# ENVIRONMENTAL SAMPLING LETTER NORTHSHORE UTILITY DISTRICT HEADQUARTERS KENMORE, WASHINGTON FOR NORTHSHORE UTILITY DISTRICT

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INTERIA SITE CHA FINAL CLEATOR ILLE OTHERMARAGE AFFECTED MEDIA: OTHER INSPECTOR (INIT.) #	

17311-135th Avenue NE, A-500 Woodinville, WA 98072 (425) 486-1669 • Fax 481-2510 Snohomish County (425) 337-1669 Wenatchee/Chelan (509) 784-2756

February 23, 1999

Mr. Ron Gehrke, Manager Northshore Utility District 6830 NE 185<sup>TH</sup> Street Kenmore, Washington 98028

> Environmental Sampling Letter Northshore Utility District Headquarters Kenmore, Washington NCA File No. 1561C97

Dear Mr. Gehrke:

#### INTRODUCTON

This letter presents the results of our environmental sampling services at your headquarters and service center site. The site is located at  $18520-68^{th}$  Avenue NE, in Kenmore, Washington. You have requested that we evaluate the ground water in existing wells on the site on a semi-annual basis, to fulfill an agreement made with the Washington Department of Ecology (Ecology). We have been provided with reports and letters by Dames & Moore, dated July 19, September 22, November 20, and December 27, 1995, and a letter from Ecology, dated July 9, 1997, for our use in preparing this letter.

Dames and Moore have previously installed four wells on the property as part of their surface and subsurface characterization at the site. The site is currently occupied by two recently remodeled buildings and one new structure, which make up your headquarters and service center. Ecology has reviewed the reports for this site and has required that the existing four wells be sampled on a semi-annual basis for

three years. Each ground water sample is to be analyzed for total petroleum hydrocarbons as gasoline, diesel, and heavy oil (TPH-G, TPH-D, TPH-O) and benzene, ethylbenzene and xylene (BETX). This letter presents the results of our first semiannual ground water sampling.

#### **SCOPE**

The purpose of our services is to provide environmental sampling analysis of ground water samples.

Specifically, the services to be provided by NCA are as follows:

- 1. Review the previous environmental reports for the project.
- 2. Purge and sample the four monitoring wells on the property.
- 3. Analyze each of the three samples for:
  - Gasoline by WTPH-G
  - Diesel and Heavy Oil by WTPH-H extended
  - BETX by EPA Method 8020
- 4. Document our results in a short letter.
- 5. Provide consultation and additional environmental services as requested.

#### **GROUND WATER SAMPLING**

Ground water samples were collected on January 19 and 20, 1999, in general accordance with the Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Ecology, 1992). The location of the wells is shown on the Site Plan in Figure 1. Typically, three to four well volumes of ground water are purged from a well prior to sampling. In this case, the amount of ground water purged prior to sampling was limited due to recharge conditions. Monitoring Well 1 (MW-1), MW-2, and MW-3 were pumped dry after purging 1.2 to 1.5 well volumes prior to sampling. MW-3 had a greater recharge and four well volumes were purged prior to sampling. Ground water samples were obtained using disposable polyethylene bailers dedicated to each well to avoid cross-contamination of wells. Samples were chilled and under chain of custody until delivered to a subcontracted analytical laboratory.

We discovered that sampling conditions are not ideal during the wetter times of the year. The monitoring well monuments for wells MW-1 through MW-3 were originally above ground completions. During construction of the parking area for the NSUD offices, these wells were converted to at-grade completions. A new monument was installed around MW-4. It was found that during the wetter months, several of the monuments collected surface water and cracks in the monument base allowed high ground water to flow into the monument. Purging and sampling of the wells was performed by using the Districts large shop-vac to continuously remove accumulated water from the monument.

#### **GROUND WATER CONDITIONS**

Ground water elevations were not evaluated during our site visit due to high volumes of surface water entering the monitoring well monument boxes. The elevations will me measured later during an extended period of dry weather.

