	<0.2	0.010	0.0017	0.0039	<0.002	<5	<4.76	-
MW1-5'	5'	4/2/97	<0.2	<0.001	<0.001	<0.001	<0.002	120[1,2]	31.2	-
MW1-9.5'	9.5'	4/2/97	<0.2	<0.001	<0.001	<0.001	<0.002	<5	<4.59	-
GROUNDWATER SAMPLE (in mg/L)										
MW-1	-	4/8/97	<0.05[1]	**0.0019**	<0.0005	<0.0005	<0.001	<0.05	<0.005	5,560
TTLC[3]			-	-	-	-	-	-	1,000	-
STLC[4]			-	-	-	-	-	-	5	-
MCL[5]			-	0.001	0.700	0.150	1.75	-	0.015	-

[1]High boiling point hydrocarbons are present in sample.
[2]Hydrocarbons present do not match profile of laboratory standard.
[3]Total Threshold Limit Concentrations (TTLC) in mg/kg.
[4]Soluble Threshold Limit Concentrations (STLC) in mg/L.
[5]Maximum Contaminant Level (MCL) for drinking water, in mg/L
Bold values exceed MCLs.

TPHg = Total petroleum hydrocarbons (TPH) as gasoline.
TPHd = Total petroleum hydrocarbons (TPH) as diesel.
TDS = Total dissolved solids

95-113.27/F 1-SitLoc



0 2,000 Feet 4,000 Feet

Approximate Scale

Source: Oakland West 7.5-minute U.S.G.S. Quadrangle, dated 1959, and photorevised in 1980.

FIGURE 1

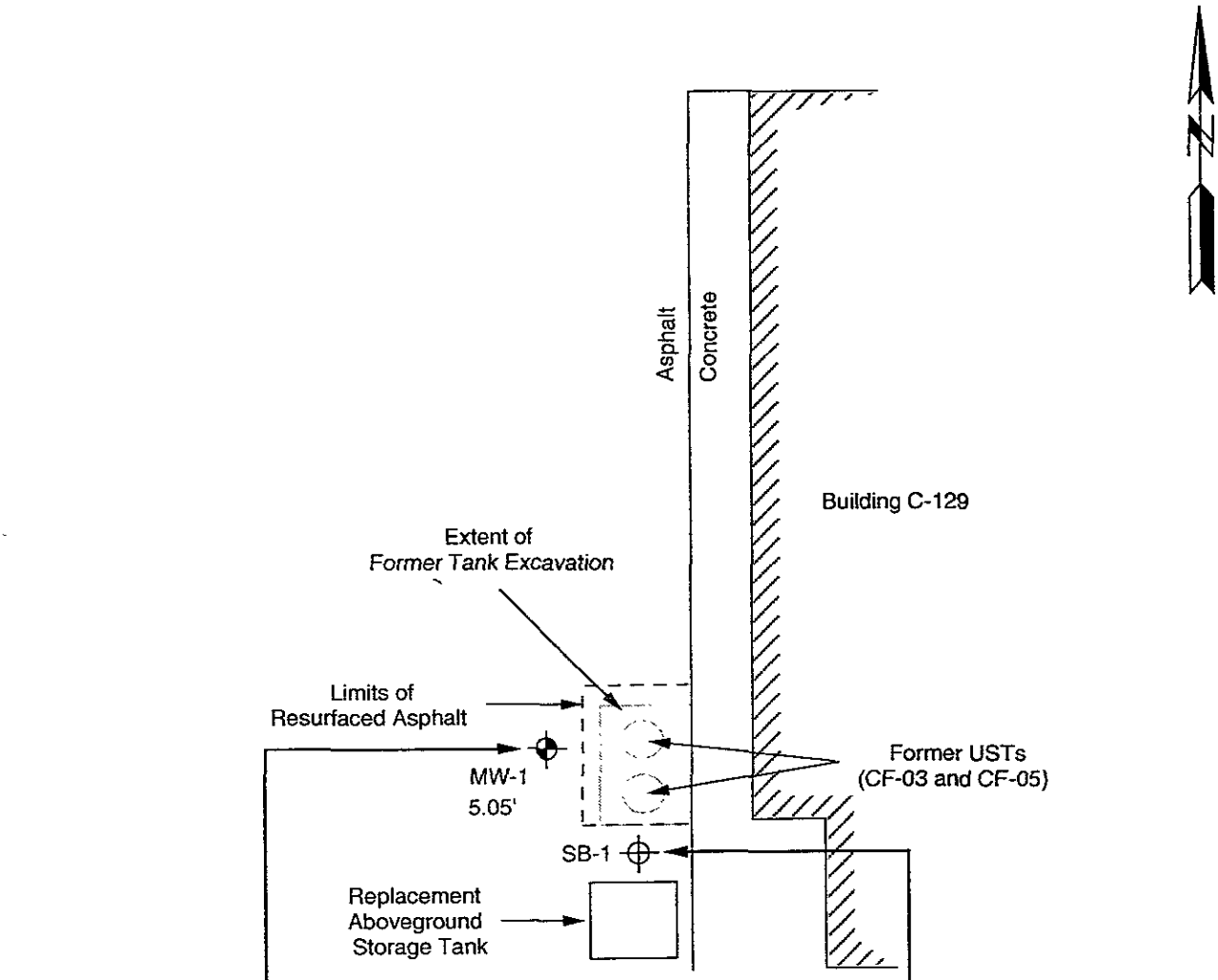
SITE LOCATION

TransBay Container Terminal (Berth 25)
707 Ferry Street
Oakland, California

PORT OF OAKLAND

INNOVATIVE TECHNICAL SOLUTIONS, INC.

95-113.27/F-2-Results



MW-1					
5 Feet		9.5 Feet		Groundwater	
TPHg	<0.2	TPHg	<0.2	TPHg	<0.05
B	<0.001	B	<0.001	B	0.0019
E	<0.001	E	<0.001	E	<0.0005
T	<0.001	T	<0.001	T	<0.0005
X	<0.002	X	<0.002	X	<0.001
TPHd	120	TPHd	<5	TPHd	<0.05
Pb	31.2	Pb	<4.59	Pb	<0.005

SB-1					
5 Feet		8 Feet		10.5 Feet	
TPHg	<0.2	TPHg	1.4	TPHg	<0.2
B	<0.001	B	0.015	B	0.010
E	<0.001	E	0.0021	E	0.0017
T	<0.001	T	0.014	T	0.0039
X	<0.002	X	0.0021	X	<0.002
TPHd	<5	TPHd	1,600	TPHd	<5
Pb	7.48	Pb	23.5	Pb	<4.76

Legend

Approximate Location of Monitoring Well

Approximate Location of Boring

5.05' Groundwater Elevation on 4/8/97 (in feet)

TPHg	<0.2	TPH as gasoline (mg/kg or mg/L)
B	<0.001	Benzene (mg/kg or mg/L)
E	<0.001	Ethylbenzene (mg/kg or mg/L)
T	<0.001	Toluene (mg/kg or mg/L)
X	<0.002	Xylenes (mg/kg or mg/L)
TPHd	120	TPH as diesel (mg/kg or mg/L)
Pb	31.2	Lead (mg/kg or mg/L)

0 30 Feet 60 Feet

Approximate Scale

Source: 707 Ferry Street, PLS Surveys, Inc., 4/8/97

FIGURE 2

BORING/MONITORING WELL LOCATIONS AND SELECTED LABORATORY RESULTS

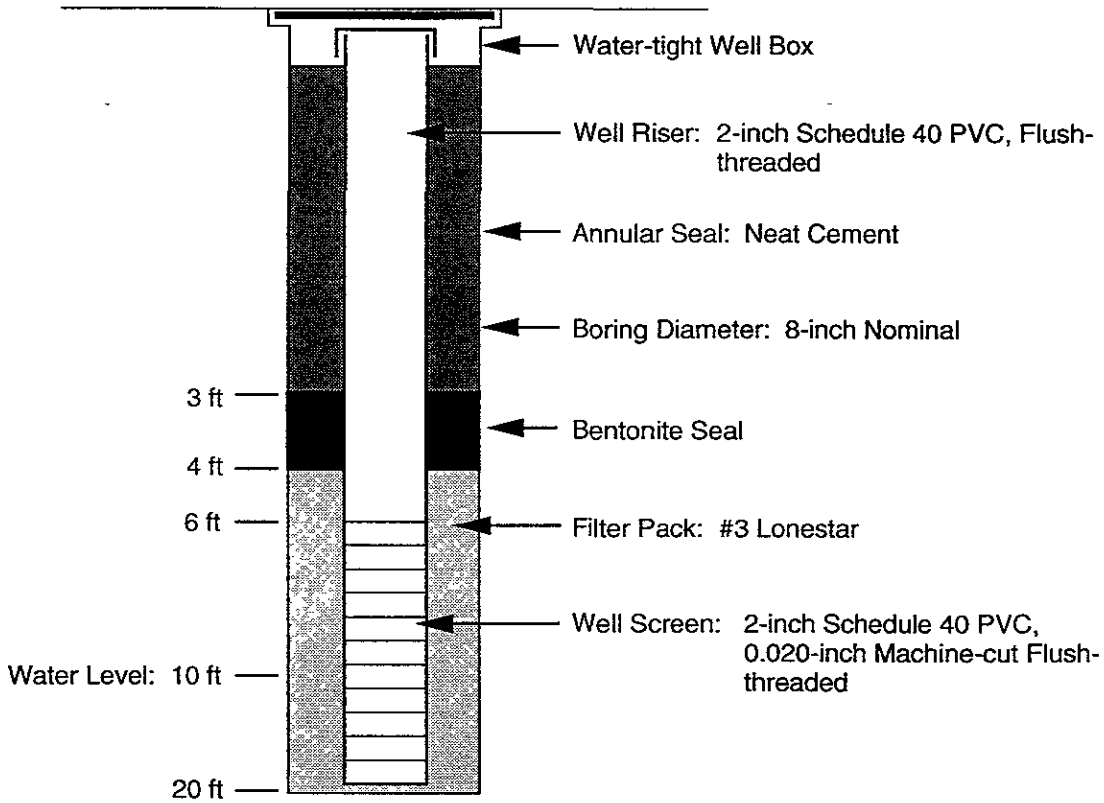
TransBay Container Terminal (Berth 25)
707 Ferry Street
Oakland, California

PORT OF OAKLAND

ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

95-113.27/F-3-MW AsBuilt



Drawing Not to Scale

FIGURE 3

MONITORING WELL AS-BUILT DIAGRAM FOR MW-1

TransBay Container Terminal (Berth 25)
707 Ferry Street
Oakland, California

PORT OF OAKLAND

INNOVATIVE TECHNICAL SOLUTIONS, INC.

ATTACHMENT A

COPY OF HEALTH AND SAFETY PLAN

This health and safety plan has been developed for groundwater investigation in the area of a former underground gasoline storage tank at Berth 25 of the Transbay Container Terminal at the Port of Oakland. The plan has been prepared in accordance with project specifications, 8 CCR 5192 and other applicable regulations, and good industrial hygiene practice.

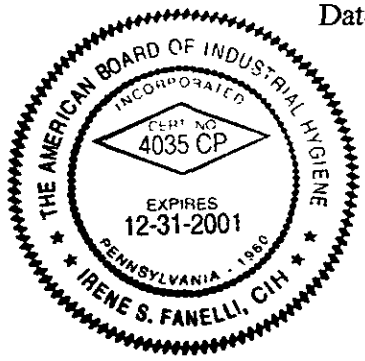
This plan is intended to apply to sampling at the above listed site only, and must not be extrapolated to other substances, work activities or project locations without modification to address the specific hazards associated with those substances, activities and/or any other specific regulatory requirements.

Irene S. Fanelli, CIH/SRC

Irene S. Fanelli, CIH

2/3/97

Date



HEALTH AND SAFETY PLAN

GROUNDWATER INVESTIGATION
IN THE AREA OF A FORMER GASOLINE TANK
BERTH 25, TRANSBAY CONTAINER TERMINAL
PORT OF OAKLAND

1.0 INTRODUCTION

This Health and Safety Plan (Plan) will be in effect during the groundwater investigation in the area of a former underground gasoline storage tank at Berth 25 of the Transbay Container Terminal at the Port of Oakland. The sampling will be conducted utilizing a drill rig/cuttingless sampling system for soil and groundwater sample collection. This Plan addresses the potential exposure to soil and groundwater which may contain petroleum hydrocarbon contamination.

