

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

11711 Northcreek Parkway S., Suite D101 • Bothell, Washington 98011
Telephone (425) 486-7905 (FAX 486-7651)

MEMORANDUM

TO: Ching-Pi Wang - Ecology

FROM: Matthew Dalton

DATE: March 14, 2000

SUBJECT: NFA Letter Ground-Water Sampling
Aspenwood and Magnolia Building Sites
Bellefield Office Park, Bellevue, WA

REF. NO: SPK-004

Cc: Scotta Sherlock – Spieker (w/o enclosure)

Enclosed with this memorandum is our report titled “*Summary of 1999 Ground-Water Sampling Event, Building N (Aspenwood) & O (Magnolia) Properties, Bellevue, Washington*”. This report presents the results of ground-water sampling completed to meet the requirements of Ecology’s NFA letter dated May 21, 1999.

Please call if you have any questions.

Matt Dalton

RECEIVED
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DEPT. OF ECOLOGY

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

11711 Northcreek Parkway S., Suite 101 • Bothell, Washington 98011
Telephone (425) 486-7905 (FAX 486-7651)

February 23, 2000

Scotta Sherlock
Spieker Properties, Inc.
11400 S.E. 8th St.
Suite 265
Bellevue, WA 98004

Re: Summary of 1999 Ground-Water Sampling Event
Buildings N (Aspenwood) & O (Magnolia) Properties
Bellevue, Washington

Dear Scotta:

This report presents the results of our ground-water monitoring conducted in 1999 at the Building N (Aspenwood) & Building O (Magnolia) Properties, Bellevue, Washington (Figure 1). Well locations are shown on Figure 2. Information on the general hydrogeology of the sites is presented in DOF (1998).

The ground-water monitoring was completed consistent with the Washington State Department of Ecology (Ecology) "No Further Action" (NFA) letter dated May 21, 1999. As stated in the letter:

"Confirmational monitoring of the permanent on-site wells BA-MW-1 and MW-K1 should be added to the on-going sampling schedule specified in the Ecology letter to Mr. Donald S. Jefferson of Spieker Properties, Inc. dated November 1, 1996, for the Bellefield Office Park at 11201 SE Eighth Street, Bellevue, Washington. The same set of analytical parameters specified in the 1996 letter is requested for the two additional wells."

The pertinent portion of the Ecology 1996 letter concerning monitoring at the Bellefield Office Park is presented below:

"Confirmational monitoring of the permanent on-site wells should therefore occur semi-annually for an additional three year period, then annually for another two years, at which time Ecology will review the information to ensure continued protection of human health and the environment. All monitoring wells should be tested for TPH and total arsenic, lead and zinc."

In addition, monitoring wells DW-2 and DW-5 should be analyzed for PAHs, while DW-3, DW-4, DW-5 and DW-6 should be tested for PCBs."

The results of the characterization ground-water sampling are presented in DOF (1998). The first monitoring event specified in the Building N and Building O NFA letter was completed in November 1999.

INSTALLATION OF REPLACEMENT WELL BA-MW-1

During construction of Building N, monitor well BA-MW-1 was inadvertently destroyed. To meet the requirements of Ecology's NFA letter, a replacement well was installed, designated BA-MW-1(R). The well was installed by Holt Drilling (Puyallup, WA) on November 12, 1999 using a hollow-stem auger. Terry Olmsted, Sr. Consulting Geologist at Dalton, Olmsted & Fuglevand, Inc. (DOF) observed and documented the installation. The log of monitor well BA-MW-1(R) is presented as Figure 3.

SAMPLING PROCEDURES AND FIELD MEASUREMENTS

Low flow/low turbidity sampling procedures were used to collect the ground-water samples. Purging and sampling were completed using a peristaltic pump with a discharge rate of approximately 0.5 liters per minute. During purging, field measurements were made for depth to water, temperature, pH, specific conductivity and turbidity. Ground-water samples were collected after at least three casing volumes had been removed from the wells and the field parameters stabilized to within 10%.

Samples were collected directly into containers provided by the receiving laboratory (North Creek Analytical Inc.) that, in turn, were placed into chilled coolers for transport to the laboratory. Samples were delivered to the laboratory on the same day or the day following collection. Standard chain-of-custody procedures were used to document sampling handling.

GROUND-WATER QUALITY

In accordance with the requirements of the NFA letter, analyses were made for petroleum hydrocarbons (using Method WTPH-D-extended); total arsenic, lead and zinc; polycyclic aromatic hydrocarbons (PAHs); and PCBs. The results of the ground-water quality analyses required by the NFA letter are summarized in attached Table 1 along with the results of the previous analyses. Laboratory data sheets for the November 1999 sampling round are presented in Attachment 1.

Total Petroleum Hydrocarbons. In 1999 diesel-range (C12 to C24) hydrocarbons and heavy-oil range hydrocarbons (>C24) were not detected in any of the wells.

Polychlorinated Biphenyls (PCBs). PCBs have not been detected during any sampling round in any of the water samples from the wells.

Polynuclear Aromatic Hydrocarbons (PAHs). The PAH analytes detected are listed in Table 1. The 1999 PAH concentrations are similar to concentrations detected in a sample collected from MW-K1 in 1997.

Total Metals. Analyses were made for total arsenic, lead and zinc. The results are summarized in Table 1.

