## ESN NORTHWEST CHEMISTRY LABORATORY

Andy Seitz PROJECT SILVERDALE Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

# Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)	
Method Blank	3/12/2018	nd	nd	nd	nd	nd	78	
LCS	3/12/2018	107%	99%	101%	90%	100%	97	
DH-1	3/12/2018	3.6	86	3.9	20	580	95	
TRIP BLANK	3/12/2018	nd	nd	nd	nd	nd	106	
Reporting Limits		1.0	1.0	1.0	3.0	100		

<sup>&</sup>quot;nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%

<sup>&</sup>quot;int" Indicates that interference prevents determination.

# ESN NORTHWEST CHEMISTRY LABORATORY

Andy Seitz PROJECT SILVERDALE Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

# Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics
Method Blank	3/12/2018	3/12/2018	147	nd	(ug/L)
LCS	3/12/2018	3/12/2018	97	138%	nd
DH-1	3/12/2018	3/12/2018	143	nd	nd
Reporting Limits				250	500

<sup>&</sup>quot;---" Indicates not tested for component.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

<sup>&</sup>quot;nd" Indicates not detected at the listed detection limits.

# ESN NORTHWEST CHEMISTRY LABORATORY

Andy Seitz PROJECT SILVERDALE Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Polynuclear Aromatic Hydrocarbons in Water by Method 8270

Analytical Results

	Reporting	MTH BLK	LCS	DH-1
Date extracted	Limits	03/12/18	03/12/18	03/12/18
Date analyzed	(ug/L)	03/12/18	03/12/18	03/12/18
Naphthalene	0.1	nd	113%	nd
2-Methylnaphthalene	0.1	nd	98%	nd
1-Methylnaphthalene	0.1	nd	ns	nd
Acenaphthylene	0.1	nd	120%	nd
Acenaphthene	0.1	nd	128%	nd
Fluorene	0.1	nd	100%	nd
Phenanthrene	0.1	nd	103%	nd
Anthracene	0.1	nd	118%	nd
Fluoranthene	0.1	nd	110%	nd
Pyrene	0.1	nd	96%	nd
Benzo(a)anthracene*	0.1	nd	77%	nd
Chrysene*	0.1	nd	128%	nd
Benzo(b)fluoranthene*	0.1	nd	80%	nd
Benzo(k)fluoranthene*	0.1	nd	106%	nd
Benzo(a)pyrene*	0.1	nd	82%	nd
Indeno(1,2,3-cd)pyrene*	0.1	nd	100%	nd
Dibenzo(a,h)anthracene*	0.1	nd	133%	nd
Benzo(ghi)perylene	0.1	nd	103%	nd
Total Carcinogens		ж.	10	nd
Surrogate recoveries:				
2-Fluorobiphenyl		101%	121%	97%
o-Terphenyl-d14		139%	109%	135%

## Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte

nd - not detected at listed reporting limits

ns - not spiked

Acceptable Recovery limits: 50% TO 150%

Acceptable RPD limit: 35%

NORTHWEST, INC. Y	ESN
Services Network	Environmental

# CHAIN-OF-CUSTODY RECORD

1210 Eastside Street SE. Suite 200		RELINQUISHED BY (Signature)	8	200	RELINQUISHED BY (Signature)	18.	17.	16.		1	13.	12.	11.	10.	9.	00	7.	6.	5.	4.	3.		17/11	Sample Number	CLIENT PROJECT #:	PHONE (30) 280 4707	ADDRESS:	CLIENT:
SE Suite 20		ignature)			gnature)				V <sub>a</sub>			2 T				7			ė			30. is	3 17	er Depth	T#:	180 4	7415	C. +2
Ď			-	00		See .	N.		1 2				1	N.						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- 12 G	,	oth Time		707	5	0
10.00		DATE/TIME		ONE	DATE/TIME				200				1										0	211	5.	(60	1697	Mad
		ME	12.50	0	ME		X	1		. 4	*					\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.		per e					) /	Sample C	P		· Ral	7)
PAI		RE	1		RE							14 to 14			1. T	1	7 11 10		8		Africa -		Lean	Container Type	PROJECT MANAGER:	FAX:	-9	
		RECEIVED BY (Signature)	AM VIII	-	RECEIVED BY (Signature)			3																AND.	CT MA		NU	
100	<	S) YE	11	1	3Y (S	# 1	ă A				31	3	j. (4)	2.1		, S.	4.	Ε.					8	to How Sts	NA		0	
		gnat	(3)		ignat	1	42:		ď,	- 1		-45	12.15 12.25		•	Š.		64	3)	2.1	1	7	<		GE	1	1/4	
		ure)	2	1	ure)		1				initia		asst.	4			e <sup>d</sup>					5		8 6 6 6 O	.P.		30	t A
			\ .											124	- 511.	100		100			To the	.0	Singapore,	0			'n	ric Tie
2		-	4	7	-				Tes and		200	\$ 100 m				S					3/1		12	LOC BREDCI LOC BREDCI SERRING			CIA	
		DATE/TIME	C	21-1-16	DATE/TIME		7. de	5,		a 34					i d									6 10			1	
	X.,	/TIM	0	A	/IIM	W (C)		8.	1 N		4	144 . 15		978		2 4	1.	80		4.1		>	<	Parale 1	15, 1		78	2.1
			×,	. 4	Е				i a	, vš				Me	100	. /	- 4				1	eji.		\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$			205	
1	RECEIVE NOTES:	SEALS INTACT? Y/N/NA	CHA	TOTAL NUMBER OF CONTAINERS	1	8		7	-				34		ý.		10 19		.# 90				= 1	Case		l	-	l
1	RECEIVED GOOD COND./COLD NOTES:	S INT	CHAIN OF CUSTODY SEALS Y/N/NA	I NC	Section 1	- 1		100		11.				1	14 - 1	1. + <sub>1</sub>	1 0							RC94 S No Feb S No Fe	COLL	5	PROJ	DATE:
24	G00	ACT	CUS	JMBE		4.			*	N.			1111	11.			9		. 3					My Su Sos	LE.	LOCATION:	0 E	ij
	DD CO	N/A	TOD	R OF	S	3				1	1		p 12	5	2.0		1,4						4	8 8 4 8 8 4 X	LECTOR:	S .	JECT NAME:	
	DND.	/NA	SEA	CO	SAMPLE RECEIPT	oli u			1-4			sia.			4			4	4-91		. '	-da		To Cale	)R:	<u>.</u>	NA	5-
	/COL		LSY/	TAIN	띪			2.	4						, ŝ		1	ıi,	de la					SROSING ON	J	N	ME:	8-18
1	D		N/N	<b>IERS</b>	EF L							-		-		2					95.7			CRO Suite PINA	1	100	^ .	8
		3.	D		7	ď.	9			1		191			Ī	a lie		N.	18 1	j.				DRO Suite	He	sole	1	
		7-	(6(4)			(ec			44.			p.		an B		(2)								wo suite	d	Ā.	X	
ŀ		. "	ì			1				10	8 1		4											111	3	1	2	MI II
							584	2		20	10)					5			8	114	1.0		7	///	FR	Z	0	PA
1		100	Ť.		LAB		H		A.					- 5		111112		1		20				///	3	**************************************		PAGE
					SR.		. 2		,1				Ŕ	100							726 10			NOTES	30			
2					GR/	+ 1		0	7	-								10			À		4	TES				-
Till C					LABORATORY NOTES:									Y.		at .		-			#5				COL			
I dill Albaila illie: 24 nk 48 nk 5 DAY	2				ES:		W	VV.	1		2		Nichel .	-				F							DATE OF COLLECTION:		5 5 9	QF
77	5			14.25 (1.35)			2		10 d	7	*		31			. No	- 1					8			ON:	170		
70 77	5						4.							gir.		河里	4	7					, 1	Total Number	3-5			1
0	7				11			100							3	201	10		-	1		Ö	,	of Containers	8-18			
AT	in the										4	-				1						70		Note Number	100		1	

1210 Eastside Street SE, Suite 200 Olympia, Washington 98501

Phone: 360-459-4670 Fax: 360-459-3432

Website: www.esnnw.com
E-Mail: info@esnnw.com