This Plan covers ITSI personnel only. All other personnel on site will be expected to possess the appropriate training, experience, and personal protective equipment. Based upon experience with similar operations, the potential exposures to site personnel is expected to be minimal. If circumstances outside the scope of this Plan occur on site, the Plan will be amended to account for such circumstances, and the appropriate protective measures will be taken

2.0 PERSONNEL

Site Health and Safety Officer - The Site Health and Safety Officer will be responsible for briefing field personnel and contractors on the potential site hazards, personal protective equipment to be used on site, work rules and safe work practices, and implementation of the Plan, prior to initiation of work.

The Health and Safety Officer will also conduct tailgate safety meetings as appropriate during field operations, to inform the field personnel and contractors of changing field conditions and any potential changes in the Plan.

Project Manager - The Project Manager, Jeff Hess, will be responsible for all technical aspects of the project, and will assure that the requirements of the Plan are implemented.

Consulting Certified Industrial Hygienist - The Consulting Certified Industrial Hygienist, Irene S. Fanelli, CIH, has reviewed this Health and Safety Plan, and will provide consulting support for the project activities on an as-needed basis.

Field Personnel - Field personnel will be responsible for understanding and complying with the requirements of this Plan. They will acknowledge and sign a copy of this Plan, and will attend tailgate safety meetings, as required.

Field personnel will have the appropriate prior experience, training, and medical clearance in compliance with 8 CCR 5192. Such training includes the 40-hour basic training, three days of supervised field experience, 8-hour update training, and 8-hour supervisory training, as appropriate.

3.0 CONTAMINANTS

The potential chemical hazards on site consist of groundwater containing total petroleum hydrocarbons as gasoline, diesel, aromatic petroleum hydrocarbons including benzene, toluene, ethylbenzene, and xylenes, and organic lead from leaded gasoline. General symptoms of exposure to gasoline and its constituents include: irritation of the eyes, nose, mucous membranes, and respiratory system; headache; nausea, vomiting, abdominal pain; giddiness, excitement, dizziness, staggered gait; fatigue, weakness, lassitude; anorexia; corneal vacuolization; dermatitis; and bone marrow depression (benzene). Target organs include the central nervous system, eyes, skin, gastrointestinal tract, blood, liver, and kidneys.

Benzene is listed under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as a chemical known to the State of California to cause cancer. Toluene is listed as a chemical known to cause reproductive harm. For this reason, the following warning will be given to all on-site personnel:

"This area contains chemicals known to the State of California to cause cancer (gasoline and benzene) and reproductive harm (toluene)."

The table below lists toxicological information for the site contaminants:

Chemical	Cal/OSHA PEL or TLV (ppm)	Carcinogen?	Absorbed through skin?
Gasoline	300	Yes	Yes
Diesel	none	No	Yes
Benzene	1	Yes	Yes
Toluene	50	No	Yes
Ethylbenzene	100	No	No
Xylenes	100	No	No
Tetraethyl Lead	0.075 mg/m^3	No	Yes

Notes:
1. Data is taken from Title 8 CCR 5155, the NIOSH Pocket Guide to Chemical Hazards, 1994, and the ACGIH Threshold Limit Values, 1995-1996.
2. The PEL/TLV is the lowest of the two values.

4.0 POTENTIAL FOR EXPOSURE AND ROUTES OF ENTRY

Chemical hazards may be encountered during the sampling operations. During these operations, site personnel may be exposed to any or all of the chemicals noted in the table. Exposure may occur through inhalation, ingestion, and dermal contact. The potential for exposure, given reasonable precautions, is considered to be low. Overall exposure will be controlled through restriction of personnel from entering the excavation. Exposure through inhalation will be controlled through ambient air monitoring and the use of approved respiratory protection as necessary. Dermal exposure will be controlled by limiting contact through safe work practices, the use of chemical protective clothing, and personal hygiene. Ingestion hazards will be controlled by strict limitation of eating, drinking, and smoking in the work areas, and by rigorous application of decontamination and personal hygiene protocols.

5.0 PHYSICAL HAZARDS

No confined spaces will be entered during the work.

Physical hazards will be posed by heavy equipment and vehicle traffic as part of daily operations at the Port of Oakland facilities and as part of the site activities. In addition, all personnel working in equipment and vehicle traffic areas will wear orange reflective vests for improved visibility.

Personnel working in areas where heavy equipment is operating may be exposed to excessive noise, and will wear their choice of hearing protection as necessary.

Heat stress may also be a potential physical hazard during the work. Personnel must be familiar with the symptoms of heat stress, and the conditions during which it may occur. Heat stress symptoms may include nausea, headache, lightheadedness, lack of coordination, or slurred speech. The use of protective clothing greatly enhances the likelihood of heat stress. Where site conditions warrant, site personnel will monitor for heat stress and implement work/rest regimens, if necessary. Potable water and/or an electrolyte replacement fluid such as Gatorade will be available on-site at all times.

6.0 AIR MONITORING/ACTION LEVELS

Direct reading air monitoring for organic vapors will be conducted during the sampling utilizing a Photo Ionization Detector (PID). All direct-reading monitoring results will be compared to background levels, as measured at locations upwind of the work area. All equipment will be calibrated at least daily, according to the manufacturer's instructions. Additional calibration will be carried out as necessary. Calibration and monitoring data will be recorded in the field log for the project.

All site workers will be informed that they are always entitled to make use of respiratory protection prior to reaching a work area action level. Once an action level is reached, designated

protection levels will be mandatory. All respiratory protection will be NIOSH/MSHA approved equipment. If PID readings consistently reach 10 ppm above background for five minutes, workers will upgrade to respirators with organic vapor cartridges. If PID readings consistently reach 25 ppm, workers will leave the area until organic vapor levels are below this level.

7.0 PERSONAL PROTECTIVE EQUIPMENT

All personnel in the active work area will be required to wear a hard hat, steel-toed boots, and safety glasses to protect against injury, and orange reflective safety vests in traffic areas. Personnel working around heavy equipment will utilize their choice of hearing protection. Personnel will also be required to wear neoprene or nitrile gloves when handling soil or groundwater samples Personnel will utilize appropriate decontamination techniques prior to leaving the work area These measures include proper containment and disposal of disposable protective equipment, washing and rinsing of reusable equipment, and washing of hands before eating, drinking, or smoking.

8.0 EMERGENCIES IN THE FIELD

In case an accident should occur in the field the nearest appropriate emergency facility will be notified immediately. The locations of the nearest emergency facilities to the project site are:

Hospital

- Kaiser Permanente Medical Center
  280 West MacArthur Boulevard — (510) 596-7600

Police Department

- Oakland Police Department — 911 or (510) 238-3481

Fire Department

- Oakland Fire Department — 911 or (510) 238-3851

Other Numbers

- ITSI - Jeff Hess — (510) 256-8898
- EHCI - Irene Fanelli — (415) 347-9205

To get to the hospital from Berth 25, take Pier Street east to Maritime Street, then left to Grand Avenue, then right to Peralta Street, then left to West MacArthur Boulevard, then right to Kaiser Permanente Hospital at West MacArthur Boulevard and Broadway Avenue.

Spills will be controlled through the use of sorbent material or soil. Used sorbent materials will be disposed of properly.

9.0 ACCIDENT REPORT

In case of accident, the on-site Health and Safety Officer will provide a report to the Project Manager describing the following:

- The nature of the event that required notification of off-site personnel or agencies.
- The date, time and names of personnel and agencies notified, and their response.
- A description of personal injury and/or property damage.
- A description of the resolutions of the incident.

10.0 ACKNOWLEDGEMENT AND UNDERSTANDING OF THIS PLAN

Field personnel will be briefed on the nature of work at the site, potential hazards, and protective clothing requirements prior to site work. The personnel will then be asked to sign the following statement:

This Health and Safety Plan has been explained to me. I acknowledge receipt of this Plan and obligate myself to read it. I agree to abide by the Plan and procedures outlined herein. I understand that non-compliance with the Plan may lead to termination of my employment.

Signature:	Date:
_____	_____
_____	_____
_____	_____

ATTACHMENT B

COPIES OF ALAMEDA COUNTY ZONE 7 DRILLING PERMIT AND STATE OF CALIFORNIA WELL COMPLETION REPORT

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

May 2, 1997

Wyman Hong
Zone 7 Water Agency
Alameda County Flood Control and Water Conservation District
5997 Parkside Drive
Pleasanton, California 94588

Transmittal
Well Completion Report for Monitoring Well MW-1 (Permit No. 97181)
TransBay Container Terminal, Berth 25
707 Ferry Street
Oakland, California

Dear Mr. Hong:

Attached please find the original State of California Well Completion Report for monitoring well MW-1 constructed on behalf of the Port of Oakland on April 2, 1997. The monitoring well is located at the TransBay Container Terminal, Berth 25, 707 Ferry Street in Oakland, California. Well construction details are recorded on the Well Completion Report and attached boring log. I have also included a copy of the Zone 7 drilling permit (No. 97181) for your reference.

Please give me a call if you have any questions or need additional information.

Sincerely,

Jim Schollard

Jim Schollard
Environmental Scientist

Attachment

cc: John Prall

1330 Broadway, Suite 1625, Oakland, CA 94612 (510) 286-8888 (510) 286-8889 fax

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

PROJECT Port of Oakland - Berth 25 LOGGED BY J. Schollard **BORING NO.** MW-1

PROJECT NUMBER 95-113.27 DATE DRILLED April 2, 1997 SHEET 1 OF 1

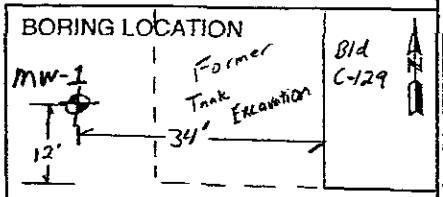
LOCATION 707 Ferry St., Oakland CA TOTAL DEPTH 20.5'

SURFACE ELEVATION _____ BORING DIAMETER 8"

DRILLING COMPANY SES, Inc.

DRILLING METHOD Hollow Stem Auger

BORING LOCATION



Depth (Feet)	Sample Interval	Blow Counts (Blows/foot)	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
						Asph.	Asphalt (~3" thick)
			29.0			GW	GRAVEL with sand, fine to coarse grained sand and gravel, subangular (SA) to subrounded (SR) gravel (TO 3" diam.), medium brown, damp, slight odor (petroleum?); fill material (CUTTINGS)
4		16/17/19	6.0				color change at ~3½' to black, gravel content and angularity increase and coarseness decrease, slight petrol.? odor
MW1-5' 5						SP	SAND, fine grained, light brown, damp, low plasticity, dense
		15/14/23	2.6			SC	Sandy CLAY, olive gray, damp, soft-med. stiff, red-brown oxidation stains
7		9/11/14	3.0				SAND, fine grained, light brown, damp-moist, dense, shell fragments
8½		12/12/14	8.8	1200			Same, medium dense (7-8½')
MW1-9½'				9.75 10.0 1245			color change to gray @ ~8¾', no shell fragments present
10							Wet at ~9¾'; pull augers for 45 min. for water recharge, DTW = 10.0'
						SP	
15		5/6/8	0.0				Same, olive-gray, wet, increased shell fragment content
				19.5			
20		1/1/1	0.0			CL	SILTY CLAY, dark gray to black, moist, medium plasticity, very soft to soft, shell fragments present
					20.5'	TD	=20.5'
25							
30							

CASING DIAMETER 2" CASING LENGTH 19.5' FROM 0 TO 19.5'

SCREEN SIZE 0.020" SCREEN LENGTH 13.5' FROM 6' TO 19.5'

SAND TYPE #3 Lonestar (Envirosand) FROM 4' TO 19.5'
3.0' TO 4.0'+

BENTONITE TYPE 3/8" chips FROM 19.5 TO 20.5

CEMENT/GROUT Neat Cement (Portland) Grout FROM 0' TO 3'

Well Box: Morrison Bueye (Indust. Traffic rated)

ITSI

Background PID monitoring = 0.0-1.0 ppm

INNOVATIVE TECHNICAL SOLUTIONS, INC.

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588-5127 • PHONE (510) 484-2600 FAX (510) 462-3914

FILE COPY

March 21, 1997

Mr. Jim Schollard
Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Dear Mr. Schollard:

Enclosed is drilling permit 97181 for a monitoring well construction project at 707 Ferry Street in Oakland for the Port of Oakland.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact Wyman Hong at extension 235 or me at extension 240.

Very truly yours,

Craig A. Mayfield
Water Resources Engineer III

CM:ab
Enc.