- Total arsenic concentrations, when detected, were below 0.005 mg/l. The highest reported detection was 0.0024 mg/l, measured in a sample from well MW-K1 in November 1999.
- Total lead concentrations have been measured below 0.010 mg/l. The highest lead concentration (0.0094 mg/l) was measured in the November 1999 sample from well MW-K1.
- Total zinc concentrations have generally ranged between less than 0.01 mg/l to 0.012 mg/l. The highest zinc concentration (0.012 mg/l) was measured in the November 1999 sample from well BA-MW-1.

YEAR 2000 SCHEDULED SAMPLING ROUND

In 2000, sampling is scheduled to be completed in April/May and October/November consistent with the requirements of the NFA letter.

REFERENCES

Dalton, Olmsted & Fuglevand, Inc., 1998, Independent Remedial Action Report, Building N (Aspenwood) and Building O (Magnolia) Sites, Bellefield Office Park, Bellevue, Washington, October 1998.

CLOSING

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of Spieker Properties, Inc. unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for our client, purposes, locations, time

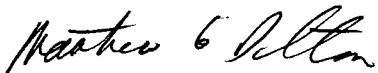
Dalton, Olmsted & Fuglevand, Inc.

Scotta Sherlock - Spieker Properties, Inc.
Page 4 February 23, 2000

frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Please call if you have any questions.

Sincerely
Dalton, Olmsted & Fuglevand, Inc.



Matthew G. Dalton
Sr. Consulting Hydrogeologist

Attachments Table 1 - Summary of Water Quality Data
Figure 1 - Site Vicinity Map
Figure 2 - Well Location Map
Figure 3 - Well Log - BA-MW-1(R)

Attachment 1. Laboratory Data Sheets - November 1999

ref: BldgN_Omonrpt99

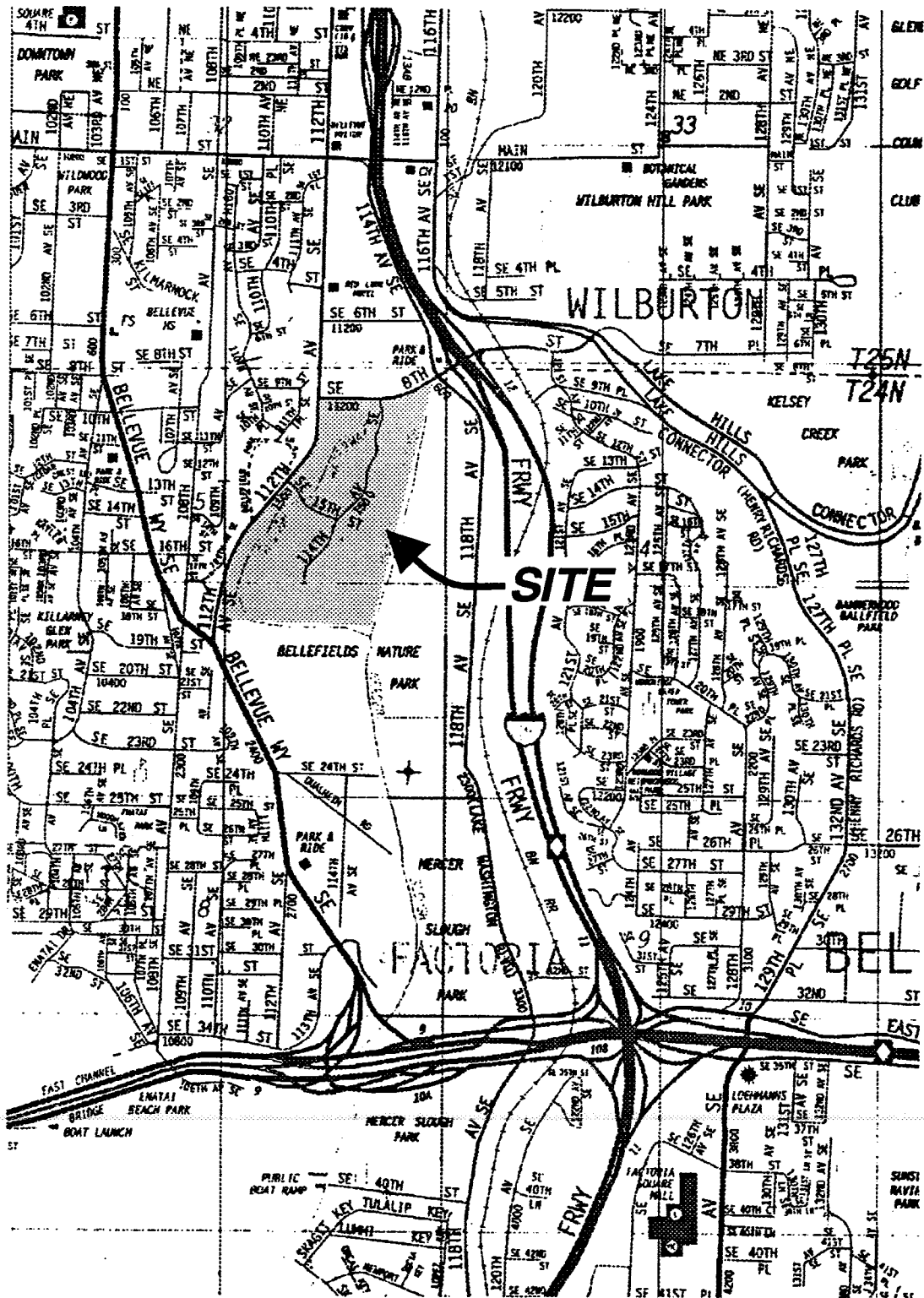
TABLE 1 - Summary of Ground-Water Quality Data