#### **QUANTITATIVE ANALYSIS**

The concentration of petroleum hydrocarbons existing in the subsurface materials were quantified by testing for:

- 1. Gasoline by WTPH-G
- 2. Diesel and Heavy Oil by WTPH-D extended
- 3. BETX by EPA method 8020

The results of ground water sampling indicate concentrations of WTPH-G, WTPH-D, and BETX below Model Toxics Control Act (MTCA), Method A action levels. A summary of analytical laboratory results on ground water is presented in **Table 1**. Analytical laboratory certificates are attached. MTCA, Method A cleanup levels for ground water are presented in the last row of **Table 1**. The analytical test results indicate that concentrations of petroleum products as Gasoline, Diesel, Heavy Oil, and BETX were below MTCA Method A action levels. The previous results by Dames and Moore are summarized in **Table 1**.

	TABLE 1 - WATER SAMPLE ANALYSIS											
Well	Date	WTPH-G	Benzene	Ethylbenzene	Tolulene	Xylenes	WTPH-	WTPH-				
I.D.	Sampled	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	Diesel	Heavy Oil				
							(ppb)	(ppb)				
*MW-1	10-23-95	120	<0.50	<0.50	0.58	<1.0	1,500	NA				
*MW-2	10-23-95	<20	< 0.50	< 0.50	< 0.50	< 0.50	1,200	NA				
*MW-3	10-23-95	73	0.81	< 0.50	0.78	2.6	1,000	NA				
*MW-4	10-23-95	120	< 0.50	< 0.50	9.2	<1.0	7,100	NA				
MW-1	1-19-99	ND	ND	ND	ND	ND	952	ND				
MW-2	1-19-99	ND	ND	ND	ND	ND	854	874				
MW-3	1-19-99	ND	ND	ND	ND	ND	331	ND				
MW-4	1-20-99	ND	ND	ND	ND	ND	331	ND				
MTCA CI	eanup	1000.0	5.0	30.0	40.0	20.0	1000.0	1000				
Le	vels			•								

<sup>\*</sup> Sampling and analysis performed by Dames and Moore

#### USE OF THIS LETTER

This letter has been provided for Northshore Utility District and their agents, for their use on this project. The results and conclusions presented in this letter are professional opinions based on exploration and testing accomplished for this study and should not be considered a warranty of subsurface conditions.

Within the limitations of scope, schedule and budget for our services, we have strived to take care that our work has been done in accordance with generally accepted practices in this area at the time this letter was prepared. No other conditions, expressed or implied, should be understood.

NA - Not Analyzed

ND - Analyte not detected at or above detection limit concentrations listed in the analytical laboratory reports.

It has been a pleasure to provide service to you on this project. If you have any questions or require further information, please call.

Sincerely,

**NELSON-COUVRETTE** & ASSOCIATES, INC.

William B. Benzer, PE Senior Engineer

LMR:WBB:nt

Three Copies Submitted
One Figure
Attachment – Laboratory Certificates

William B. Benser J.

# Site Plan EXISTING BUILDING B PROPOSED BUILDING C CONNECT ROL TO (TYP) EXISTING BUILDING A **LEGEND** THE PERSON OF TH MW-1 NUMBER AND APPROXIMATE LOCATION OF MONITORING WELL 120 Scale 1" = 60' Northshore Utility District FIGURE 1 **NELSON-COUVRETTE** & ASSOCIATES, INC. Headquarters CONSULTING GEOTECHNICAL ENGINEERS, GEOLOGISTS FILE NO. DATE AND ENVIRONMENTAL SCIENTISTS

February 1999

1561C97

Reference: Site Plan created from a storm drainage and grading plan by Penhallegon Associates Consutling Engineers, Inc., titled "Service Center", dated July 1997.



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20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541.383.9310 fax 541.382.7588 Bend

17311-135th Ave NE, #A-500 Project Number:

Woodinville, WA 98072

Nelson-Couvrette and Associates, Inc.