ZONE 7 WATER AGENCY

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

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT 707 Folly St, Trans Bay Container Terminal - Berth 25, Oakland, CA

LIENT
ame Port of Oakland - Contact: Jeff Rubin
ddress 530 Water St. Voice 510-272-1118
ity Oakland, CA Zip 94604

PPLICANT
ame Innovative Technical Solutions, Inc.
Contact: Jim Scholland Fax 510/286-8889
ddress 1330 Broadway Ste 825 Voice 510/286-8888
ity Oakland, CA Zip 94612

YPE OF PROJECT

ell Construction-		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	✓	Well Destruction	___

ROPOSED WATER SUPPLY WELL USE

omestic	___	Industrial	___	Other	Soil/water assessment
unicipal	___	Irrigation	___		

RILLING METHOD:

ud Rotary	___	Air Rotary	___	Auger	✓
able	___	Other	___		

RILLER'S LICENSE NO. C-57 #582696

ELL PROJECTS

Drill Hole Diameter	8	in.	Maximum		
Casing Diameter	2	in.	Depth	23	ft.
Surface Seal Depth	2	ft. (min)	Number	1	

EOTECHNICAL PROJECTS/Environmental

Number of Borings	1		Maximum		
Hole Diameter	5-8	in.	Depth	12	ft.

STIMATED STARTING DATE March 31, 1997
STIMATED COMPLETION DATE March 31, 1997

ereby agree to comply with all requirements of this permit and Alameda unty Ordinance No. 73-68.

PLICANT'S SIGNATURE [signature] Date 3/17/97

FOR OFFICE USE

PERMIT NUMBER 97181
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

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

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

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 20 Mar 97
Wyman Hong

91992

ATTACHMENT C

COPIES OF BORING LOGS

PROJECT Port of Oakland - Berth 25 LOGGED BY J. Scholland **BORING NO.** SB-1

PROJECT NUMBER 95-113.27 DATE DRILLED April 2, 1997 SHEET 1 OF 1

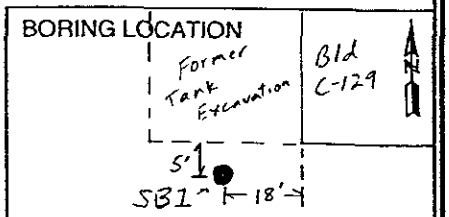
LOCATION 707 Ferry St., Oakland TOTAL DEPTH 11.0'

SURFACE ELEVATION _____ BORING DIAMETER 8"

DRILLING COMPANY SES, Inc

DRILLING METHOD Hollow Stem Auger

BORING LOCATION



Depth (Feet)	Sample Interval	Blow Counts (Blows/foot)	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
			9.7			Asph. GW	Asphalt (~3" thick) GRAVEL with sand, fine to coarse grained sand and gravel, angular(A) to subrounded (SR) gravel (to 2" diam.), medium brown, damp; fill material (CUTTINGS)
							smoother drilling @ ~2.0'
5 SB1-5'		2/3/3	10.5		NA		SAND with gravel, fine and coarse grained sand, fine to coarse grained gravel (to 1½" diam.), olive-gray, damp to moist, loose (poss. disturbed native)
7 SB1-8'		2/2/2	17.4	▽ 8'	1030	SP	Same, fine grained, wet, unknown odor (petroleum?), wood fragments (2" dia.) in shoe (poor recovery)
							wet at ~8.0'
10 SB1-10.5'		2/2/5	12.5				Same, pockets of reddish brown sandy Clay with unknown odor (organic?; PID = 0.0 ppm), shell and wood fragments present
						TD=	11.0' No standing water present in borehole
15							
20							
25							
30							

CASING DIAMETER NA CASING LENGTH _____ FROM _____ TO _____

SCREEN SIZE NA SCREEN LENGTH _____ FROM _____ TO _____

SAND TYPE NA FROM _____ TO _____

BENTONITE TYPE NA FROM _____ TO _____

CEMENT/GROUT (Portland) Neat cement Grout FROM 0 TO 11.0'

ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

Background PID monitoring = 0.0-1.0 ppm

PROJECT Port of Oakland - Berth 25 LOGGED BY S. Schollard **BORING NO.** MW-1

PROJECT NUMBER 95-113.27 DATE DRILLED April 2, 1997 SHEET 1 OF 1

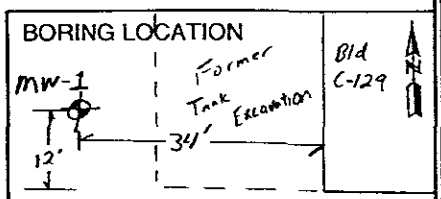
LOCATION 207 Ferry ST., Oakland CA TOTAL DEPTH 20.5'

SURFACE ELEVATION _____ BORING DIAMETER 8"

DRILLING COMPANY SES, Inc.

DRILLING METHOD Hollow Stem Auger

BORING LOCATION



Depth (Feet)	Sample Interval	Blow Counts (Blows/foot)	PID (ppm) B-zone/stem/sample	Water Level	Well Construction	Lithology / USCS	DESCRIPTION
						ASP.	Asphalt (~3" thick)
			29.0			GW	GRAVEL with sand, fine to coarse grained sand and gravel, subangular (SA) to to subrounded (SR) gravel (TO 3" diam.), medium brown, damp, slight odor (petroleum?); fill material (CUTTINGS)
4		16/17/19	6.0	3'			color change at ~3½' to black, gravel content and angularity increase and coarseness decrease, slight petrol.? odor
MW1-5' 5				4'		SP	SAND, fine grained, light brown, damp, low plasticity, dense (POSS FILL)
		15/14/23	2.6	6'		SP	Sandy CLAY, olive gray, damp, soft-med stiff, red-brown oxidation stains
7		9/11/14	3.0				SAND, fine grained, light brown, damp-moist, dense, shell fragments
8½		12/12/14	8.8	1200			Same, medium dense (7-8½')
MW1-9½' 10				1245			Color change to gray @ ~8¾', no shell fragments present
							Wet at ~9¾', pull augers for 45 min. for water recharge, DTW = 10.0'
						SP	
15		5/6/8	0.0				Same, olive-gray, wet, increased shell fragment content
				19.5			
20		1/1/1	0.0			CL	SILTY CLAY, dark gray to black, moist, medium plasticity, very soft to soft, shell fragments present
					20.5'	TD	=20.5'
25							
30							

CASING DIAMETER 2" CASING LENGTH 19.5' FROM 0 TO 19.5'

SCREEN SIZE 0.020" SCREEN LENGTH 13.5' FROM 6' TO 19.5'

SAND TYPE #3 Lonestar (Envirosand) FROM 4' TO 19.5'

BENTONITE TYPE 3/8" chips FROM 19.5 TO 20.5

CEMENT/GROUT Neat Cement (Portland) Grout FROM 0' TO 3'

Well Box: Morrison Bugue (Indust. Traffic rated)

3.0' to 4.0'+

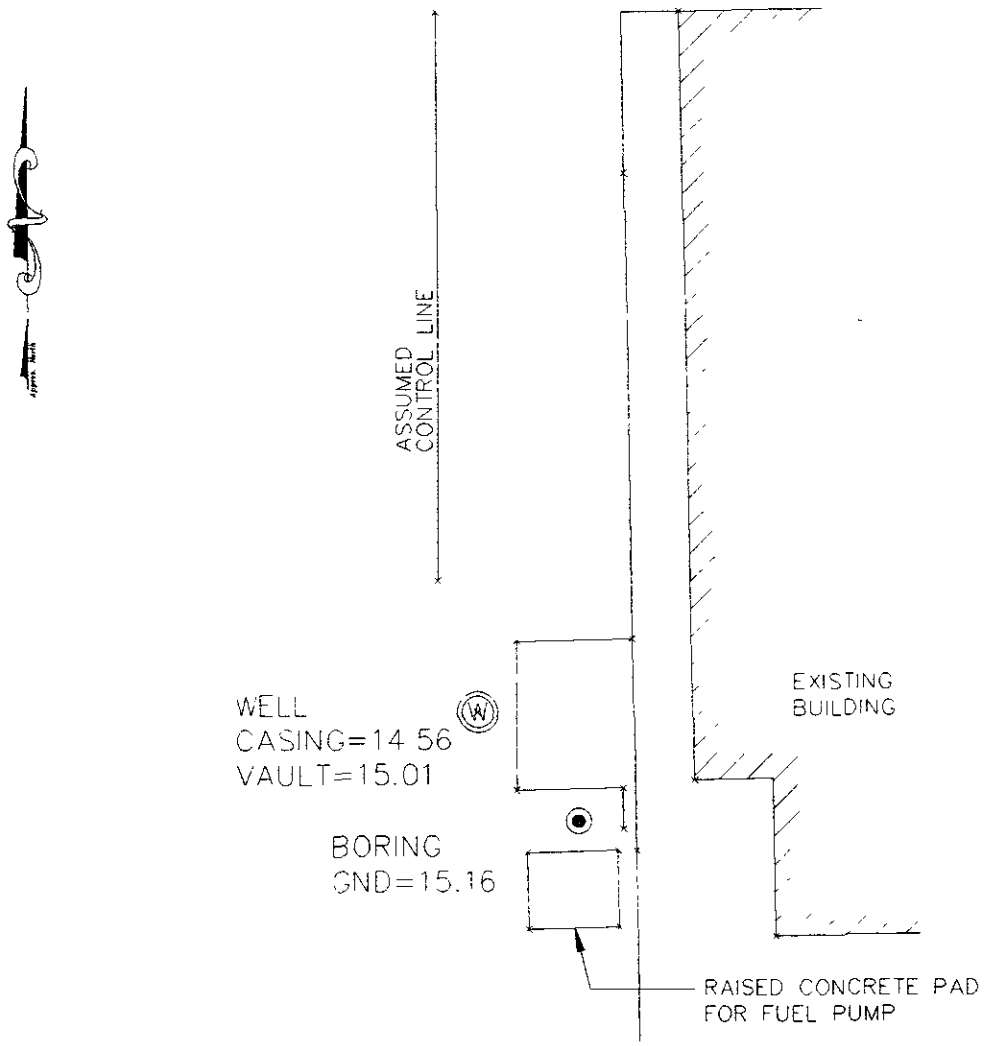
ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

Background PID monitoring = 0.0-1.0 ppm

ATTACHMENT D

COPY OF MAP FROM PLS SURVEYS, INC.



BENCHMARK
A BENCHMARK ON THE BART BENT
PROVIDED BY THE PORT OF OAKLAND.
EL=17 20 PORT OF OAKLAND DATUM,

PLS SURVEYS, INC.
27A Embarcadero Cove
Oakland, CA 94606
510.261.0900
Fax 510 261 3303

TRANSBAY TERMINAL
707 FERRY STREET
OAKLAND, CA

SCALE	1" = 30'
DATE	04-08-97
BY	JMB
JOB NO.	97011

ATTACHMENT E

COPY OF MONITORING WELL DEVELOPMENT FORM AND PURGE AND SAMPLE FORM

DEVELOPMENT

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Port of Oakland - Berth 25 PROJECT NO.: 95-113.27

WELL NO.: MW-1 TESTED BY: J. Schollard + SES DATE: 4/8/97

Measuring Point Description: black mark (N. side, TOC) Static Water Level (ft.): 9.51

Total Well Depth (ft.): 19.54 Sample Method: 2" disposable bailer

Water Level Measurement Method: Solinst DTW probe Time Sampled: 1600 (QC-1 @ 1605)

Purge Method: 2" disposable bailer Sample Depth (ft.): (100% recovery) 7.52 (DTWF)

Time Start Purge: 1433 Field Filtering: NA

Time End Purge: 1528 Field Preservation: Blue Ice

Comments: No free product observed (initial subjective); Development using 2" surge block, ~20 strokes of swabbing for every (before) 3 casing purge volume (4.8 gal.); QC-1 (duplicate)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal) 1.6 (3 vols = 4.8)
	19.54		9.51		10.03		0.16	0.64	1.44		