Building N O Sites
Bellevue, Washington

Well No.	MW-K1	MW-K1	BA-MW-1	BA-MW-1(R)
Screen Depth(ft)	3-13	3-13	2.5-12.5	2.5-12.5
Sample Date	12/18/97	11/16/99	11/25/96	11/16/99
Total Petroleum Hydrocarbons				
TPH as Diesel (mg/l)	<0.25	<0.25	<0.25	<0.50
TPH as Oil (mg/l)	<0.75	<0.75	<0.75	<1.50
PCBs (ug/l)				
Aroclor 1016	<0.10	<0.10	<0.10	<0.10
Aroclor 1221	<0.10	<0.10	<0.10	<0.10
Aroclor 1232	<0.10	<0.10	<0.10	<0.10
Aroclor 1242	<0.10	<0.10	<0.10	<0.10
Aroclor 1248	<0.10	<0.10	<0.10	<0.10
Aroclor 1254	<0.10	<0.10	<0.10	<0.10
Aroclor 1260	<0.10	<0.10	<0.10	<0.10
Aroclor 1262	<0.10	<0.10	---	<0.10
Aroclor 1268	<0.10	<0.10	---	<0.10
Polynuclear Aromatic Hydrocarbons (ug/l)				
Acenaphthene	1.28	2.00	---	0.57
Acenaphthylene	<1.0	<0.1	---	<0.20
Anthracene	<1.0	0.49	---	<0.20
Benzo(a)anthracene	<0.10	<0.1	---	<0.20
Benzo(a)pyrene	<0.10	<0.1	---	<0.20
Benzo(b)fluoranthene	<0.10	<0.1	---	<0.20
Benzo(ghi)perylene	<0.10	<0.1	---	<0.20
Benzo(k)fluoranthene	<0.10	<0.1	---	<0.20
Chrysene	<0.10	<0.1	---	<0.20
Dibenzo(a,h)anthracene	<0.10	<0.1	---	<0.20
Fluoranthene	0.28	0.49	---	<0.20
Fluorene	1.46	1.69	---	0.38
Indeno(1,2,3-cd)pyrene	<0.10	<0.1	---	<0.20
Naphthalene	6.57	7.70	---	0.30
Phenanthrene	1.53	2.62	---	<0.20
Pyrene	<1.0	0.44	---	<0.20
Total Metals (mg/l)				
Arsenic	<0.001	0.0024	<0.004	0.0019
Lead	0.0089	0.0094	0.0070	0.0078
Zinc	<0.020	<0.010	<0.020	0.012

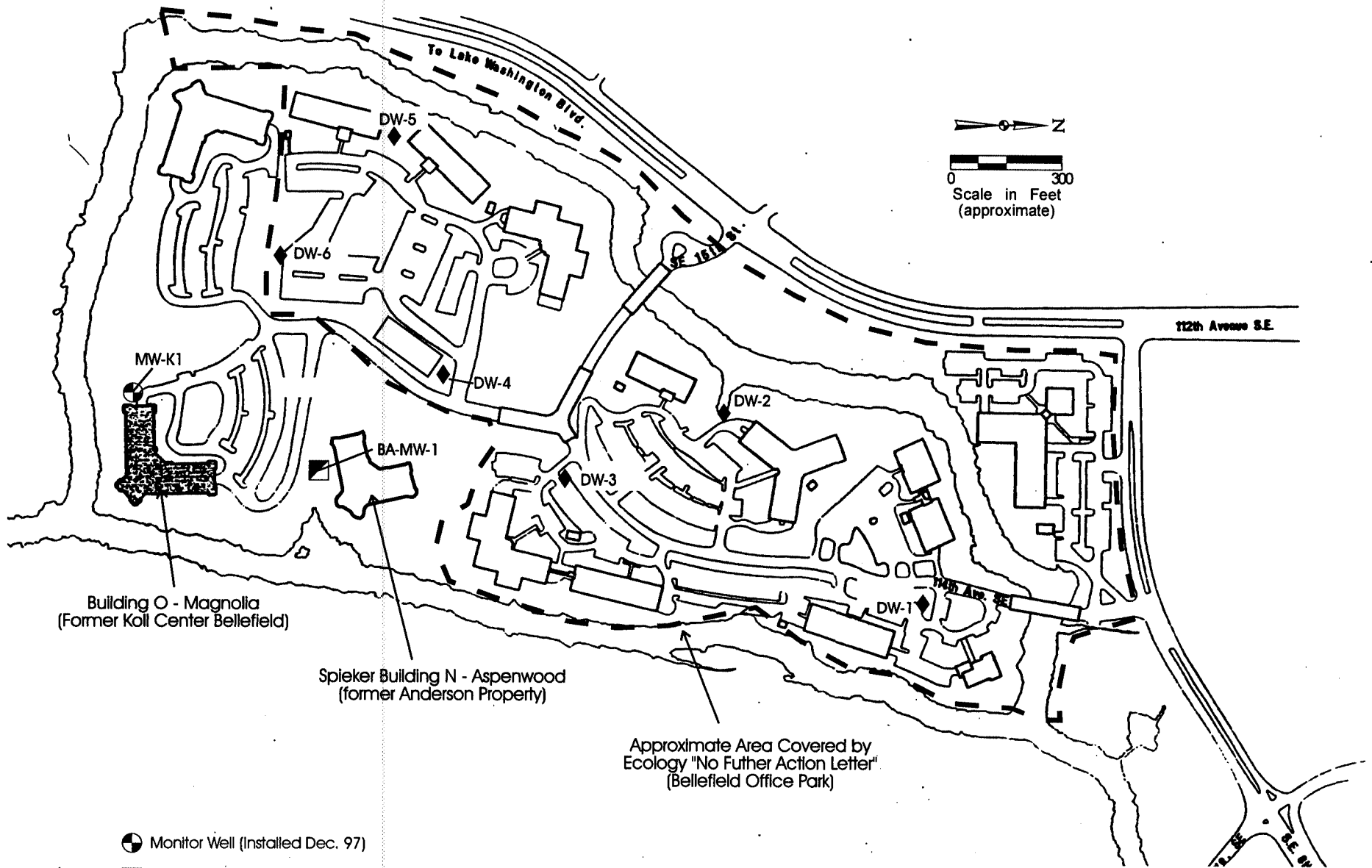
< = Not detected at indicated reporting limit