Northshore Utility District Project:

1561C97

Project Manager: William Benzer Sampled: 1/19/99

> 1/20/99 Received:

Reported: 1/26/99 13:28

#### ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-2/1/99	B901306-01	Water	1/19/99
MW-3/1/99	B901306-02	Water	1/19/99
MW-1/1/99	B901306-03	Water	1/19/99
MW-4/1/99	B901306-04	Water	1/19/99

Joy B Chang, Project Manager



Seattle

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Portland

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Nelson-Couvrette and Associates, Inc.

17311-135th Ave NE, #A-500

Project: Northshore Utility District

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1/19/99

Woodinville, WA 98072

Project Number: 1561C97 Project Manager: William Benzer Received: 1/20/99

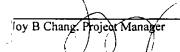
Reported: 1/26/99 13:28

#### Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B North Creek Analytical - Bothell

MW-2/1/99         R901306-01         Water           Gasoline Range Hydrocarbons         0190489         1/21/99         1/21/199         50.0         ND         ug/l           Benzene         """"""""""""""""""""""""""""""""""""		Batch	Date	Date	Surrogate	Reporting			<del></del> ,
Gasoline Range Hydrocarbons   0190489   1/21/99   1/21/99   50.0 ND   ug/l	Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
Gasoline Range Hydrocarbons   0190489   1/21/99   1/21/99   50.0 ND   ug/l	. MW-2/1/00		•	D0013	06 O1			*****	
Benzene		0100490	1/21/00		<u>00-01</u>	50.0	MD		
Toluene					•				
Ethylbenzene " " " 0,500 ND "  Xylenes (total) " " " " 50.0-150 99.8 %  Surrogate: +BFB (FID) " " " 50.0-150 99.8 %  Surrogate: +BFB (FID) " " " 50.0-150 99.8 "  MW-3/1/99			,,						
Xylenes (total)		ts	n		•	'			
Surrogate: 4-BFB (FID)	•	10	n						
MW-3/1/99   B901306-02   Water		,,	,,		50.0.150	1.00		·	
MW-3/1/99   1/20/99   1/20/99   50.0 ND   ug/l	, ,	,,	"	,,					
Gasoline Range Hydrocarbons   0190457   1/20/99   1/20/99   50.0   ND   ug/1	Surrogate: 4-Br B (PID)				30.0-130	•	99.8	.,	
Gasoline Range Hydrocarbons   0190457   1/20/99   1/20/99   50.0   ND   ug/1	MW-3/1/99			B90130	06-02		•	Water	
Benzene		0190457	1/20/99		<del></del>	50.0	ND		
Toluene								_	
Ethylbenzene " " " " 50.0-150 ND " " Surrogate: 4-BFB (FID) " " " 50.0-150 99.2 " " "	Toluene	11	.,	. "				IT.	
Xylenes (total)	Ethylbenzene	**	n	Ħ					
Surrogate: 4-BFB (FID)         " " " 50.0-150         96.7 %           Surrogate: 4-BFB (PID)         " " " 50.0-150         99.2 "           MW-1/1/99         B901306-03         Water           Gasoline Range Hydrocarbons         0190457 1/20/99 1/20/99 50.0 ND ug/l         ND ug/l           Benzene         " " " " 0.5000 ND "         " " " 1.00 ND "           Ethylbenzene         " " " " 50.0-150 ND "         " " 1.00 ND "           Sylenes (total)         " " " 50.0-150 Surrogate: 4-BFB (FID)         93.5 %           Surrogate: 4-BFB (PID)         " " " 50.0-150 ND Ug/l           Gasoline Range Hydrocarbons         0190457 1/20/99 1/20/99 50.0 ND ug/l           Benzene         " " " 50.00 ND "           Toluene         " " " 0.500 ND "           Ethylbenzene         " " " 0.500 ND "           Ethylbenzene         " " " 0.500 ND "           Surrogate: 4-BFB (FID)         " " " 0.500 ND "           Ethylbenzene         " " " 0.500 ND "           Surrogate: 4-BFB (FID)         " " 0.500 ND "           Surrogate: 4-BFB (FID)         " " 0.500 ND "           Surrogate: 4-BFB (FID)         " " 0.500 ND "	1 -	"	•	11				11	
MW-1/1/99         B901306-03         Water           Gasoline Range Hydrocarbons         0190457         1/20/99         1/20/99         50.0         ND         ug/l           Benzene         "         "         0.500         ND         "           Toluene         "         "         0.500         ND         "           Ethylbenzene         "         "         "         0.500         ND         "           Kylenes (total)         "         "         "         50.0-150         93.5         %           Surrogate: 4-BFB (FID)         "         "         50.0-150         93.5         %           Surrogate: 4-BFB (PID)         "         "         50.0-150         93.5         %           Surrogate: 4-BFB (PID)         "         "         50.0-150         ND         ug/l           Water         "         "         50.0-150         ND         Ug/l           Gasoline Range Hydrocarbons         0190457         1/20/99         50.0         ND         "           Benzene         "         "         "         0.500         ND         "           Toluene         "         "         "         0.500         ND		"	,,	"	50.0-150			%	