Time	1430		1437		1502		1516		1528		
Volume Purged (gals)	0		5		5		5		5		
Cumulative Volume Purged (gals)	Initial		5		10		15		20		
Cumulative Number of Casing Volumes	Readings	Swab (~20 strokes)	3.13 ~~1.04~~	Swab (~20 strokes)	6.25 ~~2.08~~	Swab (~20 strokes)	9.38 ~~3.12~~	Swab (~20 strokes)	12.5 ~~4.16~~ 5x		
Purge Rate (gpm)	↓		NA		→		→		→		
Temperature (F°) or (C°)	68.3		65.0		64.0		68.3		67.5		
pH	7.05		6.55		6.41		6.45		6.42		
Specific Conductivity (µmhos/cm) X1000	5.43		4.50		5.24		4.67		4.05		
Dissolved Oxygen (mg/L)	NA		→		→		→		→		
Turbidity/Color (NTU)	none/clear		high/olive gray		high/olive grey		high/olive gray		mod./light gray		
Odor	None		None		None		None		None		
Dewatered?	No		No		No		No		No		
Fines?	No		some		some		some - trace		trace		

CHECKED BY: Jai Schollard DATE: 4/8/97

ITSI

ATTACHMENT F

COPIES OF LABORATORY REPORTS, CHROMATOGRAMS AND CHAIN-OF-CUSTODY FORM

Pace Analytical Services, Inc
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

April 10, 1997

Mr. Jim Schollard
Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

RE: Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Dear Mr. Schollard:

Enclosed are the results of analyses for sample(s) received on April 3, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Project Manager

CA ELAP Certificate Number 2059

Enclosures

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel 707-792-1865
Fax 707-792-0342

Pace Analytical

DATE: 04/10/97
PAGE: 1

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

Pace Sample No: 70936018 Date Collected: 04/02/97
Client Sample ID: SB1-5' Date Received: 04/03/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Soil								
Gasoline	ND	ug/kg	200	04/09/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	04/09/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	98	%		04/09/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	92	%		04/09/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/kg	5	04/09/97	EPA 8015M w/ SG	AMH	11-84-7	1
n-Pentacosane (S)	73	%		04/09/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/04/97				

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Petaluma, CA 94954
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Fax: 707-792-0342

Pace Analytical

Pace Project Number 708070
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70936026 Date Collected: 04/02/97
Client Sample ID: SB1-8' Date Received: 04/03/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Soil								
Gasoline	1400	ug/kg	200	04/09/97	EPA 8015M/8020M	ADS		1
Benzene	15	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	14	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	2.1	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	2.1	ug/kg	2	04/09/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	105	%		04/09/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	109	%		04/09/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	1600	mg/kg	500	04/08/97	EPA 8015M w/ SG	AMH	11-84-7	1,2,3
n-Pentacosane (S)	0	%		04/08/97	EPA 8015M w/ SG	AMH	629-99-2	4
Date Extracted				04/04/97				

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Fax 707-792-0342

Pace Analytical

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70936034 Date Collected: 04/02/97
Client Sample ID: SB1-10.5' Date Received: 04/03/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Soil								
Gasoline	ND	ug/kg	200	04/09/97	EPA 8015M/8020M	ADS		
Benzene	10	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	3.9	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	1.7	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	04/09/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	104	%		04/09/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	92	%		04/09/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/kg	5	04/08/97	EPA 8015M w/ SG	AMH	11-84-7	
n-Pentacosane (S)	65	%		04/08/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/04/97				

REPORT OF LABORATORY ANALYSIS

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Petaluma, CA 94954
Tel. 707-792-1865
Fax. 707-792-0342

Pace Analytical

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70936042 Date Collected: 04/02/97
Client Sample ID: MW1-5' Date Received: 04/03/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Soil								
Gasoline	ND	ug/kg	200	04/09/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	71-43 2	
Toluene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	04/09/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	100	%		04/09/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	75	%		04/09/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	120	mg/kg	50	04/09/97	EPA 8015M w/ SG	AMH	11-84-7	1,2
n-Pentacosane (S)	35	%		04/09/97	EPA 8015M w/ SG	AMH	629 99-2	
Date Extracted				04/04/97				

REPORT OF LABORATORY ANALYSIS

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Petaluma, CA 94954
Tel: 707-792-1865
Fax 707-792-0342

Pace Analytical

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70936059 Date Collected: 04/02/97
Client Sample ID: MW1-9.5' Date Received: 04/03/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Soil								
Gasoline	ND	ug/kg	200	04/09/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/kg	1	04/09/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/kg	2	04/09/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	101	%		04/09/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	96	%		04/09/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/kg	5	04/08/97	EPA 8015M w/ SG	AMH	11-84-7	
n-Pentacosane (S)	82	%		04/08/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/04/97				

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel. 707-792-1865
Fax 707-792-0342

Pace Analytical

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	High boiling point hydrocarbons are present in sample.
[2]	Hydrocarbons present do not match profile of laboratory standard.
[3]	The Hydrocarbon pattern present looks like Hydraulic fluid.
[4]	Spike and/or surrogate recoveries could not be calculated due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 22768
QC Batch Method: EPA 8015M/8020M
Analysis Method: EPA 8015M/8020M
Analysis Description: GAS/BTEX, Soil
Associated Pace Samples: 70936018 70936026 70936034 70936042 70936059

METHOD BLANK: 70939285
Associated Pace Samples: 70936018 70936026 70936034 70936042 70936059

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/kg	ND	200	
Benzene	ug/kg	ND	1	
Toluene	ug/kg	ND	1	
Ethylbenzene	ug/kg	ND	1	
Xylene (Total)	ug/kg	ND	2	
a,a,a-Trifluorotoluene (S)	%	99		
4-Bromofluorobenzene (S)	%	98		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70934997 70935002

Parameter	Units	70931688	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/kg	0	1000	551.5	55.2	516.7	51.7	7	

LABORATORY CONTROL SAMPLE & LCSD: 70934443 70934450

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/kg	1000	943.0	94.3	918.8	91.9	3	

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QUALITY CONTROL DATA

DATE: 04/10/97

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 22822
QC Batch Method: CA LUFT
Analysis Method: EPA 8015M w/ SG
Analysis Description: TPH by 8015M w/ silica gel
Associated Pace Samples: 70936018 70936026 70936034 70936042 70936059

METHOD BLANK: 70936414
Associated Pace Samples: 70936018 70936026 70936034 70936042 70936059

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/kg	ND	5	
n-Pentacosane (S)	%	79		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70936422 70936430

Parameter	Units	70936018	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	4.890	33.33	24.36	58.4	30.40	76.5	27	
n-Pentacosane (S)					81		85		

LABORATORY CONTROL SAMPLE & LCSD: 70936448 70936455

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/kg	33.33	18.97	56.9	14.74	44.2	25	
n-Pentacosane (S)				86		73		

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Pace Project Number: 708070
Client Project ID: Port of Oakland/Berth 25

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

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INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI
2855 Mitchell Drive, Suite 118
Walnut Creek, California 94598
(510) 256-8898 (Tel). (510) 256-8998 (Fax)

708070

CHAIN OF CUSTODY

PROJECT NAME: Port of Oakland - Berth 25
PROJECT NUMBER: 95-113.27
SITE LOCATION: 707 Ferry St., Oakland, CA

DATE: 4/2/97
PAGE: 1 of 1

PACE Analytical
Petaluma, CA
Work Order # 202634

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	TPH as Gas/BTEX - 8015/8020	TPH as Diesel - 8015	TPH as Diesel - 8015 (w/ Silica Gel Cleanup)	TEPH - 8015	TEPH-8015 m (w/ Silica Gel Cleanup)	TRPH - 418.1	Oil and Grease - 5520	Purgeable Halocarbons -601/8010	VOCs -624/8240	SVOCs -625/8270	LUFT Metals (Cd, Cr, Ni, Pb, Zn)	CAM 17 Metals	Tot. Pb 6010	SPECIAL INSTRUCTIONS/COMMENTS
SB1-5'	5'	4/2/97	1015	1	Brass sleeve	S	X		X				70936018						X	Please HOLD pending instructs.
SB1-8'	8'	↓	1030	↓	↓	↓	X		X				70936026						X	
SB1-10.5'	10.5'	↓	1045	↓	↓	↓	X		X				70936034						X	Please HOLD pending instructs.
MW1-5'	5'	↓	1130	↓	↓	↓	X		X				70936042						X	
MW1-9.5'	9.5	↓	1200	↓	↓	↓	X		X				70936059						X	

Not used (SS) 4/2/97

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐
COOLER TEMPERATURE 2 °C
green

TOTAL NUMBER OF CONTAINERS
TOTAL TESTS

SAMPLED BY: Jim Schollard
SIGNATURE: [signature]

SPECIAL INSTRUCTIONS/COMMENTS: Please HOLD above referenced samples, pending telecom. instructions. Please provide Chromatograms with analytical results.

RELINQUISHED BY: Jim Schollard [signature]
Printed Name Signature
ITSI 4/2/97 1803
Company Date and Time

RECEIVED BY: [signature]
Printed Name Signature
4/2/97 1803
Company Date and Time

RELINQUISHED BY: [signature]
Printed Name Signature
4-2-97 - 1830 LAB
Company Date and Time

RECEIVED BY: Cold Storage
Printed Name Signature
Company Date and Time

RELINQUISHED BY: Cold Storage
Printed Name Signature
Company Date and Time

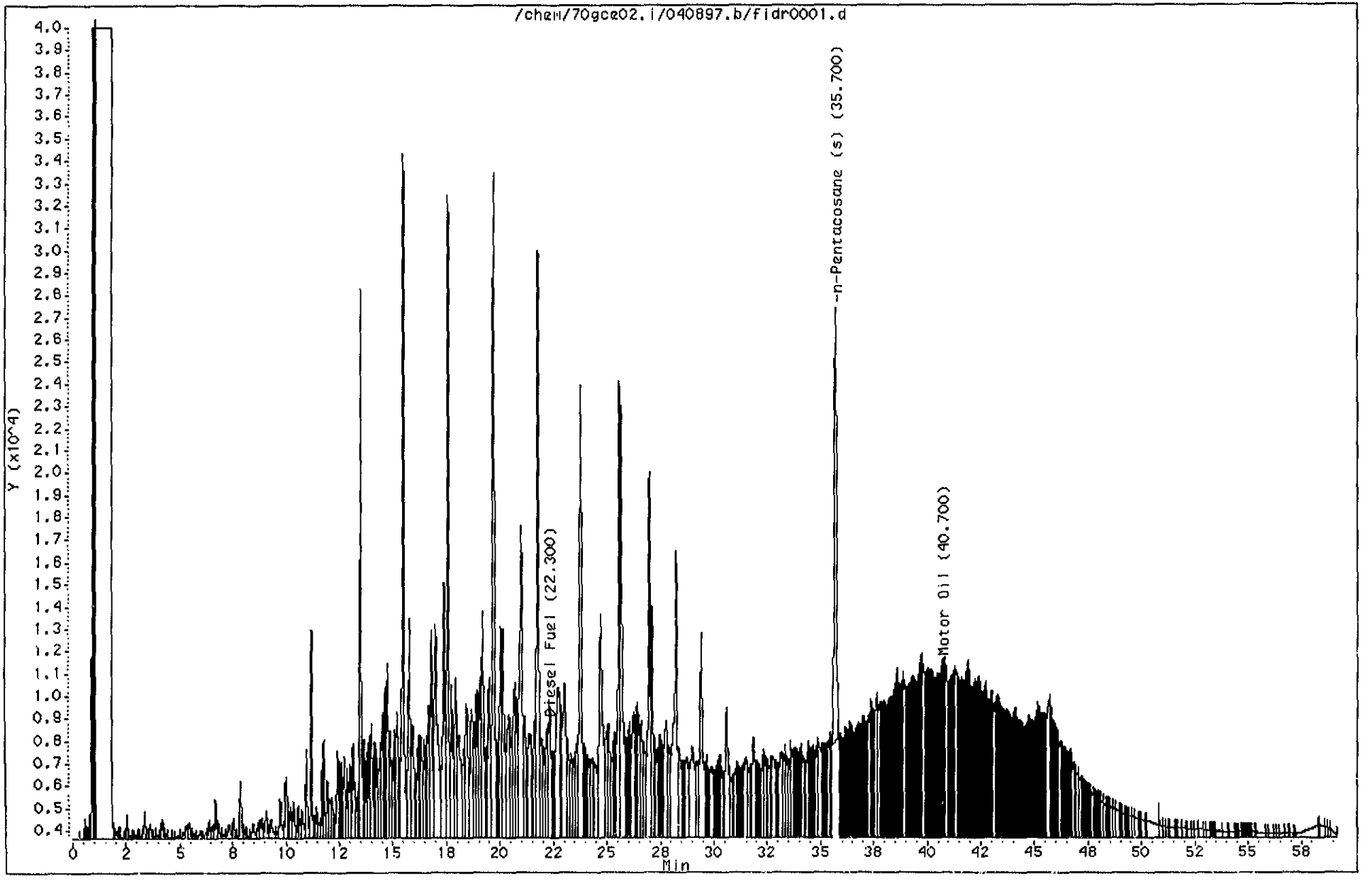
RECEIVED BY: GAIL HORRMANN
Printed Name Signature
PASI 4/3/97 9:00
Company Date and Time