--- = Not analyzed



Bellefield Office Park
Bellevue Washington

VICINITY MAP



- ⊕ Monitor Well (Installed Dec. 97)
- ▣ Replacement Monitor Well (Installed Nov. 99)
- ◆ Monitor Well (Installed March 96)

Building N & O Properties
Bellevue, Washington

WELL LOCATIONS

SPK-004 **FIGURE 2** February 2000
Dalton, Olmsted & Fuglevand, Inc.

ATTACHMENT 1
LABORATORY DATA SHEETS
BUILDING N & O PROPERTIES
NOVEMBER 1999 GROUND-WATER SAMPLING



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Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BA-MW-1(R)	B9K0319-01	Water	11/16/99 12:30	11/16/99 14:40
MW-K1	B9K0319-02	Water	11/16/99 14:00	11/16/99 14:40

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Project Number: HEW-020
Project Manager: Matthew Dalton

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11/29/99 13:55

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up
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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BA-MW-1(R) (B9K0319-01) Water Sampled: 11/16/99 12:30 Received: 11/16/99 14:40									
Diesel Range Hydrocarbons	ND	0.512	mg/l	1	9K17010	11/17/99	11/19/99	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	1.54	"	"	"	"	"	"	
<i>Surrogate: 2-FBP</i>		65.9 %	50-150		"	"	"	"	
MW-K1 (B9K0319-02) Water Sampled: 11/16/99 14:00 Received: 11/16/99 14:40									
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	9K17010	11/17/99	11/19/99	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
<i>Surrogate: 2-FBP</i>		65.8 %	50-150		"	"	"	"	

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Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Total Metals by EPA 200 Series Methods
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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BA-MW-1(R) (B9K0319-01) Water Sampled: 11/16/99 12:30 Received: 11/16/99 14:40									
Arsenic	0.00192	0.00100	mg/l	1	9K17014	11/17/99	11/23/99	EPA 200.8	
Lead	0.00780	0.00100	"	"	"	"	"	"	
Zinc	0.0119	0.0100	"	"	"	"	"	"	
MW-K1 (B9K0319-02) Water Sampled: 11/16/99 14:00 Received: 11/16/99 14:40									
Arsenic	0.00235	0.00100	mg/l	1	9K17014	11/17/99	11/23/99	EPA 200.8	
Lead	0.00942	0.00100	"	"	"	"	"	"	
Zinc	0.0100	0.0100	"	"	"	"	"	"	

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Dalton, Olmsted and Fuglevand
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Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Polychlorinated Biphenyls by EPA Method 8082
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BA-MW-1(R) (B9K0319-01) Water Sampled: 11/16/99 12:30 Received: 11/16/99 14:40									
Aroclor 1016	ND	0.100	ug/l	1	9K18004	11/18/99	11/22/99	EPA 8082	
Aroclor 1221	ND	0.100	"	"	"	"	"	"	
Aroclor 1232	ND	0.100	"	"	"	"	"	"	
Aroclor 1242	ND	0.100	"	"	"	"	"	"	
Aroclor 1248	ND	0.100	"	"	"	"	"	"	
Aroclor 1254	ND	0.100	"	"	"	"	"	"	
Aroclor 1260	ND	0.100	"	"	"	"	"	"	
Aroclor 1262	ND	0.100	"	"	"	"	"	"	
Aroclor 1268	ND	0.100	"	"	"	"	"	"	
Surrogate: TCX		79.1 %	40-130		"	"	"	"	
Surrogate: Decachlorobiphenyl		68.1 %	40-130		"	"	"	"	
MW-K1 (B9K0319-02) Water Sampled: 11/16/99 14:00 Received: 11/16/99 14:40									
Aroclor 1016	ND	0.100	ug/l	1	9K18004	11/18/99	11/22/99	EPA 8082	
Aroclor 1221	ND	0.100	"	"	"	"	"	"	
Aroclor 1232	ND	0.100	"	"	"	"	"	"	
Aroclor 1242	ND	0.100	"	"	"	"	"	"	
Aroclor 1248	ND	0.100	"	"	"	"	"	"	
Aroclor 1254	ND	0.100	"	"	"	"	"	"	
Aroclor 1260	ND	0.100	"	"	"	"	"	"	
Aroclor 1262	ND	0.100	"	"	"	"	"	"	
Aroclor 1268	ND	0.100	"	"	"	"	"	"	
Surrogate: TCX		63.7 %	40-130		"	"	"	"	
Surrogate: Decachlorobiphenyl		30.8 %	40-130		"	"	"	"	S-03