Gasoline Range Hydrocarbons         0190457         1/20/99         1/20/99         50.0         ND         ug/l           Benzene         "         "         "         0.500         ND         "           Toluene         "         "         "         0.500         ND         "           Ethylbenzene         "         "         "         0.500         ND         "           Xylenes (total)         "         "         "         50.0-150         ND         "           Surrogate: 4-BFB (FID)         "         "         "         50.0-150         93.5         %           Surrogate: 4-BFB (PID)         "         "         "         50.0-150         93.5         %           MW-4/1/99         "         "         "         50.0-150         ND         ug/l           Gasoline Range Hydrocarbons         0190457         1/20/99         1/20/99         50.0         ND         "           Benzene         "         "         "         0.500         ND         "           Toluene         "         "         "         0.500         ND         "           Ethylbenzene         "         "         "         "<	· · · · · · · · · · · · · · · · · · ·	#	<b>"</b> .	· <i>n</i>					
Gasoline Range Hydrocarbons         0190457         1/20/99         1/20/99         50.0         ND         ug/l           Benzene         "         "         "         "         0.500         ND         "           Toluene         "         "         "         "         0.500         ND         "           Ethylbenzene         "         "         "         "         0.500         ND         "           Xylenes (total)         "         "         "         50.0-150         ND         "           Surrogate: 4-BFB (FID)         "         "         "         50.0-150         93.5         %           Surrogate: 4-BFB (PID)         "         "         "         50.0-150         93.5         %           MW-4/1/99         "         "         "         50.0-150         ND         ug/l           Gasoline Range Hydrocarbons         0190457         1/20/99         1/20/99         50.0         ND         "           Benzene         "         "         "         "         0.500         ND         "           Toluene         "         "         "         "         0.500         ND         "	MW-1/1/99			B90130	06-03			Water	
Benzene   " " " "   "   0.500 ND   "   Toluene   " " "   "   0.500 ND   "		0190457	1/20/99	-	<u> </u>	50.0	ND		
Toluene " " " " " 0.500 ND " Ethylbenzene " " " " 50.0-150 ND " ND " ND " ND									
Ethylbenzene " " " " 0.500 ND " Xylenes (total) " " " 50.0-150 ND "    Surrogate: 4-BFB (FID) " " " 50.0-150 93.5 %    Surrogate: 4-BFB (PID) " " " 50.0-150 ND "    MW-4/1/99		11	11	II .				n	
Xylenes (total)		II.	н	11				n	
Surrogate: 4-BFB (FID)       " " 50.0-150       93.5 %         Surrogate: 4-BFB (PID)       " " 50.0-150       102 "         MW-4/1/99       B901306-04       Water         Gasoline Range Hydrocarbons       0190457 1/20/99 1/20/99       50.0 ND ug/l         Benzene       " " " 0.500 ND "         Toluene       " " " 0.500 ND "         Ethylbenzene       " " " 0.500 ND "         Xylenes (total)       " " 50.0-150       95.6 %		н	п	н	-			19	
Surrogate: 4-BFB (PID)         " " 50.0-150         102 "           MW-4/1/99         B901306-04         Water           Gasoline Range Hydrocarbons         0190457 1/20/99 1/20/99 50.0 ND ug/l         50.0 ND ug/l           Benzene         " " " 0.500 ND "           Toluene         " " " 0.500 ND "           Ethylbenzene         " " " 0.500 ND "           Xylenes (total)         " " 50.0-150         95.6 %		<i>"</i>	11	"	50.0-150			<u></u>	
Gasoline Range Hydrocarbons   0190457   1/20/99   1/20/99   50.0   ND   ug/l	- · · · · · · · · · · · · · · · · · · ·	"	"	<b>"</b> .					
Gasoline Range Hydrocarbons   0190457   1/20/99   1/20/99   50.0   ND   ug/l	.MW-4/1/99			B90130	06-04			Water	
Benzene       " " " 0.500 ND "         Toluene       " " 0.500 ND "         Ethylbenzene       " " 0.500 ND "         Xylenes (total)       " " 1.00 ND "         Surrogate: 4-BFB (FID)       " " 50.0-150 95.6 %		0190457	1/20/99	•	<del></del>	50.0	ND		
Toluene " " " 0.500 ND " Ethylbenzene " " " 0.500 ND " Xylenes (total) " " " 1.00 ND " Surrogate: 4-BFB (FID) " " 50.0-150 95.6 %									
Ethylbenzene       " " " 0.500 ND "         Xylenes (total)       " " 1.00 ND "         Surrogate: 4-BFB (FID)       " " 50.0-150 95.6 %		11	11	11				11	
Xylenes (total)       "       "       "       1.00       ND       "         Surrogate: 4-BFB (FID)       "       "       50.0-150       95.6       %	•	11	ti .	17			· -	,,'	
Surrogate: 4-BFB (FID) " " 50.0-150 95.6 %	. •	11	11	n				n .	
		<del>,, </del>	<del>,,</del> -	"	50.0-150			%	
Surrogate: 4-RFR (PID) " " " 50.0-150 101 "	Surrogate: 4-BFB (PID)	,,	"	"	50.0-150 50.0-150		101	,,	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.