SEND RESULTS TO: Jim Schollard, 1330 Broadway, Suite 1625, Oakland, CA 94610 FAX 510/286-8889

Data File: /chem/70gce02.i/040897.b/fidr0001.d
Date : 08-APR-1997 08:56
Client ID:
Lab Sample ID: Dcal-97D

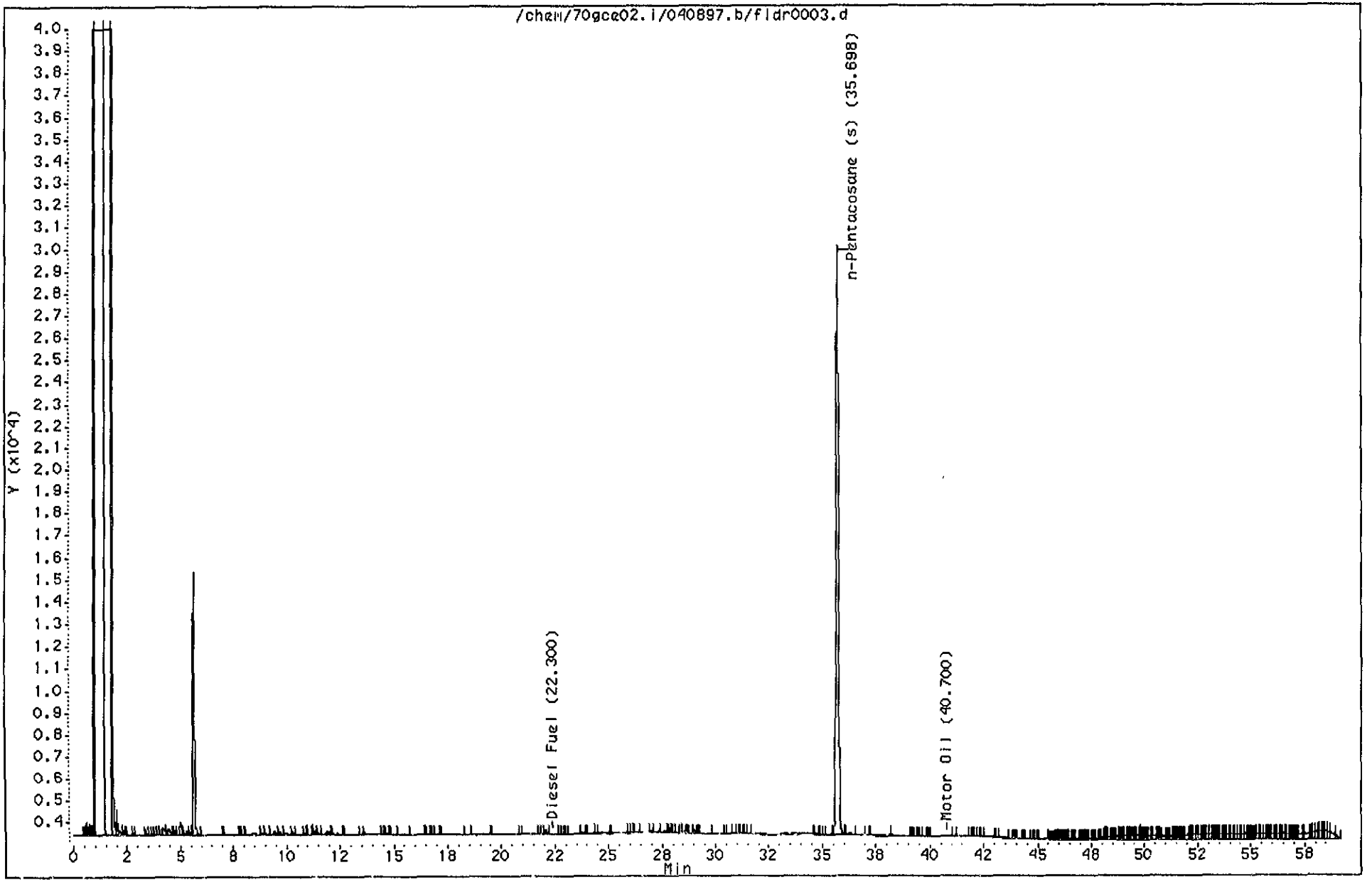
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: Dcal-97D,,,NONE,,2,4,,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



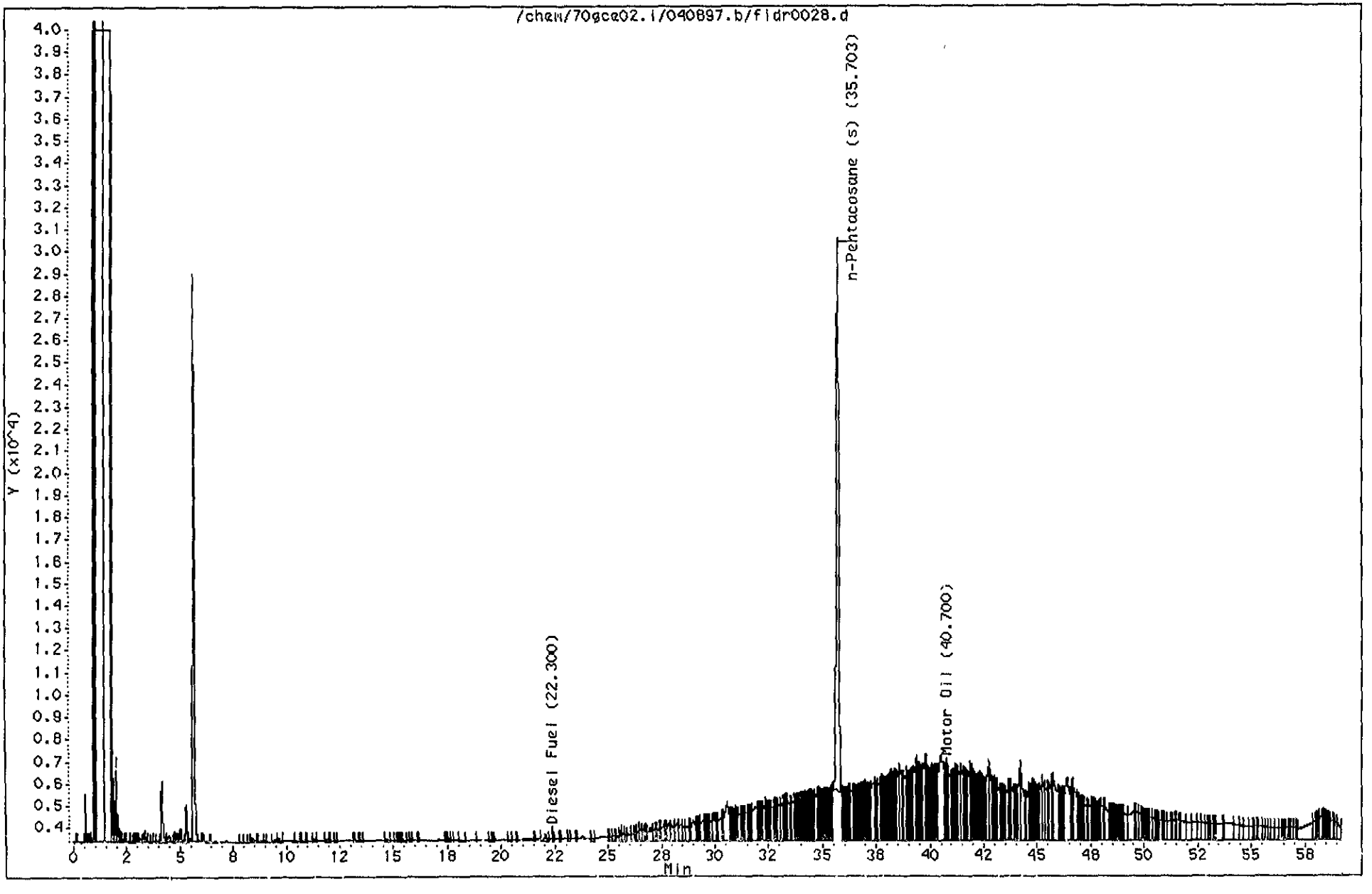
Data File: /chem/70gce02.i/040897.b/fidr0003.d
Date : 08-APR-1997 11:28
Client ID: BLK01
Lab Sample ID: 70936414
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936414,,1,22822,2,3,,BLANK,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



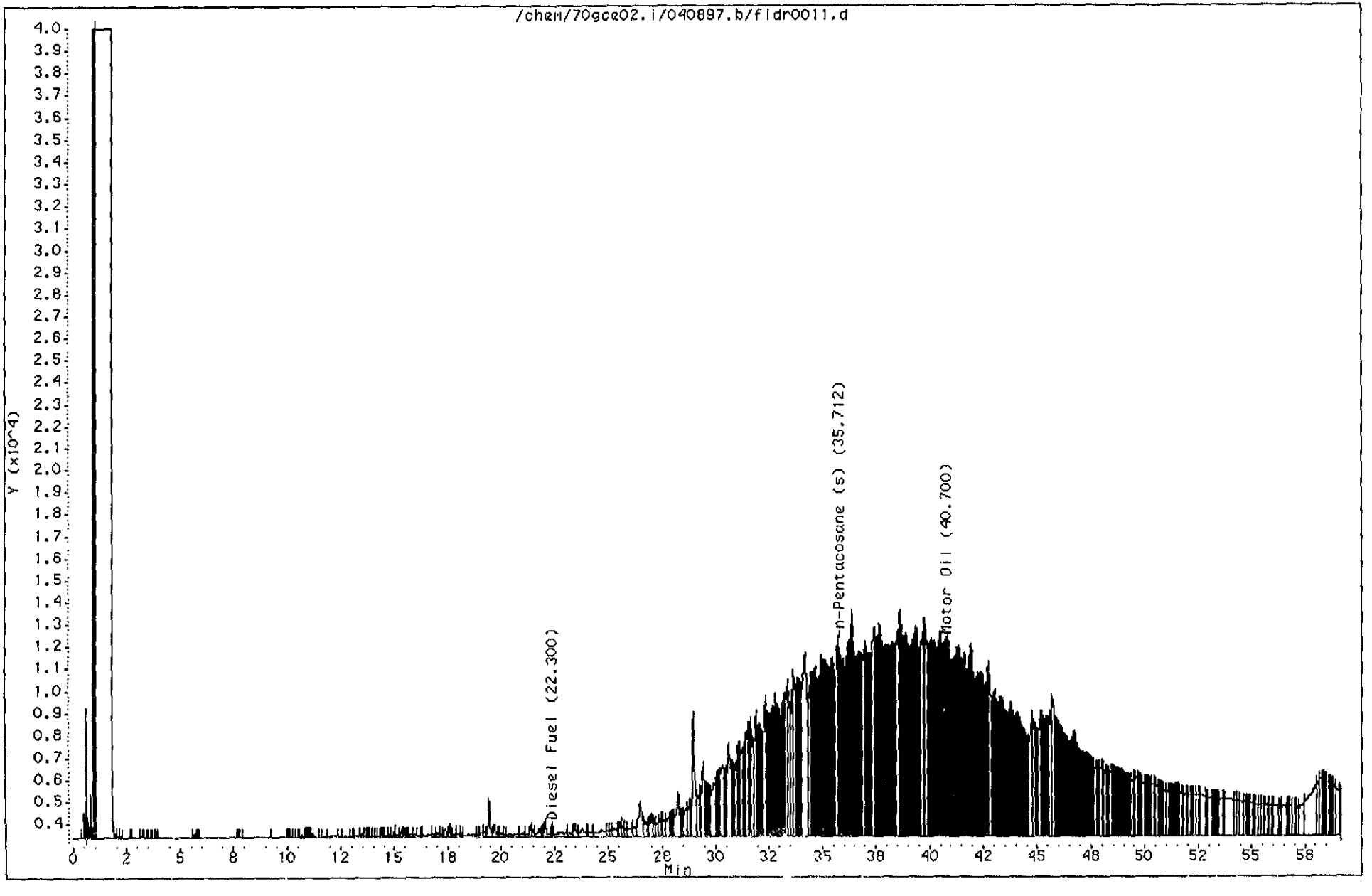
Data File: /chem/70gce02.i/040897.b/fidr0028.d
Date : 09-APR-1997 15:17
Client ID: SB1-5'
Lab Sample ID: 70936018
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936018,,1,22822,2,0,,SAMPL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



