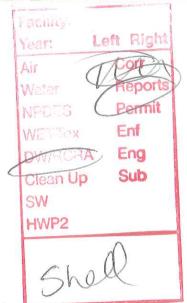


January 5, 2004

Mr. Mark Dirkx WDOE – Industrial Section P.O. Box 47600 Olympia, WA 98504-7600

Dear Mr. Dirkx,



Shell Oil Products US

Puget Sound Refinery
P.O. Box 622
Anacortes, WA 98221
Tel 360.293.0800
Fax 360.293.0808
Email pugetsound@ShellOPUS.com
Web-Plant www.shellpugetsoundrefinery.com
Web-Corporate www.shellus.com

Re: Puget Sound Refinery - RCRA Facility Investigation (RFI) and Interim Measures (SWMU 11) - EPA/Ecology ID# WAD 00927 6197

Please find attached, a Groundwater Monitoring and Sampling Report for the 4th quarter of 2004 for Puget Sound Refinery (RCRA Facility Permit Number WAD009276197, SWMU 11).

PSR appreciates Ecology's ongoing assistance regarding the remediation of the site. Questions or comments regarding this matter may be directed to Mr. Brian Rhodes at (360) 293-1761.

Sincerely,

Mark J. Koslicki

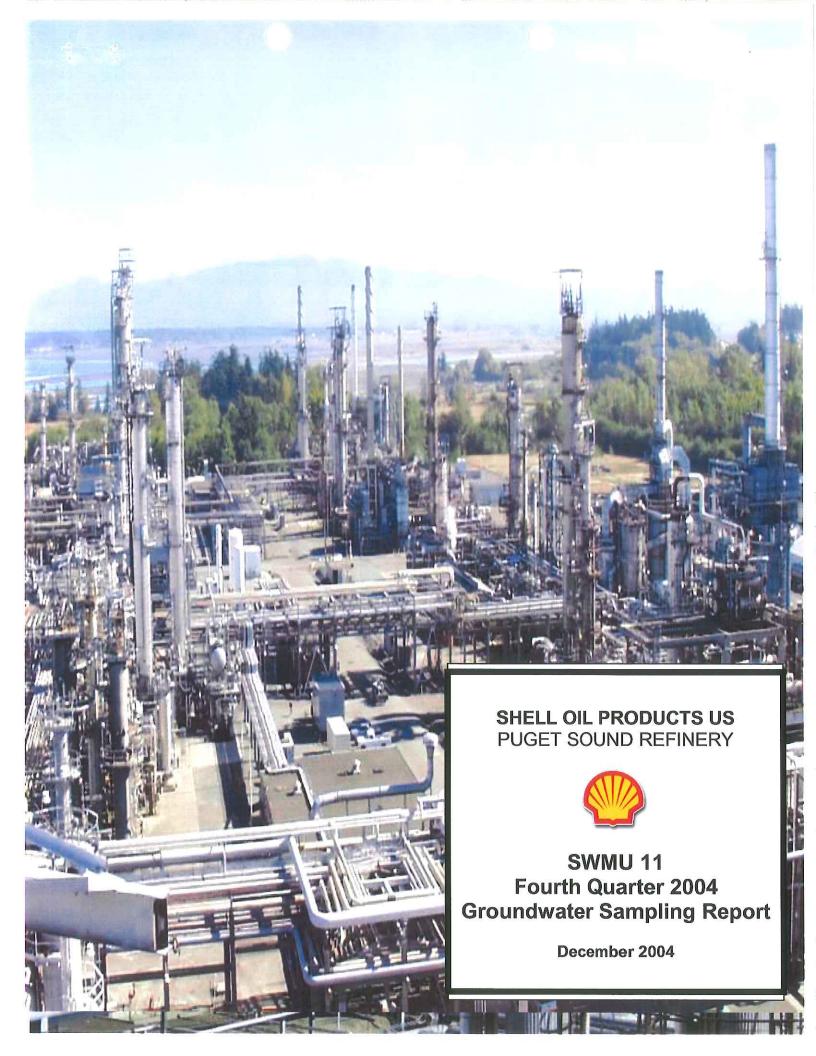
Manager - Health, Safety and Environment

BDR/br

cc: Paul Skyllingstad Dept. of Ecology

Enclosure

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GROUNDWATER MONITORING AND SAMPLING REPORT FOR THE FOURTH QUARTER OF 2004 PUGET SOUND REFINERY SWMU 11

Prepared by

Puget Sound Refinery Anacortes, Washington

December 2004

Written By:

Brian D. Rhodes, WA P.G. #2156

Bio. ph

Staff Engineer

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1.0 INTRODUCTION

This report summarizes remedial activities completed during the Fourth quarter of 2004 at Puget Sound Refinery, RCRA/RFI Solid Waste Management Unit 11. This report includes recent groundwater monitoring and sampling data collected during Oct. of 2004.

Puget Sound Refinery is located near the city of Anacortes in Washington State (Figure 1 -Site Vicinity Map). SWMU 11 is a surface impoundment (the West Impounding Basin) located in the southwest corner of the facility tank farm (Figure 2). During the fall of 1990, hydrocarbons which were thought to be associated with the unit were discovered during RFI investigative procedures (see "RFI Workplan Amendment and Project Update" - June 1991).

During April of 1992, a report entitled "Workplan for Conducting SWMU 11 Phase II RFI Activities" was submitted to EPA. The report provided details of the design and proposed installation of a light non-aqueous phase liquid (LNAPL) recovery system. The installation of the LNAPL/groundwater recovery system was recommended by EPA (EPA/Ecology ID# WAD 00927-6197) in a letter dated May 21, 1992. An "Implementation of Interim Measures Report" was submitted to EPA during February of 1993 that described the installation and start up of the LNAPL/groundwater recovery system at the site. Since the start up of the LNAPL/groundwater recovery system, groundwater monitoring has occurred on a quarterly basis and groundwater sampling has been conducted every six months. More recently, EPA has delegated oversite of the SWMU 11 project to the Department of Ecology.