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Nelson-Couvrette and Associates, Inc.

17311-135th Ave NE, #A-500

Project:

Northshore Utility District

Sampled:

1/19/99

Project Number:

1561C97

Received:

1/20/99

Woodinville, WA 98072

Project Manager:

William Benzer

Reported: 1/26/99 13:28

#### Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) North Creek Analytical - Bothell

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
MW-2/1/99			B9013	<u>06-01</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0190513	1/22/99	1/25/99		0.250	0.854	mg/l	
Heavy Oil Range Hydrocarbons	10	ti	"		0.750	0.874	"	
Surrogate: 2-FBP	"	n	"	50.0-150		80.2	%	
MW-3/1/99		•	B90130	<u>06-02</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0190513	1/22/99	1/25/99		0.250	0.331	mg/l	•
Heavy Oil Range Hydrocarbons	Ð	**	и		0.750	ND	н _	
Surrogate: 2-FBP	n .	"	"	50.0-150		74.8	%	
MW-1/1/99			B90130	<u>06-03</u>	-		<u>Water</u>	
Diesel Range Hydrocarbons	0190513	1/22/99	1/25/99		0.250	0.952	mg/l	•
Heavy Oil Range Hydrocarbons	n	и.	**		0.750	ND	н	
Surrogate: 2-FBP	n	"	"	50.0-150		79.6	%	
MW-4/1/99	•		B90130	06-04			Water	
Diesel Range Hydrocarbons	0190513	1/22/99	1/25/99	·	0.250	0.331	mg/l	
Heavy Oil Range Hydrocarbons	15	ıı	II.		0.750	ND	, ~	
Surrogate: 2-FBP	"	"	"	50.0-150		75.4	%	•

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang/Project Manage



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1899 120th Avenue NE, Suite 101, Bothell, WA 99011-9508 425.420.9200 [ax 425.420.9210 East 11115 Montgomery, Suite B. Spokane; WA 99206-4776 509.924.9200 [ax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 [ax 503.906.9210 2034 Empire Avenue, Suite E-9, Bend, OR 97708-1883 Portland

541.383.9310 fax 541.382.7588

Nelson-Couvrette and Associates, Inc.

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1/26/99 13:28

#### Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B/Quality Control North Creek Analytical - Bothell

	D :					_			<u>-</u>
Analyte	Date Applyzed	Spike Level	Sample	QC Pagult	Units	Reporting Limit		RPD	RPD
Patiente	Analyzed	Level	Result	Result	Units	Recov. Limits	<u>%</u>	Limit	% Notes
Batch: 0190457	Date Prepare	<u>ed: 1/20/</u>	99		Extrac	tion Method: EP.	<u>A 5030R</u>	(P/T)	
Blank	0190457-BL				÷			<del></del>	
Gasoline Range Hydrocarbons	1/20/99			ND	ug/l	50.0			
Benzene	11			ND	,, _	0.500			
Toluene	rr .			ND	11	0.500			
Ethylbenzene	ii .			ND	11	0.500			
Xylenes (total)	n			ND	n	1.00			
Surrogate: 4-BFB (FID)	"	48.0		46.3	"	50.0-150	96.5		<del></del>
Surrogate: 4-BFB (PID)	"	48.0		47.1	"	50.0-150	98.1		
LCS	0190457-BS1	[							•
Gasoline Range Hydrocarbons	1/20/99	500		500	ug/l	70.0-130	100		
Surrogate: 4-BFB (FID)	"	48.0		47.9	"	50.0-150	99.8		· · · · · · · · · · · · · · · · · · ·
Duplicate	0190457-DU	P1 R	901291-06						
Gasoline Range Hydrocarbons	1/20/99	<i>E</i>	84.5	73.3	ug/l			25.0	14.2
Surrogate: 4-BFB (FID)	"	48.0	3 1,12	46.9		50.0-150	97.7		
Duplicate	0190457-DUI	ם פ	901307-01			•			
Gasoline Range Hydrocarbons	1/21/99	<u> </u>	2280	2300	ug/l			25.0	0.873
Surrogate: 4-BFB (FID)	"	48.0	2200	46.8	ug/i	50.0-150	97.5	23.0	J.075
							-		
Matrix Spike	<u>0190457-MS</u>	<u>1</u> B	<u>901291-03</u>						
Benzene	1/20/99	10.0	ND	9.20	ug/l	70.0-130	92.0		
Toluene	n	10.0	ND	8.91	H	70.0-130	89.1		
Ethylbenzene	H	10.0	ND	9.33	n	70.0-130	93.3		
Xylenes (total)	n 	30.0	ND	28.1	19 -	70.0-130	93.7		
Surrogate: 4-BFB (PID)		48.0		47.8	"	50.0-150	99.6		
Matrix Spike Dup	0190457-MSI	<u>D1 B</u>	901291-03						
Benzene	1/20/99	10.0	ND	9.31	ug/l	70.0-130	93.1	15.0	1.19
Toluene	"	10.0	ND	8.95	11	70.0-130	89.5	15.0	0.448
Ethylbenzene	. 10	10.0	ND	9.32	"	70.0-130	93.2	15.0	0.107
Xylenes (total)	11	30.0	ND	28.3		70.0-130	94.3	15.0	0.638
Surrogate: 4-BFB (PID)	"	48.0	-	48.4	"	50.0-150	101	•	
Batch: 0190489	Date Prepare	d: 1/21/9	99		Extract	tion Method: EPA	5030B	(P/T)	
Blank	0190489-BLE								
Gasoline Range Hydrocarbons	1/21/99			ND	ug/l	50.0			

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

North Creek Analytical, Inc. **Environmental Laboratory Network** 



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Portland

503.906.9200 fax 503.906.9210 20354 Empire Avenue, Suite E-9, Bend, OR 97708-1883 541.383.9310 fax 541.382.7588

Nelson-Couvrette and Associates, Inc.