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Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BA-MW-1(R) (B9K0319-01) Water Sampled: 11/16/99 12:30 Received: 11/16/99 14:40									
Acenaphthene	0.566	0.200	ug/l	2	9K17002	11/17/99	11/21/99	GCMS-SIM	
Acenaphthylene	ND	0.200	"	"	"	"	"	"	
Anthracene	ND	0.200	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.200	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.200	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.200	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.200	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.200	"	"	"	"	"	"	
Chrysene	ND	0.200	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.200	"	"	"	"	"	"	
Fluorene	0.377	0.200	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.200	"	"	"	"	"	"	
Naphthalene	0.302	0.200	"	"	"	"	"	"	
Phenanthrene	ND	0.200	"	"	"	"	"	"	
Pyrene	ND	0.200	"	"	"	"	"	"	
Surrogate: 2-FBP		67.2 %	30-150		"	"	"	"	
Surrogate: Nitrobenzene-d5		53.8 %	30-150		"	"	"	"	
Surrogate: p-Terphenyl-d14		80.3 %	30-150		"	"	"	"	
MW-K1 (B9K0319-02) Water Sampled: 11/16/99 14:00 Received: 11/16/99 14:40									
Acenaphthene	2.00	0.100	ug/l	1	9K17002	11/17/99	11/20/99	GCMS-SIM	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	0.494	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.100	"	"	"	"	"	"	
Fluoranthene	0.494	0.100	"	"	"	"	"	"	
Fluorene	1.69	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Naphthalene	7.70	0.100	"	"	"	"	"	"	
Phenanthrene	2.62	0.100	"	"	"	"	"	"	
Pyrene	0.437	0.100	"	"	"	"	"	"	
Surrogate: 2-FBP		65.3 %	30-150		"	"	"	"	

North Creek Analytical - Bothell

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Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-K1 (B9K0319-02) Water Sampled: 11/16/99 14:00 Received: 11/16/99 14:40									
Surrogate: Nitrobenzene-d5	73.7 %		30-150		9K17002	11/17/99	11/20/99	GCMS-SIM	
Surrogate: p-Terphenyl-d14	57.5 %		30-150		"	"	"	"	

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

**hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up - Quality
North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 9K17010: Prepared 11/17/99 Using EPA 3520C/600 Series									
Blank (9K17010-BLK1)									
Diesel Range Hydrocarbons	ND	0.250	mg/l						
Heavy Oil Range Hydrocarbons	ND	0.750	"						
Surrogate: 2-FBP	0.211		"	0.320		65.9	50-150		
LCS (9K17010-BS1)									
Diesel Range Hydrocarbons	1.43	0.250	mg/l	2.00		71.5	50-150		
Surrogate: 2-FBP	0.246		"	0.320		76.9	50-150		
Duplicate (9K17010-DUP1)					Source: B9K0311-01				
Diesel Range Hydrocarbons	ND	0.482	mg/l		0.230		57.7	44	Q-05
Heavy Oil Range Hydrocarbons	ND	1.45	"		0.257			44	
Surrogate: 2-FBP	0.442		"	0.617		71.6	50-150		
Duplicate (9K17010-DUP2)					Source: B9K0319-01				
Diesel Range Hydrocarbons	ND	0.442	mg/l		0.0733		45.1	44	Q-05
Heavy Oil Range Hydrocarbons	ND	1.33	"		0.351			44	
Surrogate: 2-FBP	0.405		"	0.565		71.7	50-150		

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Environmental Laboratory Network

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Dalton, Olmsted and Fuglevand
 11711 Northcreek Pkwy S, Ste # 101
 Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
 Project Number: HEW-020
 Project Manager: Matthew Dalton

Reported:
 11/29/99 13:55

Total Metals by EPA 200 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9K17014: Prepared 11/17/99 Using EPA 200 Series										
Blank (9K17014-BLK1)										
Arsenic	ND	0.00100	mg/l							
Lead	ND	0.00100	"							
Zinc	ND	0.0100	"							
LCS (9K17014-BS1)										
Arsenic	0.224	0.00100	mg/l	0.200		112	85-115			
Lead	0.211	0.00100	"	0.200		105	85-115			
Zinc	0.202	0.0100	"	0.200		101	85-115			
Matrix Spike (9K17014-MS1) Source: B9K0319-01										
Arsenic	0.223	0.00100	mg/l	0.200	0.00192	111	75-125			
Lead	0.233	0.00100	"	0.200	0.00780	113	75-125			
Zinc	0.187	0.0100	"	0.200	0.0119	87.6	75-125			
Matrix Spike Dup (9K17014-MSD1) Source: B9K0319-01										
Arsenic	0.218	0.00100	mg/l	0.200	0.00192	108	75-125	2.27	20	
Lead	0.234	0.00100	"	0.200	0.00780	113	75-125	0.428	20	
Zinc	0.186	0.0100	"	0.200	0.0119	87.1	75-125	0.536	20	