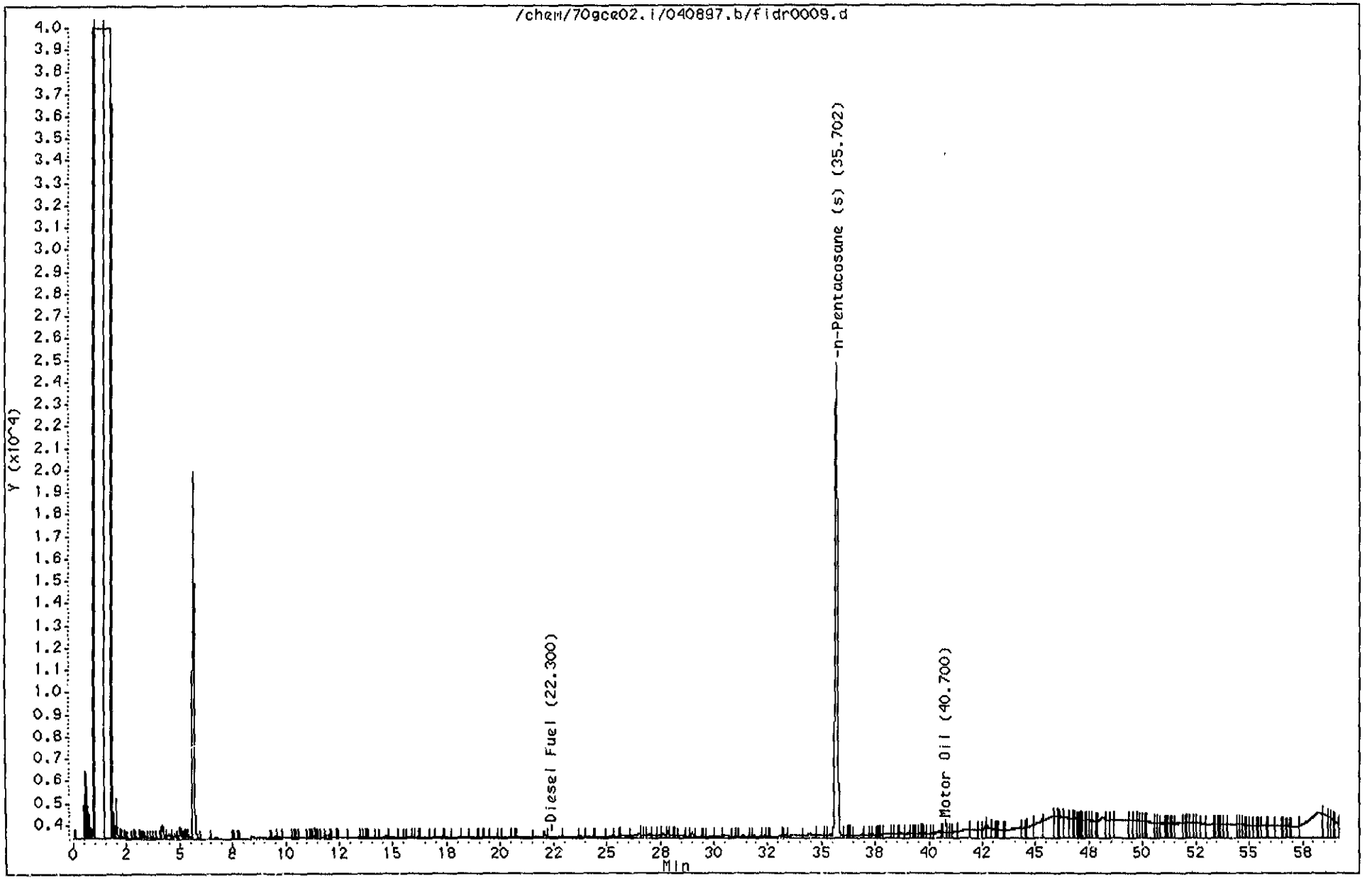
Data File: /chem/70gce02.i/040897.b/fidr0011.d
Date : 08-APR-1997 20:20
Client ID: SB1-8'
Lab Sample ID: 70936026
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936026,,10,22822,2,0,,SAMPL,,,dmaf.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



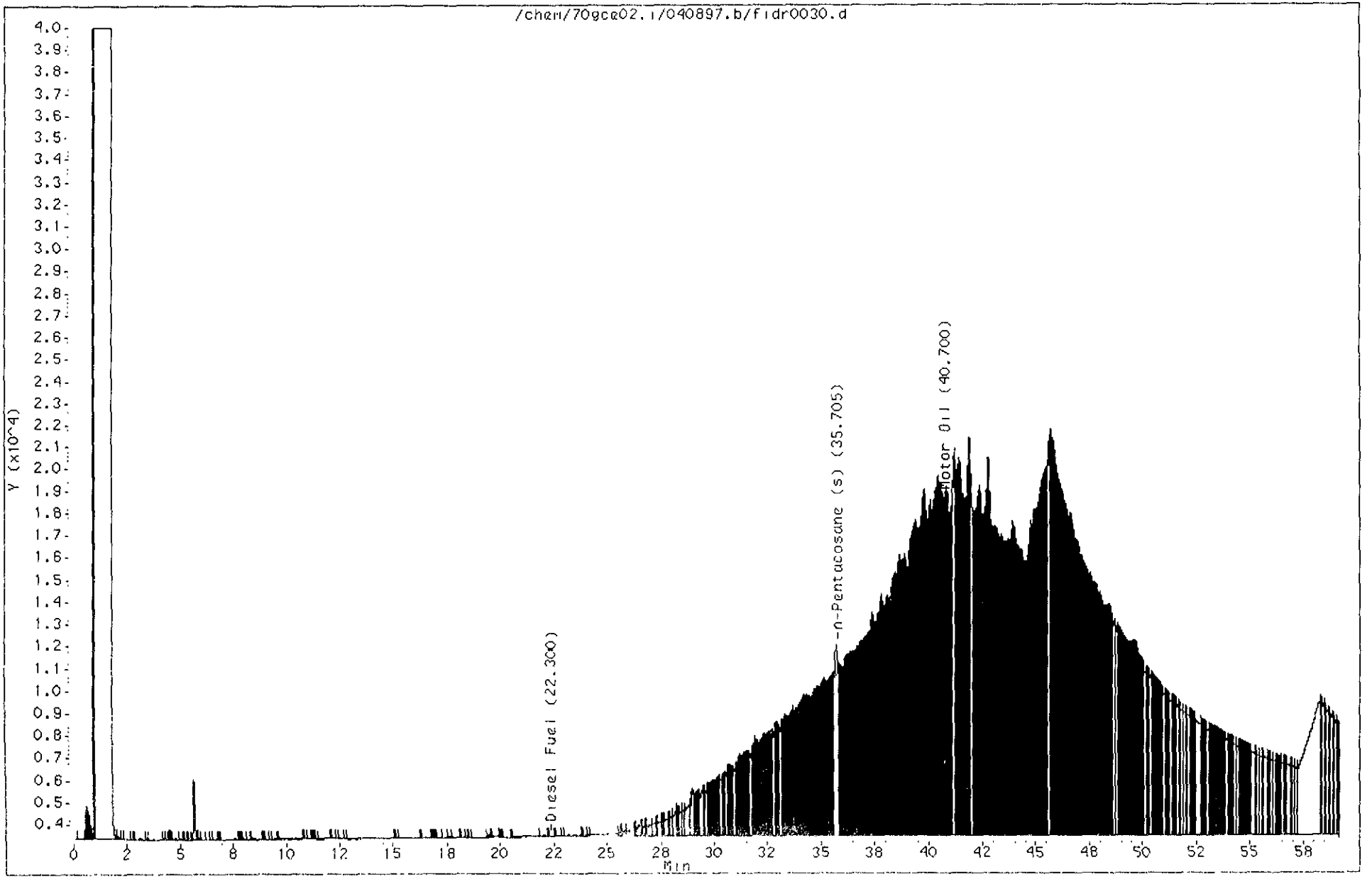
Data File: /chem/70gce02.i/040897.b/fidr0009.d
Date : 08-APR-1997 18:06
Client ID: SB1-10.5'
Lab Sample ID: 70936034
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936034,,1,22822,2,0,,SAMPL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



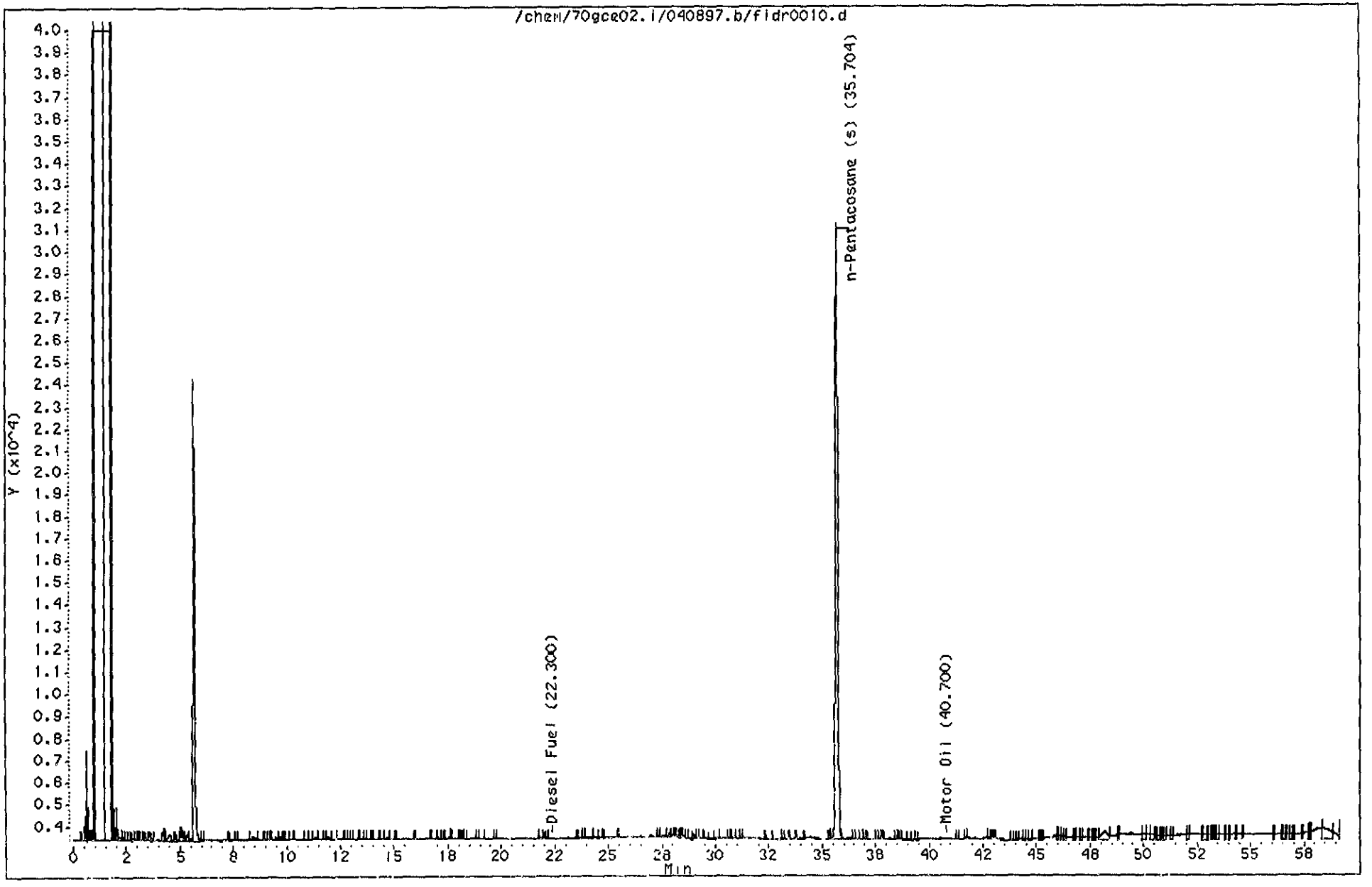
Data File: /chem/70gce02.i/040897.b/fidr0030.d
Date : 09-APR-1997 17:31
Client ID: MW1-5'
Lab Sample ID: 70936042
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936042,,1,22822,2,0,,SAMPL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