17311-135th Ave NE, #A-500

Project: Northshore Utility District

Sampled: 1/19/99

Project Number: 1561C97

Received:

1/20/99

Woodinville, WA 98072

Project Manager: William Benzer

Reported: 1/26/99 13:28

#### Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC		Reporting Limit	Recov.	RPD	RPD	-
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Blank (continued)	0190489-BL	<u> </u>								
Benzene	1/21/99			ND	ug/l	0.500				
Toluene	n			ND	"	0.500			-	
Ethylbenzene	n			ND	II .	0.500				
Xylenes (total)	n			ND		1.00				
Surrogate: 4-BFB (FID)	"	48.0		43.6	"	50.0-150	90.8			
Surrogate: 4-BFB (PID)	"	48.0	•	46.8	"	50.0-150	97.5			
LCS	<u>0190489-BS1</u>									
Gasoline Range Hydrocarbons	1/21/99	500		504	ug/l	70.0-130	101			
Surrogate: 4-BFB (FID)	"	48.0		53.8	<b>"</b> .	50.0-150	112		-	
<u>Duplicate</u>	0190489-DUF	21	B901316-01							
Gasoline Range Hydrocarbons	1/21/99		795	779	ug/l			25.0	2.03	
Surrogate: 4-BFB (FID)	"	48.0		44.8	" -	. 50.0-150	93.3		-	· · · · ·
Matrix Spike	0190489-MS1		B901290-02							
Benzene	1/21/99	10.0	ND	9.30	ug/l	70.0-130	93.0			
Toluene	n	10.0	ND	9.62	"	70.0-130	96.2			
Ethylbenzene .	"	10.0	ND	9.52	n	70.0-130	95.2			
Xylenes (total)	н .	30.0	ND	27.9	11	70.0-130	93.0	•		
Surrogate: 4-BFB (PID)	"	48.0		49.9	,,	50.0-150	104			
Matrix Spike Dup	<u>0190489-MSI</u>	<u>)1</u>	B901290-02							
Benzene	1/21/99	10.0	ND	9.53	ug/l	70.0-130	95.3	15.0	2.44	
Toluene	II .	10.0	ND	9.84	"	70.0-130	98.4	15.0	2.26	
Ethylbenzene	н	10.0	ND	9.57	11	70.0-130	95.7	15.0	0.524	
Xylenes (total)	и	30.0	ND ·	28.1	11	70.0-130	93.7	15.0	0.750	
Surrogate: 4-BFB (PID)	"	48.0	<del></del>	49.3	"	50.0-150	103	<del></del>		

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

loy B Chang/Project/Manager



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Portland

Nelson-Couvrette and Associates, Inc.

Project:

Northshore Utility District

1/19/99 Sampled:

17311-135th Ave NE, #A-500 Woodinville, WA 98072

Project Number:

1561C97

Received: 1/20/99

Project Manager:

William Benzer

Reported:

1/26/99 13:28

#### Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control North Creek Analytical - Bothell

	Date	Spike	Sample	QC	•	Reporting Limit	Recov.	RPD	RPD	
Analyte	Analyzed	Level	Result	Result	Units	Recov. Limits	%	Limit	%	Notes*
Batch: 0190513	Date Prepa	ared: 1/22/9	99		Extra	ction Method: EP	A 3520C/	'600 Seri	es	
<u>Blank</u>	0190513-B	LK1								
Diesel Range Hydrocarbons	1/25/99			ND	mg/l	0.250				
Heavy Oil Range Hydrocarbons	n			ND	"	0.750				
Surrogate: 2-FBP	n	0.332	•	0.236	"	50.0-150	71.1			
LCS	0190513-B	<u>S1</u>								
Diesel Range Hydrocarbons	1/25/99	2.00		1.54	mg/l	60.0-140	77.0			
Surrogate: 2-FBP	"	0.332		0.238	"	50.0-150	71.7			
<u>Duplicate</u>	0190513-D	UP1 B9	001306-02							
Diesel Range Hydrocarbons	1/25/99		0.331	0.295	mg/l			44.0	11.5	
<ul> <li>Heavy Oil Range Hydrocarbons</li> </ul>	U		· ND	ND	" .			44.0		
Surrogate: 2-FBP		0.626		0.502	"	50.0-150	80.2			



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Nelson-Couvrette and Associates, Inc.

17311-135th Ave NE, #A-500

Project:

Northshore Utility District

Sampled: 1/19/99

Project Number: 1561C97

Received: 1/20/99

Woodinville, WA 98072

Project Manager: William Benzer Reported:

1/26/99 13:28

#### **Notes and Definitions**

Note

Analyte DETECTED

ND

Analyte NOT DETECTED at or above the reporting limit

NR

Not Reported

dry

Sample results reported on a dry weight basis

Recov.

Recovery

**RPD** 

Relative Percent Difference

North Creek Analytical - Bothell

loy B Chang Project

North Creek Analytical, Inc. **Environmental Laboratory Network** 



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(425) 420-9200 (509) 924-9200 FAX 420-9210

(503) 906-9200 F.

FAX 924-9290 FAX 906-9210

## CHAIN OF CUSTODY REPORT

Work Order # 3901306

REPORT TO: Nelson - Louvre	LL + ASSON	in at The	INVOICET	O:					<del>-, - </del>				
		1976S I JAC	Same						τυ	TURNAROUND REQUEST in Business Days *			
ATTENTION William B. Be	nzer		ATTENTION:							Organie & Inorganie Analyses			
ADDRESS 17311 - 135th /	tre NE	,#A500	ADDRESS:						10				
Wadinville, WA	9807	2	Ď.							Fuels & L			
112 112 112 11 12 112 12 12 12 12 12 12			P.O. NUMBER	t:	ith.	×,	NCA QUOTE #:			Fuels & Hydrocarbon Analyses  3-4 2 1 Same that			
Immunum Al North and Harts to Mank and			Analysis	7			7 7	<del>, , , , , , , , , , , , , , , , , , , </del>	<del>-/</del>	Standard			
PROJECT NUMBER 1561 C97	<u> </u>	7 01	Request:						OTHE	<u> </u>			
SAMPLED BY: Bill Benzer /	Lynn Ri	nastad	1	/\$>/	( <del>2</del> )	/ /		/ / /		Specify.	standard may incur Rush Charges.		
CLIENT SAMPLE	SAMPLING	NCA SAMPLE ID	1 /	/\$/·	(7)				MATRIX	# OF	standard may incur Rush Charges.		
IDENTIFICATION	DATEZTIME	(Laboratory Use Only)		<u>}</u>	<del>\$</del>		/ /	/ /	(W, S, A, O),	J	COMMENTS		
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ADDITIONAL REMARKS:					TERMIN	MANIE;			<del></del> -	FIRM:	TIME:		
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### LETTER OF TRANSMITTAL **NELSON-COUVRETTE** & ASSOCIATES, INC. CONSULTING GEOTECHNICAL ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS 1561699 17311-135th Ave. NE, A-500 13424 Chain Lake Rd. Monroe, WA 98272 Tel (425) 788-5612 Fax (360) 794-4332 Woodinville, WA 98072 Tel (425) 486-1669 Fax (425) 481-2510 ElaiNe 98008-5452 > WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via\_ \_the following items: □ Plans □ Specifications □ Samples □ Copy of letter □ Prints COPIES DATE NO. DESCRIPTION 2/23/99 SAMPLIN Seri ANNUal RECEIVED MAR 2 9 1999 DEPT. OF ECOLOGY RECEIVED THESE ARE TRANSMITTED as checked below: □ Approved as submitted ☐ For approval For your use □ Approved as noted □ Returned for corrections ☐ As requested □ For review and comment REMARKS\_ AtKINSON M5. WITE NSUD reguested COPY TO

If enclosures are not as noted, kindly notify us at once.