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Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 9K18004: Prepared 11/18/99 Using EPA 3520C/600 Series									
Blank (9K18004-BLK1)									
Aroclor 1016	ND	0.100	ug/l						
Aroclor 1221	ND	0.100	"						
Aroclor 1232	ND	0.100	"						
Aroclor 1242	ND	0.100	"						
Aroclor 1248	ND	0.100	"						
Aroclor 1254	ND	0.100	"						
Aroclor 1260	ND	0.100	"						
Aroclor 1262	ND	0.100	"						
Aroclor 1268	ND	0.100	"						
Surrogate: TCX	0.139		"	0.200		69.5		40-130	
Surrogate: Decachlorobiphenyl	0.137		"	0.200		68.5		40-130	
LCS (9K18004-BS1)									
Aroclor 1260	7.81	0.100	ug/l	10.0		78.1		33-122	
Surrogate: TCX	0.142		"	0.200		71.0		40-130	
Surrogate: Decachlorobiphenyl	0.160		"	0.200		80.0		40-130	
LCS Dup (9K18004-BSD1)									
Aroclor 1260	8.19	0.100	ug/l	10.0		81.9		33-122	4.75 21
Surrogate: TCX	0.151		"	0.200		75.5		40-130	
Surrogate: Decachlorobiphenyl	0.162		"	0.200		81.0		40-130	

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David Vandel, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

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Dalton, Olmsted and Fuglevand
 11711 Northcreek Pkwy S, Ste # 101
 Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
 Project Number: HEW-020
 Project Manager: Matthew Dalton

Reported:
 11/29/99 13:55

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9K17002: Prepared 11/17/99 Using EPA 3520C/600 Series										
Blank (9K17002-BLK1)										
Acenaphthene	ND	0.100	ug/l							
Acenaphthylene	ND	0.100	"							
Anthracene	ND	0.100	"							
Benzo (a) anthracene	ND	0.100	"							
Benzo (a) pyrene	ND	0.100	"							
Benzo (b) fluoranthene	ND	0.100	"							
Benzo (ghi) perylene	ND	0.100	"							
Benzo (k) fluoranthene	ND	0.100	"							
Chrysene	ND	0.100	"							
Dibenz (a,h) anthracene	ND	0.100	"							
Fluoranthene	ND	0.100	"							
Fluorene	ND	0.100	"							
Indeno (1,2,3-cd) pyrene	ND	0.100	"							
Naphthalene	ND	0.100	"							
Phenanthrene	ND	0.100	"							
Pyrene	ND	0.100	"							
Surrogate: 2-FBP	30.2		"	50.0		60.4	30-150			
Surrogate: Nitrobenzene-d5	39.3		"	50.0		78.6	30-150			
Surrogate: p-Terphenyl-d14	37.6		"	50.0		75.2	30-150			
LCS (9K17002-BS1)										
Chrysene	8.24	0.100	ug/l	10.0		82.4	50-150			
Fluorene	6.90	0.100	"	10.0		69.0	50-150			
Indeno (1,2,3-cd) pyrene	8.02	0.100	"	10.0		80.2	50-150			
Surrogate: 2-FBP	35.3		"	50.0		70.6	30-150			
Surrogate: Nitrobenzene-d5	38.9		"	50.0		77.8	30-150			
Surrogate: p-Terphenyl-d14	37.2		"	50.0		74.4	30-150			

North Creek Analytical - Bothell

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Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
Bothell WA, 98011

Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9K17002: Prepared 11/17/99 Using EPA 3520C/600 Series										
LCS Dup (9K17002-BSD1)										
Chrysene	8.72	0.100	ug/l	10.0		87.2	50-150	5.66	25	
Fluorene	7.70	0.100	"	10.0		77.0	50-150	11.0	25	
Indeno (1,2,3-cd) pyrene	8.92	0.100	"	10.0		89.2	50-150	10.6	25	
Surrogate: 2-FBP	37.8		"	50.0		75.6	30-150			
Surrogate: Nitrobenzene-d5	41.8		"	50.0		83.6	30-150			
Surrogate: p-Terphenyl-d14	38.9		"	50.0		77.8	30-150			

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Environmental Laboratory Network

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Dalton, Olmsted and Fuglevand
11711 Northcreek Pkwy S, Ste # 101
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Project: Bellefields-Magnolia/Aspenwood
Project Number: HEW-020
Project Manager: Matthew Dalton

Reported:
11/29/99 13:55

Notes and Definitions

Q-05 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.