Data File: /chem/70gce02.i/040897.b/fidr0010.d
Date : 08-APR-1997 19:13
Client ID: MW1-9.5'
Lab Sample ID: 70936059
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 70936059,,1,22822,2,0,,SAMPL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



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Pace Analytical Services, Inc
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April 22, 1997

Mr. Jim Schollard
Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

RE: Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Dear Mr. Schollard:

Enclosed are the results of analyses for sample(s) received on April 9, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ronald M. Chew

Ron Chew
Project Manager

CA ELAP Certificate Number 2059

Enclosures

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

DATE: 04/22/97

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

Pace Sample No: 70941232 Date Collected: 04/08/97
Client Sample ID: TRIP BLANK Date Received: 04/09/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	04/16/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/16/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	107	%		04/16/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	106	%		04/16/97	EPA 8015M/8020M	ADS	460-00-4	

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Pace Analytical

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941240 Date Collected: 04/08/97
Client Sample ID: MW-1 Date Received: 04/09/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, Furnace								
Lead, Dissolved	ND	ug/L	5	04/21/97	EPA 7421	LMD	7439-92-1	
Date Digested				04/11/97				
Wet Chemistry								
Total Dissolved Solids								
Total Dissolved Solids	5560	mg/L	5	04/10/97	EPA 160.1	RVC		
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	04/16/97	EPA 8015M/8020M	ADS		1
Benzene	1.9	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/16/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	120	%		04/16/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	116	%		04/16/97	EPA 8015M/8020M	ADS	460 00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/L	0.05	04/15/97	EPA 8015M w/ SG	AMH	11-84-7	
n-Pentacosane (S)	57	%		04/15/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/11/97				

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Pace Analytical

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941257 Date Collected: 04/08/97
Client Sample ID: QC-1 Date Received: 04/09/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	04/16/97	EPA 8015M/8020M	ADS		1
Benzene	1.7	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/16/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/16/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	117	%		04/16/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	114	%		04/16/97	EPA 8015M/8020M	ADS	460-00-4	

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Pace Analytical

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Single analyte peak(s) are present.

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QUALITY CONTROL DATA

DATE: 04/22/97

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 22966
QC Batch Method: EPA 160.1
Analysis Method: EPA 160.1
Analysis Description: Total Dissolved Solids
Associated Pace Samples: 70941240

METHOD BLANK: 70941695
Associated Pace Samples:
70941240

Parameter	Units	Method Blank Result	PRL	Footnotes
Total Dissolved Solids	mg/L	ND	5	

SAMPLE DUPLICATE: 70941703

Parameter	Units	70941240	Dup. Result	RPD	Footnotes
Total Dissolved Solids	mg/L	5560	5750	3	

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QUALITY CONTROL DATA

DATE: 04/22/97

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 22972
QC Batch Method: EPA 3020
Analysis Method: EPA 7421
Analysis Description: Dissolved Lead, Furnace
Associated Pace Samples: 70941240

METHOD BLANK: 70941893
Associated Pace Samples:
70941240

Parameter	Units	Method Blank Result	PRL	Footnotes
Lead, Dissolved	ug/L	ND	5	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70941927 70941935

Parameter	Units	70940226	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Lead, Dissolved	ug/L	44.09	40	76.42	80.8	74.54	76.1	6	

LABORATORY CONTROL SAMPLE & LCSD: 70941901 70941919

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Lead, Dissolved	ug/L	40	41.42	104	40.81	102	2	

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QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 22987
Analysis Method: EPA 8015M w/ SG
Associated Pace Samples: 70941240

QC Batch Method: EPA 3520
Analysis Description: TPH by 8015M w/ silica gel

METHOD BLANK: 70942750
Associated Pace Samples:
70941240

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/L	ND	0.05	
n-Pentacosane (S)	%	96		

LABORATORY CONTROL SAMPLE & LCSD: 70942768 70942776

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/L	1.0	0.3958	39.6	0.4482	44.8	12	
n-Pentacosane (S)				70		78		

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Pace Analytical

QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 23043
QC Batch Method: EPA 8015M/8020M
Analysis Method: EPA 8015M/8020M
Analysis Description: GAS/BTEX, Water
Associated Pace Samples: 70941232 70941240 70941257

METHOD BLANK: 70945134
Associated Pace Samples:
70941232 70941240 70941257

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/L	ND	50	
Benzene	ug/L	ND	0.5	
Toluene	ug/L	ND	0.5	
Ethylbenzene	ug/L	ND	0.5	
Xylene (Total)	ug/L	ND	1	
a,a,a-Trifluorotoluene (S)	%	108		
4-Bromofluorobenzene (S)	%	107		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70945662 70945670

Parameter	Units	70941240	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/L	1.947	100	123.3	121	118.3	116	4	1
Toluene	ug/L	0.2480	100	121.1	121	116.2	116	4	
Ethylbenzene	ug/L	0.1879	100	119.0	119	114.6	114	4	
Xylene (Total)	ug/L	0.4645	300	359.1	120	345.8	115	4	1
a,a,a-Trifluorotoluene (S)					118		115		
4-Bromofluorobenzene (S)					121		114		

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services Inc
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax 707-792-0342

Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

LABORATORY CONTROL SAMPLE & LCSD: 70945167 70945175

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/L	100	107.2	107	111.4	111	4	
Toluene	ug/L	100	111.7	112	111.6	112	0	
Ethylbenzene	ug/L	100	110.3	110	109.6	110	0	
Xylene (Total)	ug/L	300	333.8	111	332.8	111	0	
a,a,a-Trifluorotoluene (S)				111		113		
4-Bromofluorobenzene (S)				117		110		

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Pace Project Number: 708118
Client Project ID: Port of Oakland/Berth 25

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	The spike recovery was outside acceptance limits for the MS and /or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

REPORT OF LABORATORY ANALYSIS

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INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI
2855 Mitchell Drive, Suite 118
Walnut Creek, California 94598
(510) 256-8898 (Tel), (510) 256-8998 (Fax)

708118

CHAIN OF CUSTODY

PROJECT NAME: Port of Oakland - Berth 25
PROJECT NUMBER: 95-113.27
SITE LOCATION: 707 Ferry St., Oakland, CA

DATE: 4/9/97
PAGE: 1 of 1

PACE - Petaluma, CA

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH as Gas/BTEX - 8015/8020	TPH as Diesel - 8015	TPH as Diesel - 8015 (w/ Silica Gel Cleanup)	TEPH - 8015	TEPH-8015 m (w/ Silica Gel Cleanup)	TRPH - 418.1	Oil and Grease - 5520	Purgeable Halocarbons - 601/8010	VOCs - 624/ 8240	SVOCs - 625/8270	~~LUFT Metals~~ Total (Cd, Cr, Ni, Pb, Zn) Lead	CAM 17 Metals	TDS	SPECIAL INSTRUCTIONS/COMMENTS
Trip Blank	NA	4/8/97	NA	2	Voas	W	X						7094		1232					
MW-1			1600	3	Voas	W	X						7094		1240					
				2	1LA	W			X											
				1	500ml	W											X			Lab Filter + Preserve
				1	250ml	W													X	
QC-1			—	3	Voas	W	X						7094	1257						
													Not Used (JS) 4/8/97							
TOTAL NUMBER OF CONTAINERS				12	TOTAL TESTS		3		1								1		1	

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ N/A
COOLER TEMPERATURE ____ °C

SAMPLED BY: Jim Scholland
SIGNATURE: Jim Scholland

SPECIAL INSTRUCTIONS/COMMENTS: Please provide chromatograms with analytical results + 1 laboratory filter/preserve the TOTAL lead sample

RELINQUISHED BY: Jim Scholland / Jim Scholland
Printed Name / Signature
ITSI 4/9/97 @ 1509
Company / Date and Time

RECEIVED BY: Vito Lucchesi / Vito Lucchesi
Printed Name / Signature
Pace 4/9/97 @ 15:40
Company / Date and Time

RELINQUISHED BY: Vito Lucchesi / Vito Lucchesi
Printed Name / Signature
Pace 4/9/97 17:15
Company / Date and Time

RECEIVED BY: GAIL HOFFMANN / Gail Hoffmann
Printed Name / Signature
PASI 4/9/97 17:15
Company / Date and Time

RELINQUISHED BY: _____ / _____
Printed Name / Signature
_____
Company / Date and Time

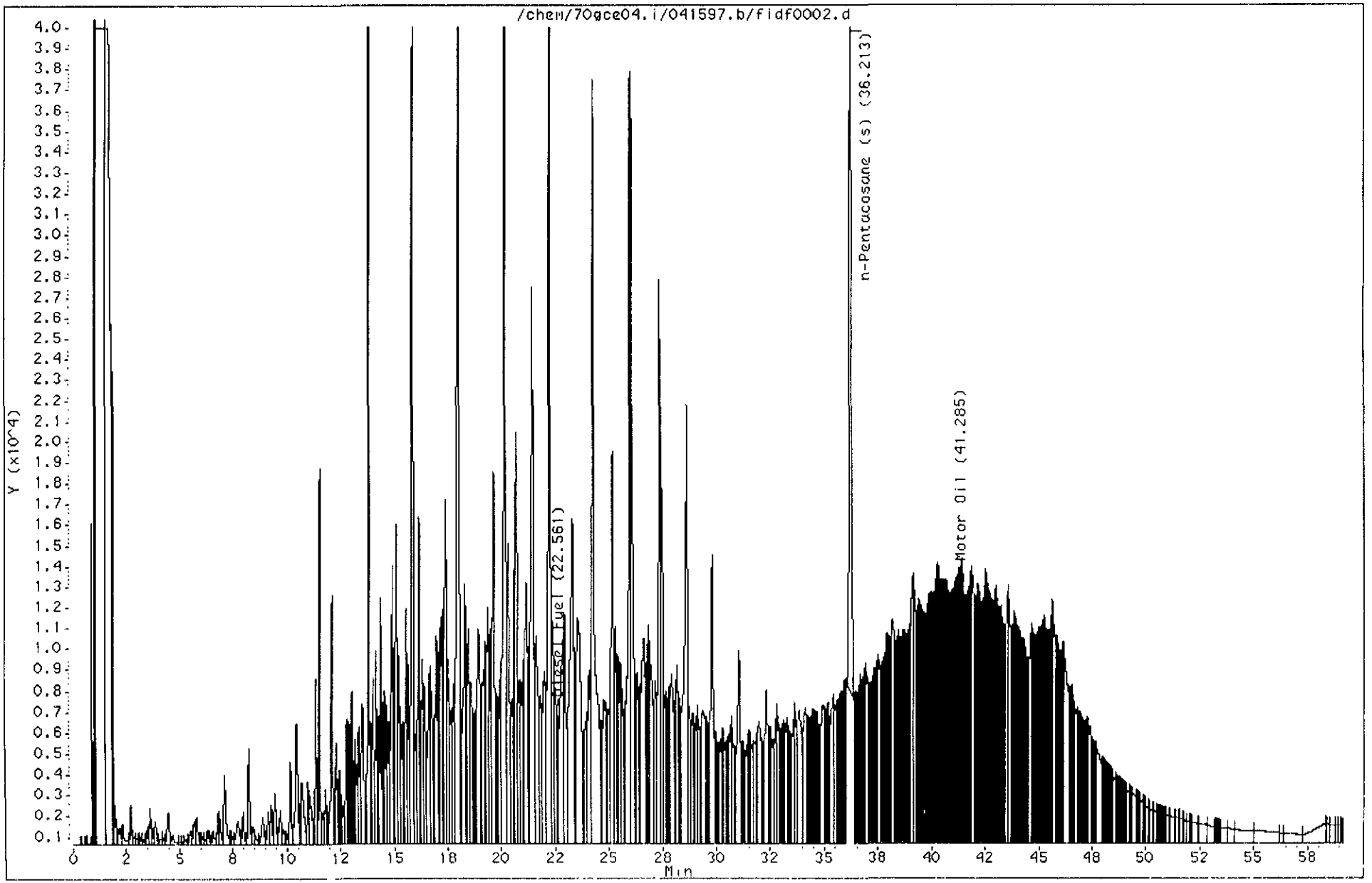
RECEIVED BY: _____ / _____
Printed Name / Signature
_____
Company / Date and Time

SEND RESULTS TO: Jim Scholland / ITSI @ 1330 Broadway, Ste. 1625, Oakland, CA 94612