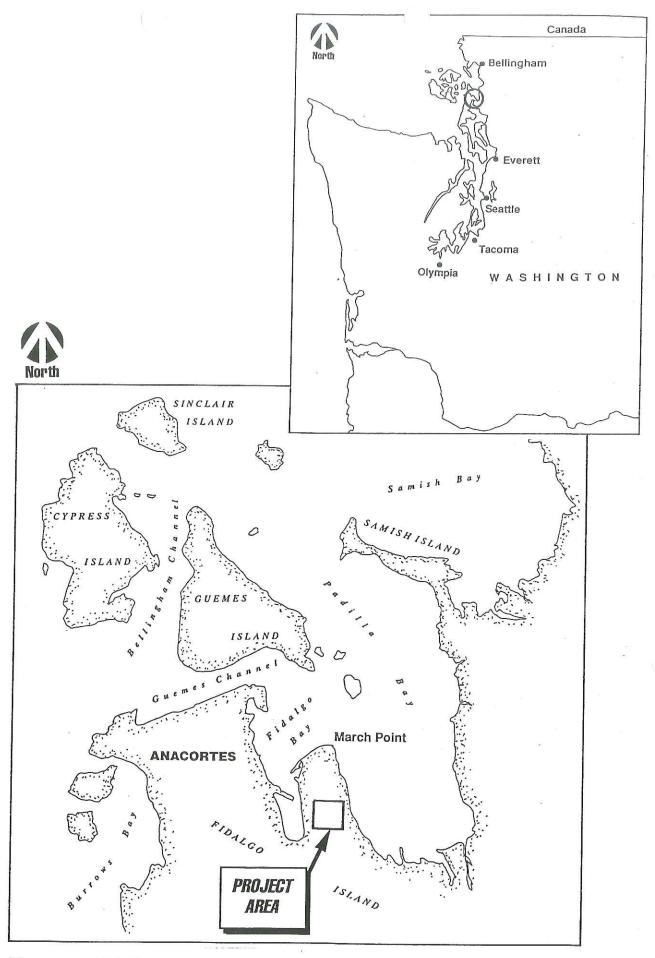
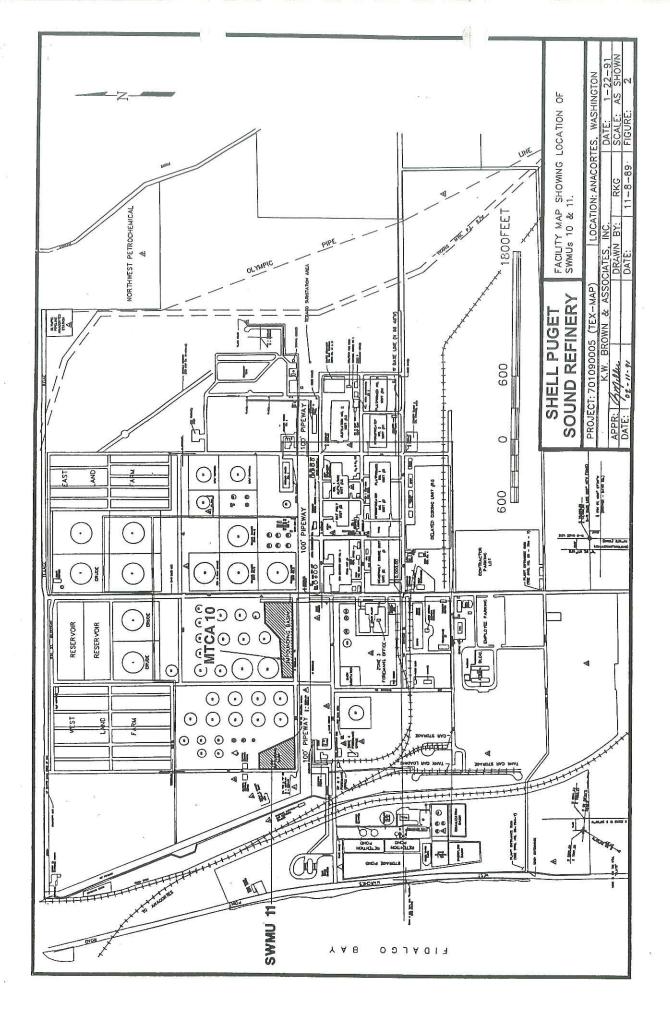


Figure 1. Vicinity map of Shell Puget Sound Refinery



2.0 FIELD WORK

2.1 GROUNDWATER SURFACE AND FREE PRODUCT MEASUREMENTS

Groundwater surface level measurements were collected from thirteen wells on August 12th, 2004. Well MW-62 and piezometer P21 were dry. Groundwater/product recovery pumps are located in wells MW-59 and MW-64. A summary of field monitoring data is included as Table 1.

Water level surface measurements were conducted using a Solinst Model 101 water level meter with alarm and stainless steel probe. Floating free product thickness measurements were conducted with a Keck Model KIR-89 Oil-Water Interface Meter. In an attempt to minimize the potential for cross-well contamination, the probe and tape for each meter was thoroughly cleaned with alconox (or equivalent) and decontaminated with distilled water following its introduction into each well. Well measurements were generally conducted in sequence from the least to the most contaminated well based on prior sampling data.

2.1.2 GROUNDWATER GRADIENT, DIRECTION AND FLOWRATE

Recent monitoring data indicates that the local groundwater gradient is generally to the west-southwest that is consistent with historic potentiometric surface data (Texaco - "1994 Annual Report").

							The second secon				
VLL UNITS	IN FEET C	R CUBIC FEET	*ALL UNITS IN FEET OR CUBIC FEET UNLESS OTHERWISE LABEI		LED						
WELL No.	WLQ	DEPTH TO	TOT DEPTH	H20 SURF	APP LNAPL	PVC MARK	WELL DIA	WATER VOL IN	BAILER	No. BAILS	PURGE H20
	(FT)	PRODUCT	(FT)	ELEV.	THICKNESS	ELEV.	(FT)	WELL (Gal.)	VOL. (Gal.)	For 3 volumes	VOLUME(Gal.)
MW-59	SN	SN	39.90	N/A	N/A	113.74	0.33	SN	SN	LNAPL	N/A
MW-60	33.68	N/A	54.40	74.29	N/A	107.97	0.33	13.523	1.359	29.86	40.57
MW-61	35.40	N/A	39.42	73.60	N/A	109.00	0.33	2.572	1.359	5.68	7.72
MW-62	Dny	N/A	25.64	DRY	DRY	108.22	0.33	NS	1.359	DRY	DRY
MW-63	32.06	N/A	40.67	77.72	N/A	109.78	0.33	5.509	1.359	LNAPL	16.53
MW-64	SN	SN	43.66	N/A	N/A	111.48	0.33	SN	1.359	LNAPL	SN
MW-65	28.18	N/A	41.37	92.23	A/N	120.41	0.33	8.439	1.359	18.63	25.32
MW-91	23.36	A/N	40.77	98.17	N/A	121.53	0.17	2.956	0.254	34.91	8.87
MW-92	31.80	N/A	36.77	86.60	N/A	118.40	0.17	0.844	0.254	9.97	2.53
MW-93	33.60	A/A	41.27	76.93	N/A	110.53	0.17	1.302	0.254	15.38	3.91
MW-94	37.18	N/A	39.60	71.48	N/A	108.66	0.17	0.411	0.254	4.85	1.23
MW-95	34.10	N/A	40.92	75.64	N/A	109.74	0.17	1.158	0.254	13.68	3.47
MW-96	33.56	N/A	40.41	77.96	N/A	111.52	0.17	1.163	0.254	13.74	3.49
MW-97	28.04	N/A	40.71	86.80	N/A	114.84	0.17	2.151	0.254	25.41	6.45
86-WW	32.62	N/A	35.54	71.48	N/A	104.10	0.17	0.496	0.254	SN	NS
P21	37	33.50	36	77.79	3.50	114.79	0.17	N/A	0.254	N/A	N/A
MW-118	32.66	N/A	83	75.36	N/A	108.02	0.17	8.547	0.254	100.95	25.64

2.2 FREE PRODUCT/GROUNDWATER RECOVERY

Table 2 is a compilation of historical floating free product (LNAPL) thickness measurements for wells in which free product has been historically observed (MW-59, MW-63, MW-64 and P-21). Product recovery pump sensors on wells MW-59 and MW-64 are set to remove any LNAPL layer until only a trace remains. In the eighteen months from 5/92 to 7/93, measured LNAPL levels in well MW-59 were reduced from 11.56' to a trace. Since 7/93 the product recovery system continues to remove free product from the recovery wells when it appears. LNAPL was not observed in Well MW-63 during the quarter. Due to the relatively slow apparent velocity of groundwater movement in soils in the vicinity of SWMU 11 (Texaco -1994 Annual Report), Puget Sound Refinery intends to continue operation of the recovery systems in Wells MW-59 and MW-64 to allow for further slow migration of hydrocarbons into the recovery wells from surrounding soils. No floating free product has been observed to date in any wells around SWMU 11 other than those mentioned above.

The recovery systems pump groundwater and/or product intermittently based on groundwater recharge rates and the presence of free product in recovery wells as determined by sensors in the wells. Quantities of product and groundwater recovered by the systems through August of 2004 are shown in Figures 4 and 5. To date a total of approximately 233,385 Gallons of groundwater and 20,691 gallons of free product have been recovered at the site.

TABLE 2 - SWIMU 11 FREE-PRODUCT THICKNESS MEASUREMENTS (FEET) DEPTH TO WATER (FT) WELL No. DEPTH TO DATE APPARENT NUMBER **MEASURED** THICKNESS (FT) PRODUCT (FT) MW-59 5/22/91 30.34 39.27 8.93 12/11/91 28.53 39.27 10.74 5/14/92 28.56 40.12 11.56 10/01/92 31.09 37.81 6.72 10/20/92 31.77 33.28 1.51* ND 32.33*** TRACE*** 07/19/93 0.01*** 5/16/94 35.56 35.57 7/22/98 30.30 3.61 *** 33.91 7/30/01 35.30 34.65 0.65*** MW-63 5/22/91 29.77 29.87 0.10 12/11/91 26.37 26.38 0.01 12/03/92 31.18 31.24 0.06** SHEEN 5/6/93 30.44 30.44 5/16/94 0.77 31.83 32.60 5/3/95 ND 32.02 ND 11/18/96 32.25 32.38 0.13 5/22/97 29.56 29.41 0.15 5/15/98 - 08/12/04 ND ND Various MW-64 5/22/91 30.34 31.07 0.73 12/11/91 29.14 29.63 0.49 10/01/92 31.62 32.24 0.62 7/19/93 ND 32.83 TRACE*** 5/16/94 ND ND*** 34.61' 7/22/98 33.96 34.03 TRACE*** ND*** 7/30/01 ND 32.22

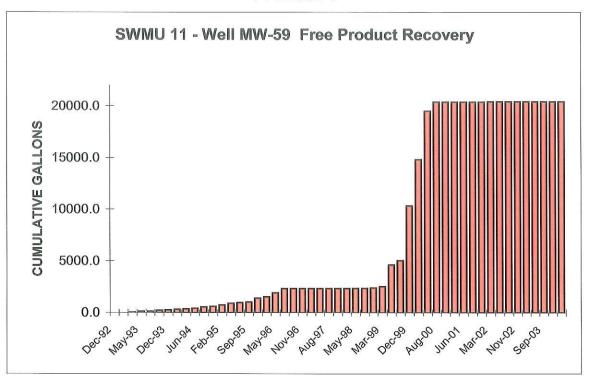
ND = None Detected; * Measured following free product (LNAPL) bailing event on 6-19-92;

^{**} Measured just prior to installation of passive LNAPL recovery system;

^{***} Measured when pumps were temporarily removed from wells

AND ADDRESS OF THE PARTY OF THE	2 Continued - SW	MU 11 ESS MEASUREMENTS	G (FEET)	C.	
	WELL No. NUMBER	DATE MEASURED	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	APPARENT THICKNESS (FT)
	P-21	5/16/94	33.83	34.12	0.29
		5/3/95	34.20	34.40	0.20
		11/18/96	33.20	36	2.8
		5/22/97	30.25	36	5.75
		5/15/98	29.98	33.48	3.5
		5/5/99	29.66	32.37	2.71
		5/8/00	29.92	34.36	4.44
		7/6/01	31.74	33.84	2.10
		10/22/02	32.50	34.76	2.26
		5/12/03	31.31	32.78	1.47
		4/8/04	31.20	34.24	3.04
		08/12/04	33.70	37.00	3.30

FIGURE 4



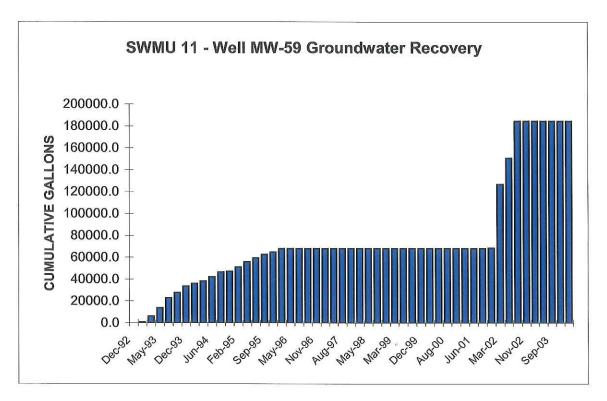
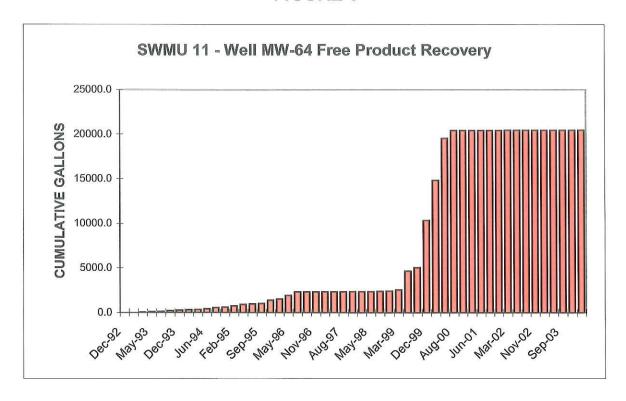
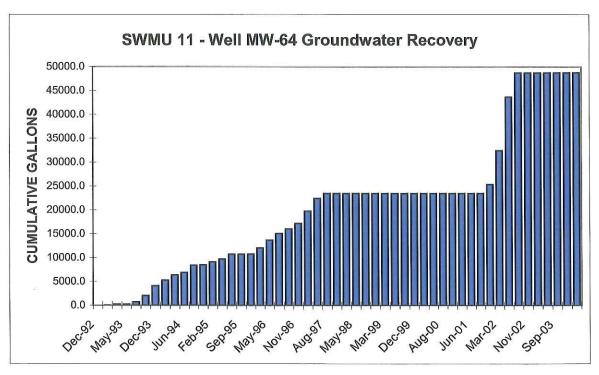


FIGURE 5





In previous reports, it was noted that neither recovery well had shown any activity during the first half of 2001. As a result, both pumps were pulled from the wells on July 30th, 2001 for maintenance and adjustments relative to the groundwater hydrocarbon surface. Once the pumps were removed from the wells, no free product was discovered in well MW-64 and 0.65 feet of free product was discovered in well MW-59. Both pumps were cleaned and new parts ordered to rebuild the pumps. Following maintenance activities, MW-64 recovered significant quantities of groundwater.

In addition to the automated free product/groundwater recovery system, Puget Sound Refinery has also installed a passive, wick type adsorbent pad in well MW-63. Since no hydrocarbon has been found in MW-63 recently, the wick was not utilized during the quarter.

Historically, free product has been detected in Potentiometric Well P-21. The pumping system at well MW-59 appears to have created a capture zone with drawdown that encompasses well P-21 based on potentiometric surface data gathered in November 2001. Historically, the groundwater gradient and flow direction has not varied significantly.

2.3 SAMPLE COLLECTION

On October 13th, 2004, groundwater samples were collected from eleven (11) wells in the vicinity of SWMU 11 including wells MW-60, MW-61, MW-63, MW-65, and MW-91 through MW-97. In addition, two check samples consisting of a travel blank of distilled water and a duplicate of well MW-60 (labeled MW-100) were prepared and analyzed along with groundwater samples for quality control purposes. Wells MW-62 and MW-98 were dry or had insufficient recharge after purging and therefore could not be sampled. Wells MW-59 and MW-64 were not sampled due to access

limitations as a result of pumping systems in the wells. The original alleged source of hydrocarbons, the shipping basin, was cleaned and lined in early 1992. Each well was purged or bailed dry with a dedicated bailer prior to sampling. The volumes of water contained in each well is shown in Table 1 (Water Level/LNAPL Field Measurement Data). Conductivity and pH measurements were conducted in conjunction with the well purging procedure. Samples were collected using a disposable (VOSS) bailer that was dedicated to each well. Following collection, samples were placed in an ice chest with blue ice and immediately shipped to a State Certified Laboratory.