S-03 The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

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Environmental Laboratory Network

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Data File : D:\HPCHEM\4\DATA\K22014.D

Acq On : 11-22-99 9:57:59 AM

Sample : b9k0319-01

Misc : W R1

IntFile : SURR.E

Vial: 11

Operator: jw

Inst : GC #7

Multiplr: 1.00

Quant Time: Nov 22 10:47 1999 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)

Title : TPH-D Front Method

Last Update : Wed Nov 17 06:58:15 1999

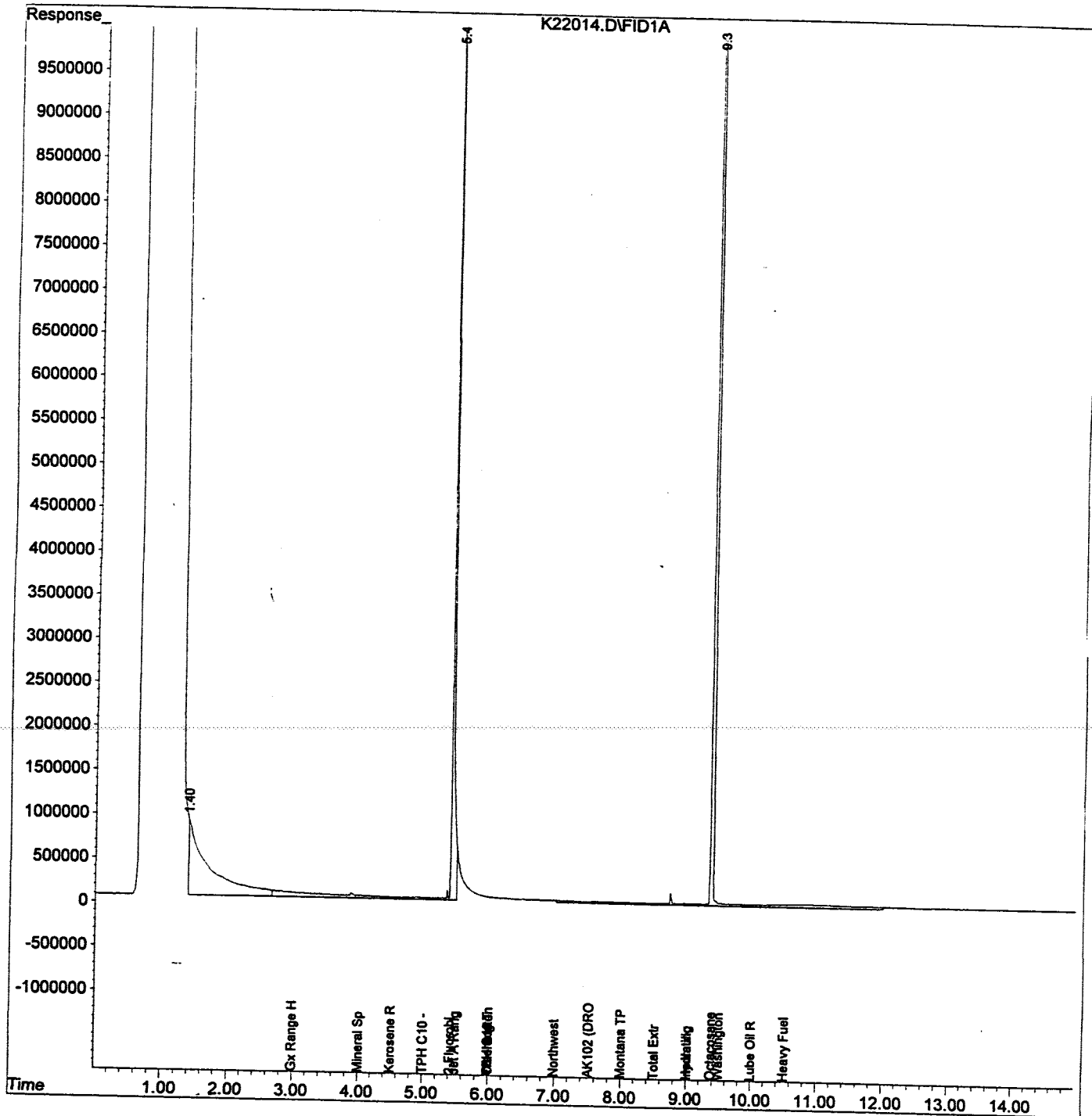
Response via : Multiple Level Calibration

DataAcq Meth : TPHD.M

Volume Inj. :

Signal Phase :

Signal Info :

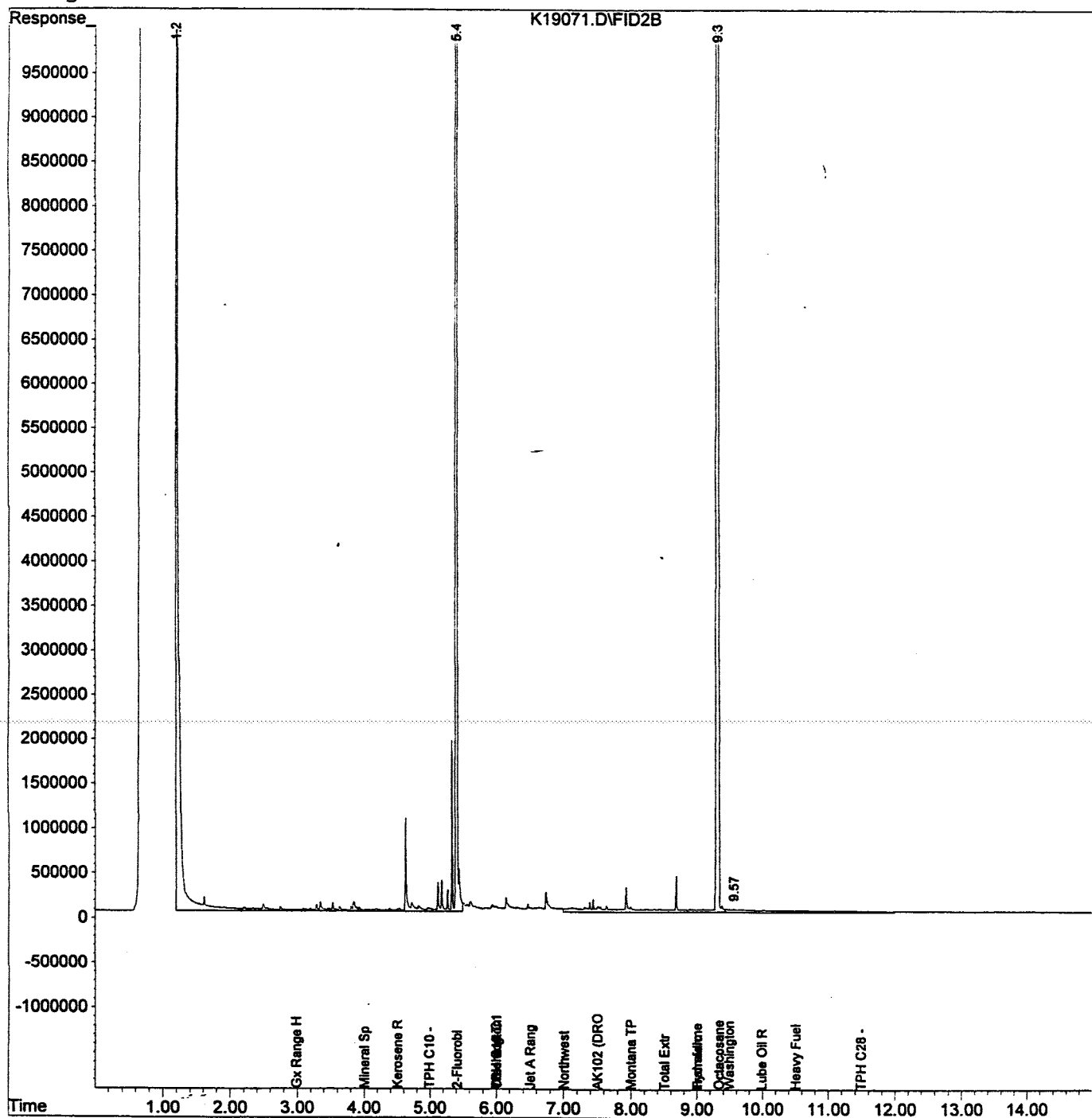


Quantitation Report

Data File : D:\HPCHEM\4\DATA\111999\K19071.D Vial: 33
 Acq On : 11-19-99 9:25:37 PM Operator: EP
 Sample : B9K0319-02 Inst : GC #7
 Misc : W Multiplr: 1.00
 IntFile : SURR.E
 Quant Time: Nov 22 7:17 1999 Quant Results File: TPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
 Title : TPH-D Rear Method
 Last Update : Mon Nov 15 10:22:08 1999
 Response via : Multiple Level Calibration
 DataAcq Meth : TPHD.M

Volume Inj. :
 Signal Phase :
 Signal Info :



Dalton, Olmsted & Fuglevand, Inc

Environmental Consultants

Contract Laboratory:

CHAIN OF CUSTODY REPORT

B9K0319

CLIENT: Dalton, Olmsted & Fuglevand

ADDRESS:

11711 Northcreek Parkway S., Suite 101

Bothell, Washington 98011

PHONE: (206) 486-7905

FAX: (206) 486-7651

PROJECT NAME: ~~Spicer Properties~~ Bellefields-Magnolia /
Aspenwood

PROJECT NUMBER: HEW-020

SAMPLED BY: T. Olmsted

REPORT TO: Matt Dalton

DOF

BILLING TO: DOF

P.O. NUMBER:

QUOTE #:

Kennerly per Term 11/16/99
Analysis Request

SAME DAY RUSH (+150%)

1 BUSINESS DAY RUSH (+100%)

2 BUSINESS DAY RUSH (+80%)

3 BUSINESS DAY RUSH (+60%)

5 BUSINESS DAY RUSH (+40%)

10 BUS. DAY STANDARD (LIST) X

5 BUS. DAY HYDROCARBON (LIST) X

COMMENTS &
PRESERVATIVES USED

LABORATORY
SAMPLE
NUMBER

SAMPLE IDENTIFICATION:

SAMPLING

MATRIX

OF

(NUMBER OR DESCRIPTION)

DATE / TIME

(W,S,O)

CONT.

1. BA-MW-1(R)

11/16/99 1230

W

4

X

X

X

X

2. MW-K1

11/16/99 1400

W

4

X

X

X

X

3.

4.

5.

6.

7.

8.

9.

10.

RELINQUISHED BY:

FIRM: Dalton, Olmsted & Fuglevand, Inc.

DATE:

11/16/99

TIME:

1440

RECEIVED BY:

S Wideen
NCA

DATE: 11-16-99

TIME: 1440

RELINQUISHED BY:

FIRM:

DATE:

TIME:

RECEIVED BY:

FIRM:

DATE:

TIME:

SAMPLE RECEIPT INFORMATION

CONTAINER CONDITION?: GOOD VIOLATED

COOL (4° C)? YES NO 4.3

CUSTODY SEALS? GOOD VIOLATED NOT USED

HAZARDOUS SAMPLES?: NO YES; DESCRIBE ON BACK

PAGE 1 OF 1