Data File: /chem/70gce04.i/041597.b/fidf0002.d
Date : 15-APR-1997 11:58
Client ID:
Lab Sample ID: DCAL97D

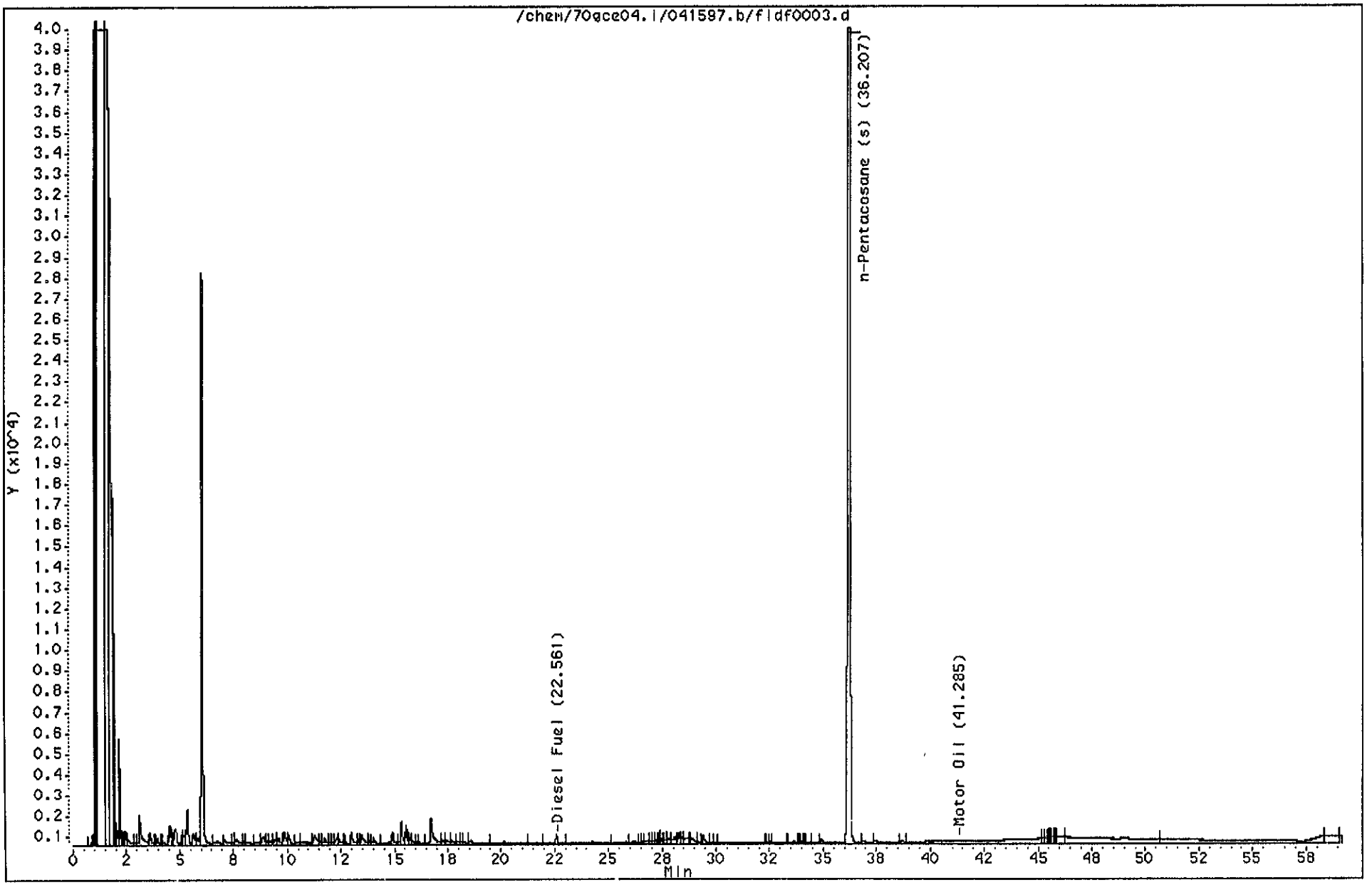
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
Misc Info: DCAL97D,,,,,2,4,,,,dmof.sub,dmor.sub,
Operator: AMH
Column diameter: 0.53



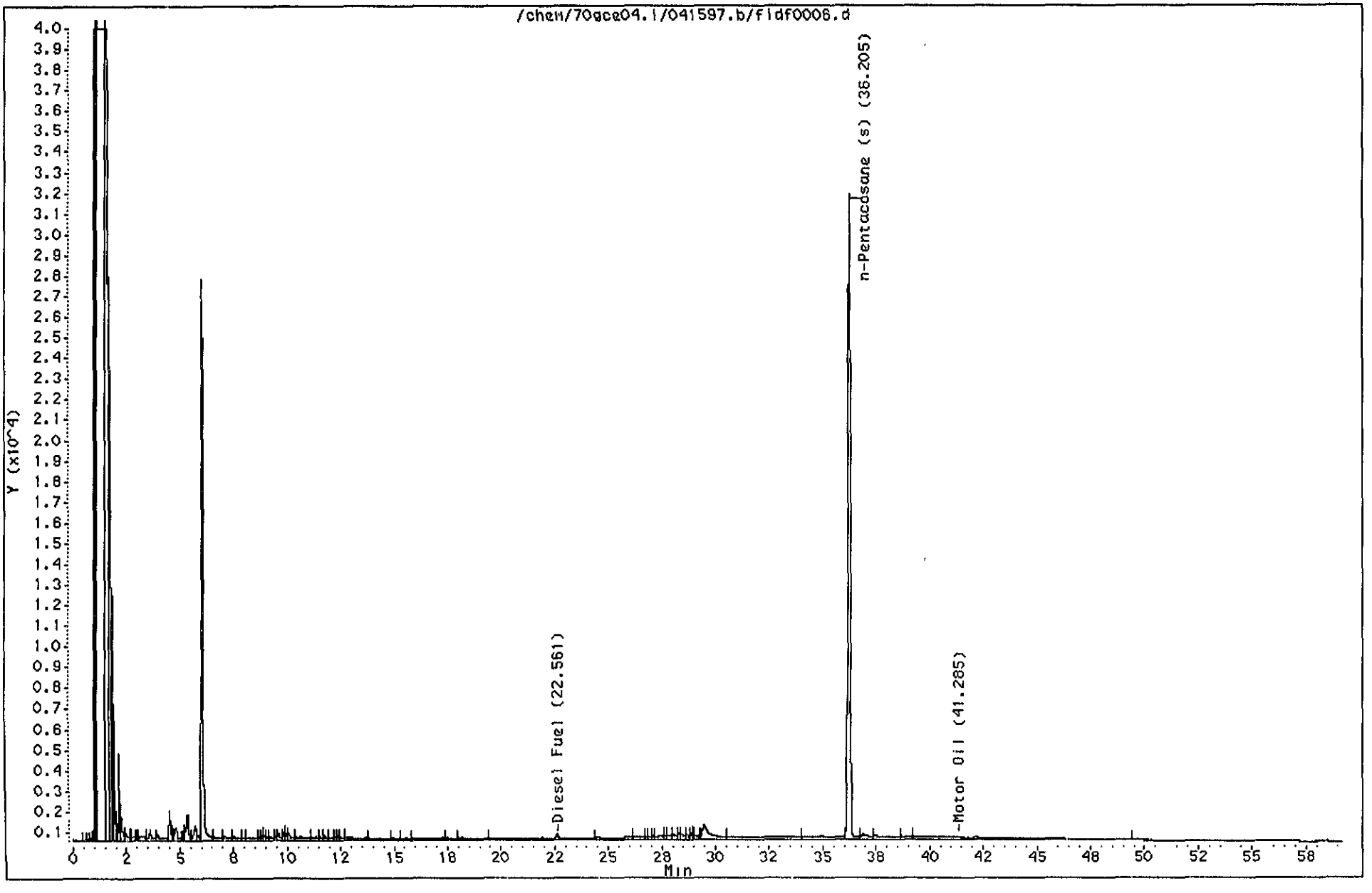
Data File: /chem/70gce04.i/041597.b/fidf0003.d
Date : 15-APR-1997 13:15
Client ID: BLK01
Lab Sample ID: 70942750
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
Misc Info: 70942750,,1,22987,1,3,,BLANK,,,dmof.sub,dmor.sub,
Operator: AMH
Column diameter: 0.53



Data File: /chem/70gce04.i/041597.b/fidf0006.d
Date : 15-APR-1997 16:31
Client ID: MW-1
Lab Sample ID: 70941240
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
Misc Info: 70941240,,1,22987,1,0,,SMPL,,,dmof.sub,dmor.sub,
Operator: AMH
Column diameter: 0.53



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Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

April 25, 1997

Mr. Jim Schollard
Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

RE: Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Dear Mr. Schollard:

Enclosed are the results of analyses for sample(s) received on April 10, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Project Manager

CA ELAP Certificate Number 2059

Enclosures

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc
1455 McDowell Blvd North, Suite D
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Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

DATE: 04/25/97
PAGE: 1

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

Pace Sample No: 70941513 Date Collected: 04/02/97
Client Sample ID: SB 1-5' Date Received: 04/10/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	7.48	mg/kg	4.9	04/24/97	EPA 6010	ADMM	7439-92-1	
Date Digested				04/14/97				

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Fax 707-792-0342

Pace Analytical

Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941521 Date Collected: 04/02/97
Client Sample ID: SB 1-8' Date Received: 04/10/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	23.5	mg/kg	4.63	04/24/97	EPA 6010	ADMM	7439-92-1	
Date Digested				04/14/97				

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Petaluma, CA 94954
Tel 707-792-1865
Fax 707-792-0342

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Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941539 Date Collected: 04/02/97
Client Sample ID: SB 1-10.5' Date Received: 04/10/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	ND	mg/kg	4.76	04/24/97	EPA 6010	ADMM	7439-92-1	
Date Digested				*04/14/97*				

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Pace Analytical Services, Inc.
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Petaluma, CA 94954
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Fax: 707-792-0342

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Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941612 Date Collected: 04/02/97
Client Sample ID: MW 1-5' Date Received: 04/10/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	31.2	mg/kg	4.95	04/24/97	EPA 6010	ADMM	7439-92-1	
Date Digested				04/14/97				

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Petaluma, CA 94954
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Fax: 707-792-0342

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Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Pace Sample No: 70941620 Date Collected: 04/02/97
Client Sample ID: MW 1-9.5' Date Received: 04/10/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Metals, ICP								
Lead	ND	mg/kg	4.59	04/24/97	EPA 6010	ADMM	7439-92-1	
Date Digested				04/14/97				

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Pace Analytical

Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit

REPORT OF LABORATORY ANALYSIS

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1455 McDowell Blvd North, Suite D
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Tel: 707-792-1865
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Pace Analytical

QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 23006
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: Metals, ICP
Associated Pace Samples: 70941513 70941521 70941539 70941612 70941620

METHOD BLANK: 70943501
Associated Pace Samples:
70941513 70941521 70941539 70941612 70941620

Parameter	Units	Method Blank Result	PRL	Footnotes
Lead	mg/kg	ND	5	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70943659 70943667

Parameter	Units	70941513	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	7.483	93.46	100.6	99.6	135.6	133	29	

LABORATORY CONTROL SAMPLE & LCSD: 70943634 70943642

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	100	94.40	94.4	95.72	95.7	1	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 708123
Client Project ID: Port of Oakland/Berth 25

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Additional Analyses

369057

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Innovative Technical Solutions, Inc.
Address: ~~2855 Mitchell~~ 1330 Broadway, Suite 1625
Oakland, CA 94610
Phone: F=(510)286-8889

Report To: Jim Scholland.
Bill To: Port of Oakland.
P.O. # / Billing Reference: 202634
Project Name / No: Berth 25.

Pace Client No.:
Pace Project Manager: RMC.
Pace Project No: 708123
*Requested Due Date: 4/16/97.

Sampled By (PRINT):
Sampler Signature
Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	S sleeve	ANALYSES REQUEST: G/BTEX	Diesel w/S.G.	Total Pb	REMARKS
1	SB 1 - 5'	4/3/97	S	70941513	1					X	X			Sample AKA 70936018
2	SB 1 - 8'			70941521	1					X		X		70936026
3	SB 1 - 10.5'			70941539	1					X	X	X		70936034
4	MW 1 - 5'			70941612	1					X		X		70936042
5	MW 1 - 9.5'			70941620	1					X		X		70936059
6														Project AKA. 708070
7														
8														

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	SHIPMENT METHOD RETURNED/DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME