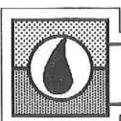
Sp. 03-91 Soil GIV



B & C

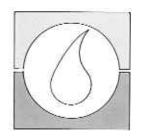
20320 80th Ave. S. Kent, WA 98032 (206) 872-8890

ENVIRONMENTAL SITE ASSESSMENT

For the property located at 12727 412th Ave. S.E. North Bend, WA 98045

Prepared for: Cascade Autovon

DEC 2 1991
DEPT. OF ECOLOGY



B & C EQUIPMENT CO.

20320 80th Ave. S. Kent, Washington 98032 Office (206) 872-8890 FAX (206) 872-8987 1-800-822-0084

November 12, 1991

Washington Department of Ecology 3190 160th Avenue SE Bellevue, Washington 98008-5452

Attn: Joseph M. Hickey

Re: Cascade Autovon Company

12727 412th Avenue SE

North Bend, Washington 98045

Dear Mr. Hickey:

This report presents the scope of environmental work performed by B & C Equipment Co. in regard to the removal of (2) 10,000 gallon underground diesel tanks at Cascade Autovon.

BACKGROUND:

On June 4, 1991, B & C Equipment removed the two diesel USTs from Cascade Autovon and collected (4) soil samples from the excavation, (2) beneath each tank at a depth of 11 feet and (2) samples from the north and south sidewalls at a depth of 9 feet. Figure 1 delineates the actual location of the sample collection.

The results of this initial sample collection revealed a Total Petroleum Hydrocarbon (TPH) concentration of 1,000 parts per million (ppm) from beneath the southern tank. The remaining (3) soil samples revealed non-detectable levels for the TPH analysis. Due to the high concentration level beneath the south tank, it was presumed that samples collected from the north side of the excavation were not taken at a sufficient depth to reveal contamination.

On June 13th, B & C collected (2) additional soil samples from the north sidewall and bottom center of the north tank at a depth of 9 feet and 11 feet respectively (refer to Figure 1). The results of these samples revealed a TPH concentration of 710 ppm from the north sidewall and 12,000 ppm from the bottom center sample. Additionally, the bottom center sample revealed contamination from an aged gas/diesel source.

On October 16th and 18th, B & C performed a subsequent excavation in an attempt to remove the remaining contamination from the excavation. At the time of this ensuing excavation, groundwater was encountered at a depth of approximately 10 1/2 feet. To diminish the effect of recharging groundwater contaminating native

soil as the excavation proceeded, B & C pumped approximately 10,000 gallons of recharging water into an on-site 20,000 gallon Baker Tank for later disposal at the ChemPro treatment facility. As the excavation progressed it was evident that the contamination had migrated through the groundwater table/capillary fringe interface. B & C removed and segregated the upper 10 feet of clean soil from soil below the water table contaminated Approximately 200 cubic yards of contaminated soil was removed from the excavation and stockpiled on-site. The contaminated soil was placed on visquine plastic, bermed and covered to prevent run-off in the event of rain.

Five soil samples were collected at a depth of 10 1/2 feet from the sidewalls of the excavation; two bottom center samples from the north and south portions of the excavation at a depth of 13 1/2 and 12 feet respectively; and one groundwater recharge sample from the north side of the excavation. No southeast sidewall sample could be collected as further excavation in this direction would serve to undermine the foundation of the security fence area where the facility transformer is located. Refer to Figure 2 for the sample locations of the October 18th excavation. In addition to the (3) samples were collected samples, contaminated soil stockpile on October 16th to profile the soil for later treatment or disposal.

Due to the existence of two concrete tank hold-down pads at the southern end of the excavation, sample #6 was collected between these two existing concrete pads. The groundwater sample (sample #7) was collected by extending a clean PVC bailer over the trackhoe arm and lowering the bailer into the recharged water at the north end of the excavation. Prior to sampling, the bailer was cleansed with a thorough tapwater rinse, alconox detergent wash, and final tapwater rinse.

All samples were collected using disposable vinyl gloves with EPA approved glass containers. The samples were packed for minimal headspace, labeled, and placed on ice for transport to the laboratory accompanied by chain of custody documentation.

RESULTS:

Subsurface Conditions: Soil immediately surrounding the USTs consisted of a medium grained sandy fill material. Soil beneath the two USTs and on top of the two concrete hold-down pads consisted of a coarse-grained grayish sandy material. It was this coarser grained sand that exhibited the most visual and olfactory contamination.

The native soil of the excavation consisted of a silty sand to a depth of approximately 7-8 feet but tapers slightly to varying depths around the perimeter of the excavation. Below the 8 foot depth, the soil consisted mainly of pebbles and cobbles mixed with silty sand from previous alluvial depositions. Soil beneath the water table (10 1/2 feet) at the north end of the excavation

consisted mainly of larger cobbles and rocks from alluvial depositions with silty sand in the interstices.

Chemical Results: Due to the June 13, 1991 analyses revealing contamination from an aged gas/diesel source, all subsequent samples collected on October 16th and 18th were analyzed for TPH as well as benzene, toluene, ethyl benzene, and xylene (BTEX).

The current Department of Ecology (DOE) soil cleanup standards for the parameters analyzed are:

The current Department of Ecology (DOE) water cleanup standards for the parameters analyzed are:

TPH (gasoline & diesel)...1000 parts per billion (ppb)

 Benzene
 0.5 ppb

 Toluene
 40.0 ppb

 Ethyl benzene
 30.0 ppb

 Xylene
 20.0 ppb

Samples #1-3 were collected October 16th from the contaminated soil stockpile and revealed a diesel range TPH concentration of 8,700 ppm from sample #1 and 1100 ppm from samples #2 and #3. The gasoline range TPH concentration for the stockpile samples were all within DOE cleanup goals.

The analyses results of the October 18th excavation samples revealed a diesel range TPH concentration of 2,900 ppm, 550 ppm, and 2,000 ppm from the northeast, northwest and southwest sidewall samples respectively. The groundwater recharge sample revealed a diesel range TPH concentration of 8.5 ppm.

Results within the DOE cleanup standard for diesel contaminated soil were obtained from the north sidewall with a TPH concentration at 110 ppm. The south sidewall (sample #11) and the two bottom samples (samples #6 and #8) revealed non-detectable levels in the diesel range.

All excavation soil samples and the groundwater recharge sample revealed either non-detectable levels or levels under the current DOE cleanup goals for both the BTEX and gasoline range TPH analyses.

The following tables summarize the analytical results from all four sampling events conducted by B & C Equipment Co. All concentration units are presented in parts per million:

TABLE 1 June 4, 1991

2N 3s	Location tank - N sidewall tank - bottom cent tank - bottom cent tank - bottom cent tank - S sidewall	ter	ion
	June 13,		
	Location tank - N sidewall tank - bottom cent	TPH Concentral	:ion
	TABLE 3		
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			======
	TABLE 3		
4100 / 2 5< 20 / 3 6< 20 / 3 *7< 0.005 8< 20 / 3 9< 20 / 3	2,900< 0.004< 110< 0.005< < 50< 0.006< / 8.5< 0.001< < 50< 0.005< 550< 0.005< ,000< 0.004<	oluene Ethyl benzene 0.0040.016 0.005<0.005 0.006<0.006 0.001<0.001 0.005<0.005 0.005<0.005 0.005<0.005 0.006<0.006	0.120 0.008 < 0.006 < 0.001 < 0.005 < 0.005

*Sample #7 - Groundwater recharge sample.

Complete analytical methods and results for all sampling conducted between June 4, 1991 and October 18, 1991 are summarized in the attached certified analytical reports.

CONCLUSIONS & RECOMMENDATIONS:

As the October 16th an 18th laboratory results document, gasoline range analyses were within Department of Ecology cleanup goals for all samples including the contaminated soil stockpile samples for both TPH and BTEX parameters.

Due to the facility's main transformer on the west side of Cascade Autovon's property, access for further excavation in this area was limited to the extent depicted in Figure 2. Also as Figure 2 illustrates, no additional soil removal was possible along the east sidewall of the excavation without undermining the foundation of the security area and the equipment that is stored in this locale such as Cascade's transformer pad.

Based on analytical documentation and observations of its October 18th excavation, B & C feels these results corroborate its theory that:

- The analyses results from sample #5 collected Oct. 18th confirm contamination migration was limited to this extent in the northward direction.
- 2) The south sidewall sample collected June 4th (sample #4) and the confirmation sample collected October 18th (sample #11) corroborates B & C's claim that contamination has not migrated in this direction.
- 3) Contamination is limited in depth to 10-11 feet as substantiated by the analyses results from the two bottom samples (#6 and #8) collected October 18th and the fact that this subsequent excavation proceeded at a time of year that allowed the lowest possible water table for soil removal.

Although the analytical results from the northeast, northwest, and southwest sidewall samples revealed TPH contamination above DOE cleanup goals in the diesel range, the limited access to the west and structural concerns to the east make it impractical to achieve DOE cleanup goals in these directions through additional excavation. Because the remaining contaminant in the soil is limited to diesel in nature and to 2,900 ppm TPH and less, B & C feels that any environmental threat to health and public at the site is minimal. A monitoring program should be implemented, however, to insure that the remaining contaminated soil does not impact the groundwater down-gradient of the excavation.

B & C recommends the installation of (3) 4-inch monitoring wells at the locations depicted in Figure 2. The southwest monitoring well would serve to observe conditions in this area of the site and the northeast and northwest wells would serve to monitor conditions at the opposite side of the excavation. All monitoring wells will be installed to a total depth of 25 feet and surveyed upon completion to determine the local gradient. B & C further recommends to develop the wells by purging three casing volumes and sampling the wells on a quarterly basis for a period of (1) year. All wells will be analyzed for BTEX and TPH by method 8015 to insure the integrity of the groundwater. If the wells reveal conditions

within the DOE's cleanup standards for that period, B & C will recommend a subsequent monitoring plan to follow-up on the existing conditions.

Cascade presently plans to install a new double-walled steel UST in the excavation. Due to the size of the excavation and the inclement weather in the near future, the rising water table is certain to present an installation obstacle and incur excessive dewatering costs to Cascade Autovon should the installation not proceed as soon as possible.

Therefore, B & C requests an expeditious approval in regard to this proposal. A written confirmation would be greatly appreciated in order for the installation of the new tank to proceed. If you have any questions, please contact me.

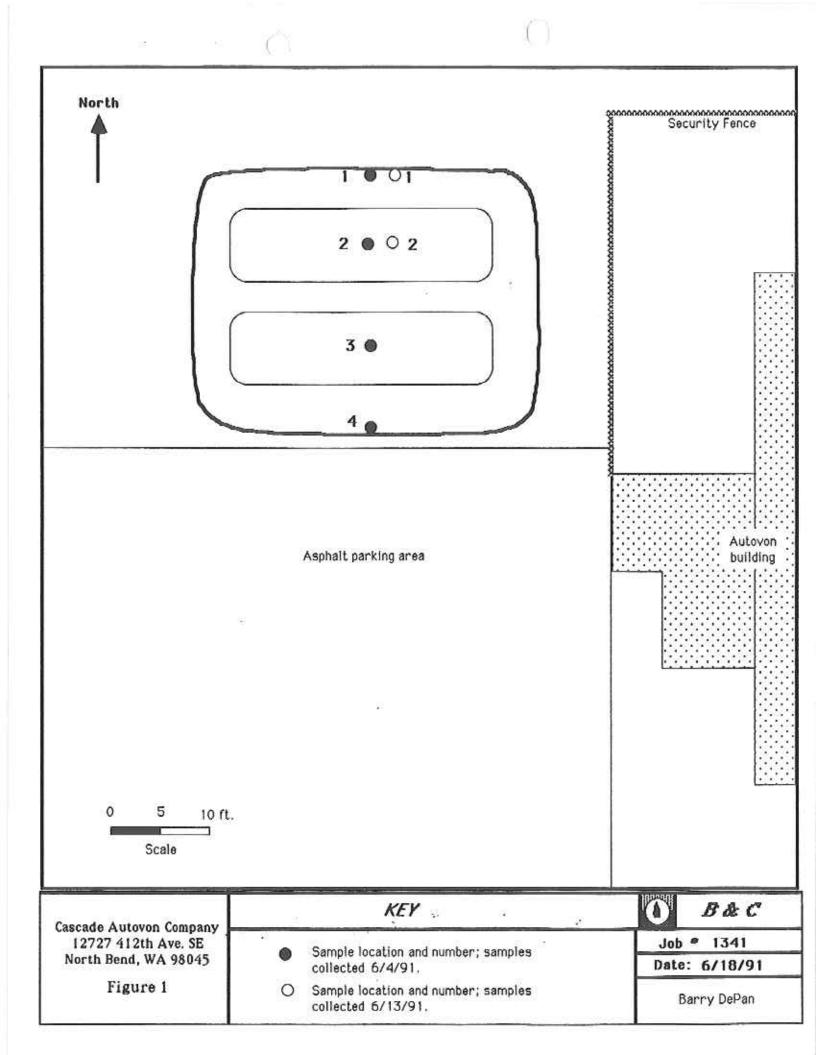
Sincerely,

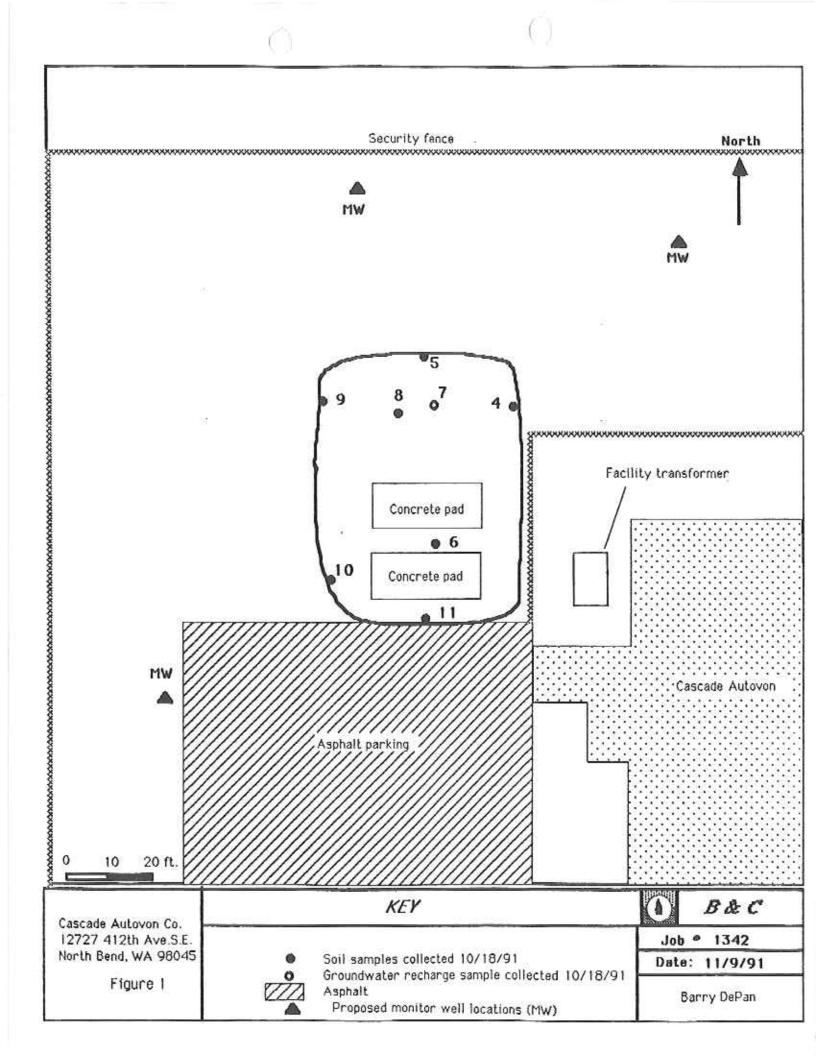
B & C EQUIPMENT CO.

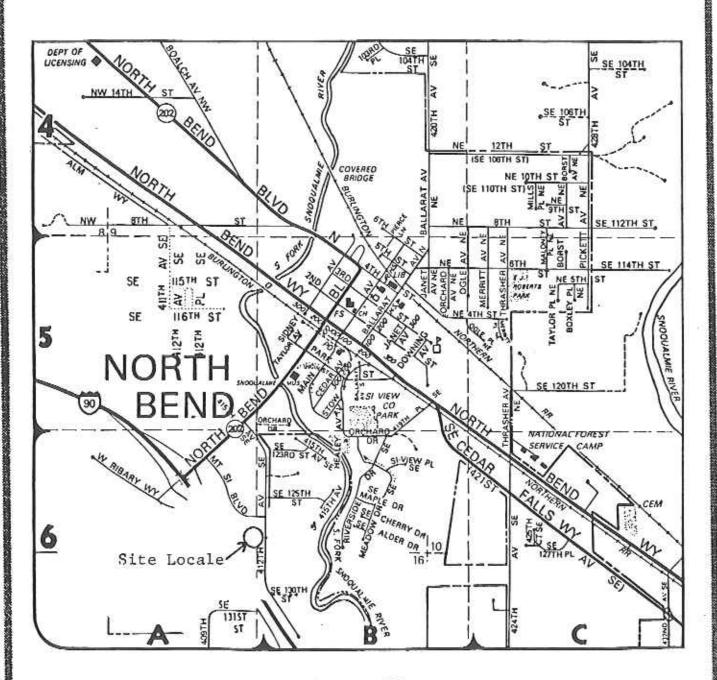
Barry D. DePan

Environmental Specialist

Barry D. De Pan







Vicinity Map

Figure 3

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

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SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS 4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: B & C Equipment

Date: June 7, 1991

Report On: Analysis of Soil

Lab No.: 17980

IDENTIFICATION:

Samples Received on 06-05-91 Project: 1341 Cascade Autovon

ANALYSIS:

Lab Sample No.	Client ID	Total Petroleum Fuel Hydrocarbons, mg/kg
1	1	< 10.0
2	2	< 10.0
3	3	1,000 Diesel
4	4	< 10.0

*TPH by EPA SW-846 Modified Method 8015

Note - Results reported on an as received basis.

SURROGATE RECOVERY

Lab Sample No.	1	2	3	4
TPH by Mod 8015 1-Chloroctane	93	97	95	94
Perylene	75	79	83	77

SOUND ANALYTICAL SERVICES

C. CARRY ZURAW

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

	ر بازیس این	Remodurated by	Barry D. De,							1	_	\		SAMPLE	1341	DHOJ NO
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SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS 4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: B & C Equipment Co.

Date: June 18, 1991

Report On: Analysis of Soil

Lab No.: 18147

IDENTIFICATION:

Samples Received on 06-14-91 Project: 134 Cascade Autovon

ANALYSIS:

Lab Sample No. Client ID

Total Petroleum
Fuel Hydrocarbons, mg/kg

RUSH 1

N. Tank - N. Sidewall

710

as Diesel

RUSH 2

N. Tank - Bottom Center

12,000

as Aged Gas/Diesel

*TPH by EPA SW-846 Modified Method 8015

Note - Results reported on an as received basis.

SU	RROGATE RECOVERY,	8
Lab Sample No.	1	2
TPH by Mod 8015 1-Chloroctane Perylene	96 78	163* 80

^{*}Surrogate recovery invalid due to matrix interferenc.

SOUND ANALYTICAL SERVICES

LARRY ZURA

REGANGLEASON	Reserved by: Barry D. De Sam 10/21/91 2:40 My a.			11 10/18 3:15 VV S sidewall 10.5'	3:00 / / 54	9 10/8/ 2:15 V NW sidentell 10.51		PROJ. NO. PROJECT MANE: /34/- 703 ADDRESS: 12727 4/2th Ave SE North Bend, WA SAMPLER Barry Barry Morth Bend, WA	B & C EQUIPMENT CO. Kent, Weshington 99032 Office (206) 872-8890 FAX (206) 872-8897 1-800-822-0084
	ROSE: TES DE					511	WIE WI WIPH-4 TPH TPH 8	PH-HCID PH-G PH-D 418.1 Mod. 418.1 B015 Mod.	CHAIN OF CUSTODY REQUEST FOR LABORATORY ANALYSIS



B&C EQUIPMENT CO. Kent. Washington 99032 Office (200) 872-8890 FAX (200) 872-8890 FAX (200) 872-8890

CHAIN OF CUSTODY

REQUEST FOR LABORATORY ANALYSIS

Profitoquisites :	MEGAN GLEASON	Barony D. D. Jam 10/21/91 2:40 My G		7 10 1:40 1 Second water rec		V N Sidewall	100		2 10/8 3:00 V * Composite	1 10/16/ 2:30 / Excavate soil pile	TIME AT IL SAMPLE LOCATION TANK SIZE TANK PRODUCT	ADDRESS: 12727 North !	PROJ. NO. PROJECT NAME: (34/- Cascade Autoron	
)	EASON		(N end) 13.5'	recharge 10.5'	pads 12'	10.5"	10.5"	6"	7.5		WI W	PH-HCI IPH-G IPH-D		ווועסרסי
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Laucks Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Chemistry, Microbiology, and Technical Services

CLIENT: B&C Equipment Co.

20320 80th Ave. 5.

Kent, WA 98032

ATTN :

Work ID : Cascade Autovan

Taken By 1

Transported by: Hand Delivered

Type

: Soil/Water

SAMPLE IDENTIFICATION:

	Šample	Collection
	Description	Date
01	#1 Excavator Soll Pile	10/16/91 02:30
02	#2 Exavated Soil Pile	10/16/91 03:00
03	#3 Excavated Soil Pile	10/16/91 03:30
04	#4 NE Sidewall	10/18/91 11:00
05	#5 N Sidewall	10/18/91 11:30
06	#6 Bottom Center (S end)	10/18/91 01:30
07	#7 Ground Water Recharge	10/18/91 01:40
08	#8 Bottom Center (N End)	10/18/91 01:45
09	#9 NW Sidewall	10/18/91 02:15
10	#10 SW Sidewall	10/18/91 03:00
11	#11 S Sidewall	10/18/91 03:15
12	Hethod Blank	N/A
13	Hethod Blank	N/A

FLAGGING:

The flag "U" indicates the analyte of interest was not detected, to the limit of detection indicated.

COMMENTS ON PURGEABLE ARCHATICS (BTEX):

Samples 9110A08-04, -05, -06, and -11 had one (Trichlorobenzene) of two surrogates outside the control limits due to matrix intereference. This did not affect the results.

Sample 9110A08-01 had one (Bromofluorobenzene) of two surrogates outside the control limits due to matrix intereference. This did not affect the results.



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

Certificate of Analysis

Work Order# : 91-10-A08 DATE RECEIVED : 10/21/91

DATE OF REPORT: 11/05/91

CLIENT JOB ID : Project No. 1341-903



Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-01

Date Collected: 10/16/91

Client Sample ID: #1 Excavator Soil Pile

Date Received: 10/21/91

Total Solids: 92 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

 Surrogate recoveries
 % Rec
 LCL UCL

 Bromofluorobenzene.....
 575
 50 150

 2-Fluorobiphenyl.....
 22.8
 50 150

 p-Terphenyl.....
 95.0
 50 150

Comments: Although the sample gave a result in the gasoline range, there was no pattern recognition for gasoline. There was some pattern recognition when compared to the diesel standard. This may be due to "weathering" of the sample. Two surrogates were out of control due to matrix interference.



Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-01B

Client Sample ID: #1 Excavator Soil Pile

Date Received : 10/21/91 Collection Date : 10/16/91
Date Extracted : N/A Date Analyzed : 10/23/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result	SDL	Analysis Date	Confirmation Date
Benzene	4.0 U	4	10/23/91	10/23/91
Toluene	120	4	10/23/91	10/23/91
Ethylbenzene	91	4	10/23/91	10/23/91
Total xylenes	570	4	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-01B

Surrogate	Percent	Limit	s:
OF THE PROPERTY OF THE PROPERT	Recovery	Min.	Max.
1,2,3-Trichlorobenzene	157	20	160
p-Bromofluorobenzene .	197.3 *	62	117





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-02

Client Sample ID: #2 Exavated Soil Pile

Date Collected: 10/16/91

Date Received: 10/21/91

Total Solids: 88 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

Result SDL

 Surrogate recoveries
 % Rec
 LCL UCL

 Bromofluorobenzene.....
 55.0
 50 150

 2-Fluorobiphenyl......
 280
 50 150

 p-Terphenyl......
 105
 50 150

Comments: There was some pattern recognition when compared to the diesel standard, this may be due to "weathering" effects of the sample. One of the surrogates was out of control due to matrix interference from the sample.



Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-02B

Client Sample ID: #2 Exavated Soil Pile

Date Received : 10/21/91 Collection Date : 10/16/91 Date Extracted : N/A Test Code : BTEX S

Date Analyzed : 10/23/91 Test Method : SW8020

Report Units : ug/kg DB

Compound	Result	68	ŞDL	Analysis Date	Confirmation Date
Benzene	5.0	U	5	10/23/91	10/23/91
Toluene	5.0	U	5	10/23/91	10/23/91
Ethylbenzene	5.0	U	5	10/23/91	10/23/91
Total xylenes	7.9		5	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-02B

Surrogate	Percent	Limit	s:
A STATE OF THE STA	Recovery	Min.	Max.
1,2,3-Trichlorobenzene .	149	20	160
p-Bromofluorobenzene		62	117





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-03 Client Sample ID: #3 Excavated Soil Pile Date Collected: 10/16/91

Date Received: 10/21/91

Total Solids: 89 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

| Result | SDL | |

 Surrogate recoveries
 % Rec
 LCL UCL

 Bromofluorobenzene.....
 90.0
 50 150

 2-Fluorobiphenyl......
 225
 50 150

 p-Terphenyl......
 110
 50 150

Comments: Although the sample gave a result in the gasoline range, there was no pattern recognition for gasoline. There was some pattern recognition when compared to the diesel standard. This may be due to "weathering" of the sample. One surrogate was out of control due to matrix interference.



Laucks Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Chemistry, Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-03B

Client Sample ID: #3 Excavated Soil Pile

Date Received : 10/21/91 Collection Date : 10/16/91
Date Extracted : N/A Date Analyzed : 10/23/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result	<u> </u>	SDL	Analysis Date	Confirmation Date
Benzene	4.0	U	4	10/23/91	10/23/91
Toluene	4.0	U	4	10/23/91	10/23/91
Ethylbenzene	4.0	U	4	10/23/91	10/23/91
Total xylenes	18	1588	4	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-03B

Surrogate	Percent	Limit	s:
	Recovery	Min.	Max.
1,2,3-Trichlorobenzene .	147	20	160
p-Bromofluorobenzene		62	117





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-04B Client Sample ID: #4 NE Sidewall

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 10/23/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result		SDL	Analysis Date	Confirmation Date
Benzene	4.0	U	4	10/23/91	10/23/91
Toluene	4.0	U	4	10/23/91	10/23/91
Ethylbenzene	16	2004	4	10/23/91	10/23/91
Total xylenes	120		4	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-04B

Surrogate	Percent	Limit	s:
	Recovery	Min.	Max.
1,2,3-Trichlorobenzene	185 *	20	160
p-Bromofluorobenzene		62	117





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-05 Client Sample ID: #5 N Sidewall

Date Collected: 10/18/91

Date Received: 10/21/91

Total Solids: 88 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

Result Gasoline Range..... 20 U 20 mg/kg DB 50 mg/kg DB Diesel Range..... 110

Surrogate recoveries % Rec LCL UCL Bromofluorobenzene..... 55.0 50 150 2-Fluorobiphenyl...... 105 50 150 p-Terphenyl..... 100 50 150

> Comments: There was some pattern recognition when compared to diesel standard. This may be due to "weathering" of the sample.





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-05B Client Sample ID: #5 N Sidewall

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 10/23/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result	SDL	Analysis Date	Confirmation Date
Benzene	5.0 U	5	10/23/91	10/23/91
Toluene	5.0 U	5	10/23/91	10/23/91
Ethylbenzene	5.0 U	5	10/23/91	10/23/91
Total xylenes	7.8	5	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-05B

Surrogate	Percent	Limit	s:
- STATE OF THE PROPERTY OF THE	Recovery	Min.	Max.
1,2,3-Trichlorobenzene	220 *	20	160
p-Bromofluorobenzene		62	117





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Chemistry Microbiology and Technical Services

Lab Sample ID : 9110A08-06

Date Collected: 10/18/91

Client Sample ID: #6 Bottom Center (S end) Date Received: 10/21/91

Total Solids: 73 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

Result SDL

Surrogate recoveries % Rec LCL UCL Bromofluorobenzene..... 30.0 50 150 2-Fluorobiphenyl...... 60.0 50 150

p-Terphenyl...... 70.0 50 150

Comments: One of three surrogates was out of control. This did not effect the results.





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-06B

Client Sample ID: #6 Bottom Center (S end)

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 10/23/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result		SDL	Analysis Date	Confirmation Date
Benzene	6.0	U	6	10/23/91	10/23/91
Toluene	6.0	U	6	10/23/91	10/23/91
Ethylbenzene	6.0	U	6	10/23/91	10/23/91
Total xylenes	6.0	U	6	10/23/91	10/23/91

Surrogate recovery report for sample 9110A08-06B

Surrogate	Percent	Limits:	
	Recovery	Min.	Max.
1,2,3-Trichlorobenzene	168 *	20	160
p-Bromofluorobenzene	83.8	62	117





Chemistry Microbiology and Technical Services

Lab Sample ID : 9110A08-07 Client Sample ID: #7 Ground Water Recharge

Date Collected: 10/18/91 Date Received: 10/21/91

UTDU UCID 0---3--

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

| Result SDL | Gasoline Range...... 500 U 500 ug/L | B500 1200 ug/L |

> Comments: There was some pattern recognition when compared to the diesel standard, this may be due to "weathering" effects on the sample.





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REPORT ON SAMPLE: 9110A08-07B

Client Sample ID: #7 Ground Water Recharge

Date Received

: 10/21/91

Collection Date: 10/18/91

Date Extracted : N/A

Date Analyzed : 11/23/91

Test Code

: BTEX W

Test Method

: SW 8020/EP602

Report Units : ug/L

Compound	Result		SOL	Analysis Date	Confirmation Date
Benzene	1.0	U	1	11/23/91	11/23/91
Toluene	1.0	U	1	11/23/91	11/23/91
Ethylbenzene	1.0	U	1	11/23/91	11/23/91
Total xylenes	1.0	U	1	11/23/91	11/23/91

Surrogate recovery report for sample 9110A08-07B

Surrogate	Percent	Lim	its:
	Recovery	Min.	Max.
Bromofluorobenzene	. 89	78	119
1,2,3-Trichlorobenzene	126	61	145





Chemistry, Microbiology, and Technical Services

Lab Sample ID : 9110A08-08 Date Collected: 10/18/91 Client Sample ID: #8 Bottom Center (N End) Date Received: 10/21/91

Total Solids: 88 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

| Result SDL | | SDL | SDL





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-08B

Client Sample ID: #8 Bottom Center (N End)

Date Received : 10/21/91 Collection Date : 10/18/91 Date Analyzed : 11/24/91 Date Extracted : N/A Test Code : BTEX S Test Method

Report Units : ug/kg DB

Compound	Result	ĝ.	SDL	Analysis Date	Confirmation Date
Benzene	5.0	U	5	11/24/91	11/24/91
Toluene	5.0	U	5	11/24/91	11/24/91
Ethylbenzene	5.0	U	5	11/24/91	11/24/91
Total xylenes	5.0	U	5	11/24/91	11/24/91

: SW8020

Surrogate recovery report for sample 9110A08-08B

Surrogate	Per	cent	Limits:	
Service Services	Rec	overy_	Min.	Max.
1,2,3-Trichlorobenzene		116	20	160
p-Bromofluorobenzene			62	117





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-09 Client Sample ID: #9 NW Sidewall Date Collected: 10/18/91 Date Received: 10/21/91

Total Solids: 70 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

 Surrogate recoveries
 % Rec
 LCL UCL

 Bromofluorobenzene.....
 55.0
 50 150

 2-Fluorobiphenyl......
 145
 50 150

 p-Terphenyl.....
 95.0
 50 150

Comments: There was some pattern recognition when compared to the diesel standard. This may be due to "weathering" of the sample.





Chemistry, Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-09B Client Sample ID: #9 NW Sidewall

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 11/24/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result		SDL	Analysis Date	Confirmation Date
Benzene	5.0	U	5	11/24/91	11/24/91
Toluene	5.0	U	5	11/24/91	11/24/91
Ethylbenzene	5.0	U	5	11/24/91	11/24/91
Total xylenes	5.0	U	5	11/24/91	11/24/91

Surrogate recovery report for sample 9110A08-09B

Surrogate P	ercent	Limit	s:	
R	Recovery Min. Ma			
1,2,3-Trichlorobenzene	. 124	20	160	
p-Bromofluorobenzene	. 78.5	62	117	





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-10 Client Sample ID: #10 SW Sidewall

Date Collected: 10/18/91 Date Received: 10/21/91

Total Solids: 92 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

 Bromofluorobenzene.....
 90.0
 50 150

 2-Fluorobiphenyl.....
 395
 50 150

 p-Terphenyl.....
 110
 50 150

Comments: Although the sample gave a result in the gasoline range, there was no pattern recognition for gasoline. There was some pattern recognition when compared to the diesel standard. This may be due to "weathering" of the sample. One surrogate was out of control due to matrix interference.





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-10B Client Sample ID: #10 SW Sidewall

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 11/24/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result		SDL	Analysis Date	Confirmation Date
Benzene	4.0	U	4	11/24/91	11/24/91
Toluene	4.0	U	4	11/24/91	11/24/91
Ethylbenzene	4.0	U	4	11/24/91	11/24/91
Total xylenes	15		4	11/24/91	11/24/91

Surrogate recovery report for sample 9110A08-10B

Surrogate	Percent	Limits:	
	Recovery Min.		
1,2,3-Trichlorobenzene .	150	20	160
p-Bromofluorobenzene	82.5	62	117





Chemistry Microbiology, and Technical Services

Lab Sample ID : 9110A08-11 Client Sample ID: #11 S Sidewall

Date Collected: 10/18/91 Date Received: 10/21/91

Total Solids: 71 %

WTPH-HCID Results:

Prep Date: 10/22/91 Analysis Date: 10/22/91

 Surrogate recoveries
 % Rec Bromofluorobenzene.....
 LCL UCL Bromofluorobenzene.....

 2-Fluorobiphenyl......
 100
 50
 150

 p-Terphenyl......
 100
 50
 150





Chemistry Microbiology, and Technical Services

REPORT ON SAMPLE: 9110A08-11B Client Sample ID: #11 S Sidewall

Date Received : 10/21/91 Collection Date : 10/18/91
Date Extracted : N/A Date Analyzed : 11/24/91
Test Code : BTEX_S Test Method : SW8020

Report Units : ug/kg DB

Compound	Result	į	SDL	Analysis Date	Confirmation Date
Benzene	6.0	U	6	11/24/91	11/24/91
Toluene	6.0	U	6	11/24/91	11/24/91
Ethylbenzene	6.0	U	6	11/24/91	11/24/91
Total xylenes	6.0	U	6	11/24/91	11/24/91

Surrogate recovery report for sample 9110A08-11B

Surrogate	Percent	Limits:	
+	Recovery	Min. Max.	
1,2,3-Trichlorobenzene	171 *	20	160
p-Bromofluorobenzene	83.5	62	117