3.0 ANALYTICAL RESULTS

The groundwater samples from all eleven (11) of the above mentioned wells plus the sample blank and duplicate were analyzed for 'Skinner List' Volatiles, 'Skinner List' Semi -volatiles, 'Skinner List' Metals and Northwest Total Petroleum Hydrocarbons as diesel (NWTPHd). In addition, 2-methylnaphthalene and 1,1,1-trichloroethane were included as analytes since they were the only constituents which are not on the 'Skinner List' which were detected during historic sampling rounds and were not qualified as laboratory contaminants. Table 3 includes a selected list of skinner analytes (with the exception of TPH) that were submitted for analysis during this sampling event. Tables 4 through 7 are a compilation of the findings from the laboratory analyses. Actual laboratory reports and chain of custody are included in Appendix A.

TABLE 3 - SWMU 11 GROUNDWATER SAMPLING ANALYTES

Based on 2/93 Interim Measures Report

(ie: Skinner List + selected analytes in italics)

METALS

Antimony Arsenic

Barium

Beryllium

Cadmium

Chromium

Cobalt

Lead

Mercury

Nickel

Selenium

Silver

Vanadium

Zinc

Copper

VOLATILE ORGANICS

EPA Method 8240

Benzene

Carbon Disulfide

Chlorobenzene

Chloroform

1,2-Dibromoethane

1,2-Dichloroethane

1,4-Dioxane

Methyl ethyl ketone

Styrene

Ethyl Benzene

Toluene

1,1,1-trichloroethane*

trichloroethene*

Xylenes

M-Xylene

O&P Xylene

SEMI-VOLATILES ORGANICS

(EPA Method 8270)

Anthracene

Benz(a)anthracene

Benzo(b)fluoranthene

Benzenethiol

Benzo(k)fluoranthene

Benzo(a)pyrene

Bis(2-ethylhexyl) phthalate

Butyl benzyl phthalate

Chrysene

Cresols (methylphenols)

O-Cresol

M&P Cresol

Dibenz(a,h)anthracene

2,4-Dimethylphenol

2,4-Dinitrophenol

Di-n-butyl phthalate

Dichlorobenzenes

O-Dichlorobenzene

M-Dichlorobenzene

P-Dichlorobenzene

Diethyl phthalate

7,12-Dimethylbenz(a)anthracene

Dimethyl phthalate

Di-n-octyl phthalate

Fluoranthene

Indene

Methy chrysene

1-Methylnaphthalene

2-Methylnaphthalene*

Naphthalene

4-Nitrophenol

Phenanthrene

Phenol

Pyrene

Pyridine

Quinoline

^{*}Not from skinner list

WIND IT WELL	SWMU 11 Well Sampling Event	'n			1					-		-					_			
Oct-04																				
	<u>u</u>	H =) pu	pH and Conductivity	ctiv	ity														
			Well	Well Numbers	2															
Parameter	29	-	90	6	62	63	64	65	91	92 93	3 94	1 95	96	97	98	P-21	1 SB	100		Comments
pH Mean			7.1	7		7.1		7.2	-	_	2	2	7.3 7.1	.1 7.3	က					
Conductivity		-	1120	940		870	8	800 7	790 78	780 840	810	096 0	028 0	940	_					
(mhos 10-3)		H																		
SWMU 11 Well Sampling Event	Sampling Event	+																		
Oct-04																				
	Method 8260B	260E	S	kinner	loy.	- Skinner Volatiles	(I/pn)	_		TABL	E 4)									
		\vdash																		
			Well	Well Numbers	စ															
Selected	29		09	61	62	83	64 6	65	91	92 93	3 94	1 35	96	97	86	P-21	SB	Dup 60	Reporting	Comments
Analytes																			Limit	
Benzene			49	95		pu	-	nd) pu	5 nd	pu p	pu	pu	pu			pu	49	1.0 - 10.0	
2-Butanone (MEK)	\$	F	P	ē		pu	_	n pu	u pu	pu pu	D D	pu F	nd	pu			pu	pu	1.0 - 10.0	
Carbon Disulfide		_	р	힏		P2	-	nd	nd bn	pu pu	d nd	i nd	pu	pu			pu	pu	1.0 - 10.0	
Chlorobenzene		-	pu	pu		pu	_	nd	n bu	pu pu	D D	D F	В	nd			2	pu	1.0 - 10.0	
Chloroform			pu	pu		pu	-	nd r	n bn	pu pu	D D	2	2	Б			2	nd	1.0 - 10.0	
1,2 Dichloroethane	Je	_	pu	pu		pu	.4	28 r	nd 5	50 nd	p ug	pu F	p	pu			pu	nd	1.0 - 10.0	
Ethylbenzene			2	4		21	_	nd r	nd bu	pu pu	pu	pu F	pu	pu			2	~	1.0 - 10.0	
Styrene		_	pu	pu		pu	-	nd	n bu	pu pu	d nd	pu F	P	ы			ы	pu	1.0 - 10.0	
Toluene			pu	1		pu	_	nd r	n bn	pu pu	pu p	pu l	pu	pu			pu	pu	1.0 - 10.0	
1,1,1 - Trichloroethane	thane	_	p	ъ		P	_	nd	u pu	pu pu	pu p	pu	pu	pu			pu	pu	1.0 - 10.0	
Trichloroethene			pu	pu		pu	_	, pu	15 n	pu pu	pu p	pu I	pu	pu			pu	pu	1.0 - 10.0	
Xylenes (total)			pu	pu		24	_	nd	u pu	pu pu	pu p	pu k	pu	pu			ы	pu	1.0 - 10.0	

		-														1			
Oct-04																			
Method 8270C - Skinner Semi-Volati	30C -	Skinr	ner Se	mi-Vc		(I/gu) sə			(TABI	BLE	2)								
		Well	Well Numbers	(0															
Selected	29	09	61 6	62 63	3 64	65	9	92	93	94	92	96	26	86	P-21	SB	Dup 60	Reporting	Comments
Analytes																		Limit	
Anthracene		2	N Q	2	0	9	2	S	9	QN	2	S	S			2	QN	<10	
Benzenethiol	_	2	Q.	2	_	2	2	2	2	2	2	2	2			2	Q.	<10	
Benzo(a)anthracene	_	_S	N Q	2	0	9	R	S	N Q	ND	N	N	N Q			N	ND	<10	
Benzo(b)fluoranthene		Q.	ND	ND	0	ND	ND	ND	ND	ND	ND	Q	ND			Q	QN.	<10	
Benzo(k)fluoranthene	-	N Q	ND DA	ND	-	N	Q	N	N	ND	ND	Q	ND			Q	ND	<10	
Benzo(a)pyrene	_	QN	ND	ND	0	9	S	N	N	ND	Q.	N	N			S	ND	<10	
Butyl benzyl phthalate	_	ND	ND	ND		N	ND	N	N	QN	9	Q	N			9	Q.	<10	
Chrysene	-	N O	ND	ND		ND	ND	ND	ND	ND	D	ND	N			9	ND	<10	
Dibenz(a,h)anthracene	۷	S	ND	ND	0	N	ND	ND	N	QN	S	Q	N			Q.	ND	<10	
Di-n-butyl phthalate	_	9	Q.	S	0	2	2	8	2	g	2	ND	ND			N N	ND	<10	
1,2-Dichlorobenzene	_	2	ND Qu	N	0	2	ND	QN	QN	ND	ND	ND	N			Q.	QN	<10	
1,3-Dichlorobenzene	4	N D	ND ON	P		2	S	9	9	Q	9	2	2			2	Q.	<10	
1,4 Dichlorobenzene	-	ND	ND	ND	_	9	N N	9	9	S	2	Q	2			9	ΩN	<10	
Diethyl phthalate	_	ND	ND	ND		g	R	9	2	R	2	Q	9			2	ND Q	<10	
7,12-Dimethylbenz(a)-			8	ND															
anthracene	_	ND	ND	ND		Q	9	Ð	Q	N _O	9	9	9			2	Q.	<10	
2,4-Dimethylphenol		12	ND	ND	_	9	9	9	2	N N	8	2	N			Q.	12	<10	
Dimethyl phthalate	_	ND	ND Q	ND		9	2	9	2	N N	2	9	9			2	N Q	<10	
2,4 Dinitrophenol	~	ND	ND	ND		N	9	g	Q	ND	2	9	9			Q.	N O	<10	
Di-n-octyl phthalate	-	N Q	ND Q	Q.		9	9	9	9	9	2	9	2			9	Q.	<10	
Indene	_	Q	ND Q	2	_	2	2	9	2	2	2	9	2			2	N Q	<10	
bis(2-ethylhexyl)-																			
phthalate	_	2	Q.	Q.		9	2	9	N	Q.	2	9	2			2	N Q	<10	
1-Methylnaphthalene	۷	2	N Q	42		9	2	9	2	9	9	9	Q			2	N Q	<10	
Fluoranthene	۷	- - -	N Q	N N		9	R	N N	N _D	N	9	Q	N			9	Q.	<10	
2-Methylnaphthalene	_	- Q	Q.	37		9	2	9	2	S	2	9	2			2	QN	<10	
2-Methylphenol	_	- Q	P	2		2	2	N N	N N	ND	N	N	ND			N N	ND	<10	

SwMU 11 Well Sampling Event Oct-04 Method 8270 - Skinner Semi-Volatile Selected 59 60 61 62 63 6 Analytes ND	/ent								1							_				
b s deduk					1					-			-			-				
Selected Analytes A-Methylphenol																				
Selected Analytes 4-Methylohenol	270 -	Skin	ner S	emi-\	/olati	les (L	(I/bn) st			TABLE	LE 5		Continued)	ed)						
Selected Analytes 4-Methylohenol															2					
Selected Analytes 4-Methylohenol		Well	Well Numbers	ers	1		\dashv	\dashv	\dashv	+	-		\dashv	\dashv	_	-	-			
Analytes 4-Methylohenol	29	09	61	62	83	49	92	9	92 9	93	94	95 96	97	7 98	3 P-21	1 SB	100		Reporting	Comments
4-Methylphenol													_						Limit	
101101010101		N	Q.		QN		ND	ND N	ND ON	ND ON	ND ON	ND ND	ON O	۵		2	2	•	<10	
Naphthalnene		Q.	9		36		ND	N DN	ND ON	ND	ND	ND ND	ON O	0		2	8	V	<10	
4-Nitrophenol		2	2		ND		ND	- Q	ND	ND	ND	ND ND	DN D	٥		S	R	V	<10	
Pyridine		S	2		ND		N	- QN	ND QN	ND	ND	ND ND	ON O	۵		2	9	V	<10	
Quinoline		9	9		Q.		P	- Q	ND QN	ND	ND ON	ND DN	QN Q	٥		2	9	V	<10	
Phenanthrene		9	9		9		9	2	ND ON	ND	ND ON	ND UD	QN Q	٥		N	ND	V	<10	
Phenol		9	9		Q		N O	- QN	ND ON	ND N	ND ON	ND ON	ON O	۵		N N	9	V	<10	
Pyrene		9	R		9		2	ND I	N ON	ND	ND ON	ND ON	QN Q	٥		ND	N	•	<10	
Methyl Chrysene		Ð	2		9		Ð	N ON	N ON	N ON	ND ON	ND ON	QN Q	۵		S	N N	V	<10	
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SWMU 11 Well Sampling Event	/ent																			
Oct-04		Î								- 1										
Total Extractable Hydrocarbons	table	Hydi	rocar	bons	as	Diesel	sel (mg/l)			E	FABLE	(9 <u>H</u>								
		Well	Well Numbers	ers																
Analytes	29	09	61	62	83	49	65	91	92 9	93	94	96 96	97	2 98	3 P-21	1 SB	eo Dup		Reporting	Comments
							-	\dashv	\dashv	\dashv	-	-	-	-			-		Limit	
NWTPH-Dx		12.9	20.5		32.3		0.3	0.3	0.6	0.4 0	0.4 N	ON ON	2	D Dry	>	S	9.4		0.3	

Section Signature Metalis (mg/l) (TABLE 7)			The state of the s											_		_				
Se for Metals (mg/l) (TABLE 7) Se for Metals (mg/l) (mg/l) Se for Metals (mg/l) Se f	SWMU 11 Well	Sampling Event									-									
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See 60 61 62 63 64 65 91 92 63 94 65 95 95 97 98 P21 98 90 90 90 90 90 90 90		SK SK	inner	Meta	als (m	(I/g		E A	Ä H											
Secondary Seco			747																	
10			We	E Num	pers	1			+	+	+	+	- 6	- 1	3	3	9			
NO NO NO NO NO NO NO NO	Analytes	20	8	61	82	8	25	92			+		98	97	80	P-21	SB	dnp 09	Keporting	Comments
10	Antimoni		Š	2		S		2	-	╁	╁	╁	╁	S			S	CZ	0.001	
um 0.003 0.004 0.003 0.003 0.004 0.003 0.004 0.003 0.003 0.003 0.004 0.003 0.	Allumony		ON CO	2 3		200	(0)	2000	200			2 0		2 2			2 2		5000	
1	Arsenic		0.009	0.016		0.001		600.0	0.002			0.000		0.00			2 2	800.0	0.00	
um ND ND<	Barium		0.553	0.032		U.U51		0.036	0.043	_		0.014	0000	0.024			S	0.000	0.0.0	
um 0.006 ND	Beryllium		Ω	9		Q.		2		+	-	-	-	F			9	2	0.001	
1	Cadmium		0.005			9		9		\dashv				2			9	N Q	0.001	
Na	Chromium		0.002	0000		0.005		N Q	_			0.00		0.001			9	0.002	0.001	
1	Cobalt		9	9		9		2	_		0.0						N	ND	0.001	
NG ND ND <th< td=""><td>Copper</td><td></td><td>0.003</td><td></td><td></td><td>9</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>0.001</td><td></td><td></td><td>S</td><td>0.002</td><td>0.001</td><td></td></th<>	Copper		0.003			9				-				0.001			S	0.002	0.001	
Vy ND ND <th< td=""><td>Lead</td><td></td><td>9</td><td>2</td><td></td><td>9</td><td></td><td></td><td>_</td><td>_</td><td></td><td></td><td></td><td>9</td><td></td><td></td><td>2</td><td>ND</td><td>0.001</td><td></td></th<>	Lead		9	2		9			_	_				9			2	ND	0.001	
um 0.004 0.005 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.003 0.002 0.003 0.	Mercury		9	2		2		9			_	-	-	9		2	N	ND	0.0002	
um 0.002 0.003 0.001 ND	Nickel		0.004	0.005		0.002		0.002	0.005	0.0 0.0	0.0 20						ND	0.003	0.001	
ium ND ND 0.003 ND 0.004 ND ND 0.005 0.005 0.005 0.005 0.005 0.006 0.007	Selenium		0.005	0.003		0.003		0.005					-	S			N	0.005	0.001	
ND O.00 O.005	Silver		9	2		2					-	_		9			N	ND	0.001	
	Vanadium		9			0.004		0.010		-	1111111	0.006					ND	ND	0.001	
	1 日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日																			

3.1 'SKINNER LIST' VOLATILE ORGANICS

No volatile organics were detected in groundwater above reporting limits for wells MW-93 through MW-97 and the sample blank. Table 4 summarizes the levels of selected volatile organics above PQL's found in other wells at the site. Additional full results are also provided in the laboratory analytical reports in Appendix A.

3.2 'SKINNER LIST' SEMI-VOLATILE ORGANICS

2,4-Dimethylphenol was detected in wells MW-60. Historically, Bis(2-ethylhexyl)phthalate has been detected in a number of wells at the site. No Bis(2-ethylhexyl) phthalate has been detected at the site during this sampling round. Bis (2-ethylhexyl) phthalate is a ubiquitous plasticizer and is a common 'ghost' chemical associated with sample contamination from plastics. Historic anomalous appearances of Bis (2-ethylhexyl) indicate that they are likely the result of laboratory contamination. Table 5 summarizes the levels of selected semi-volatile organics, which were detected above Practical Quantitative Limits in the vicinity of SWMU 11.

3.3 TOTAL EXTRACTABLE HYDROCARBONS

During this sampling round, a Total Extractable Hydrocarbon as diesel (WTPH-d) analysis was completed for each well where a sample was collected in addition to the analytes listed on Table 3. For petroleum related sites, TPH is useful as a non-specific screening tool which indicates the general nature and location of a hydrocarbon plume. Table 6 depicts the results of the analytical testing for TPH.

3.4 SKINNER METALS

Skinner metals that were detected in the groundwater at SWMU 11 are summarized in Table 7.

4.0 PLANNED ACTIVITIES

A dual pump hydrocarbon recovery system consisting of a water table depression pump and free product recovery pump (Workplan for Conducting SWMU 11 Phase II RFI Activities - April 1992) has been operating in wells MW-59 and MW-64 since December of 1992. A passive product recovery system has been periodically installed in well MW-63 since the middle of 1992. The operation and monitoring of the LNAPL/groundwater recovery systems will continue through 2005. Data regarding the progress of remedial activities at the site will be collected quarterly or as warranted by significant findings at the site.

APPENDIX A LABORATORY REPORTS CHAIN OF CUSTODY FORM October 13, 2004 SAMPLING ROUND



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 425.420.9200 fax 425.420.9210 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 509.924.9200 fax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Spokane

Portland

Bend

20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

30 December 2004

Brian Rhodes Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

RE: SWMU 11 Sampling

Enclosed are the results of analyses for samples received by the laboratory on 10/15/04 09:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kortland Orr

PM



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 425.420.9200 fax 425.420.9210 11922 E. 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210 20332 Empire Avenue, Suite 51, Bend, OR 97701 5711 Spokane

Portland

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

2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-92	B4J0574-01	Water	10/13/04 12:00	10/15/04 09:50
MW-91	B4J0574-02	Water	10/13/04 12:00	10/15/04 09:50
MW-93	B4J0574-03	Water	10/13/04 12:00	10/15/04 09:50
MW-61	B4J0574-04	Water	10/13/04 12:00	10/15/04 09:50
MW-60	B4J0574-05	Water	10/13/04 12:00	10/15/04 09:50
MW-94	B4J0574-06	Water	10/13/04 12:00	10/15/04 09:50
MW-95	B4J0574-07	Water	10/13/04 12:00	10/15/04 09:50
MW-96	B4J0574-08	Water	10/13/04 12:00	10/15/04 09:50
MW-97	B4J0574-09	Water	10/13/04 12:00	10/15/04 09:50
MW-63	B4J0574-10	Water	10/13/04 12:00	10/15/04 09:50
MW-65	B4J0574-11	Water	10/13/04 12:00	10/15/04 09:50
MW-100	B4J0574-12	Water	10/13/04 12:00	10/15/04 09:50
BLANK	B4J0574-13	Water	10/13/04 12:00	10/15/04 09:50

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kortland Orr, PM

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

Page 1 of 31



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 425.420.9200 fax 425.420.9210 11922 E. 1st Avenue, Spokane Valley, WA 99206-5302 509.924.9200 fax 509.924.9290 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9210 20332 Frantic Alvenue, Suite 5-1 Bend, OR 97701-5711 Spokane

Portland

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

2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

Analyte	Result	Re	porting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-92 (B4J0574-01) Water	Sampled: 10/13/04 12	:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	0.553		0.250	mg/l	1	4J27012	10/27/04	10/30/04	NWTPH-Dx	
Surrogate: 2-FBP	118 %	50-	150	-1		"	"	ë	n.	
Surrogate: Octacosane	115 %	50-	150			"	"	"	"	
MW-91 (B4J0574-02) Water	Sampled: 10/13/04 12	:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	0.307		0.250	mg/l	1	4J27012	10/27/04	10/30/04	NWTPH-Dx	
Surrogate: 2-FBP	112 %	50-	150			"		ij.	"	
Surrogate: Octacosane	122 %	50-	150			"	"	"	<i>n</i>	
MW-93 (B4J0574-03) Water	Sampled: 10/13/04 12	:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	0.374		0.250	mg/l	1	4J27012	10/27/04	10/30/04	NWTPH-Dx	
Surrogate: 2-FBP	107 %	50-	150			n	"	n	,,	
Surrogate: Octacosane	113 %	50-	150			"	"	"	n	
MW-61 (B4J0574-04) Water	Sampled: 10/13/04 12	:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	20.5		2.50	mg/l	10	4J27012	10/27/04	10/30/04	NWTPH-Dx	4
Surrogate: 2-FBP	92.7 %	50-	-150			и	u	"	•	
Surrogate: Octacosane	121 %	50-	150			"	rr .	"	n	
MW-60 (B4J0574-05) Water	Sampled: 10/13/04 12	2:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	12.9		1.25	mg/l	5	4J27012	10/27/04	10/30/04	NWTPH-Dx	
Surrogate: 2-FBP	98.4 %	50-	-150			"	"	"	,,,	
Surrogate: Octacosane	121 %	50-	-150			n	11	n	"	
MW-94 (B4J0574-06) Water	Sampled: 10/13/04 12	2:00	Receive	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	0.444		0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	
Surrogate: 2-FBP	83.5 %	50-	-150			"	Ü	"	Ü	
Surrogate: Octacosane	94.9 %	50-	-150			"	· n	n	Ü	
	MW-92 (B4J0574-01) Water Diesel Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane MW-91 (B4J0574-02) Water Diesel Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane MW-61 (B4J0574-04) Water Diesel Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane MW-60 (B4J0574-05) Water Diesel Range Hydrocarbons Surrogate: 2-FBP Surrogate: Octacosane MW-60 (B4J0574-05) Water Diesel Range Hydrocarbons Surrogate: Octacosane MW-94 (B4J0574-06) Water Diesel Range Hydrocarbons Surrogate: 2-FBP	MW-92 (B4J0574-01) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 0.553 Surrogate: 2-FBP 118 % Surrogate: Octacosane 115 % MW-91 (B4J0574-02) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 0.307 Surrogate: 2-FBP 112 % Surrogate: Octacosane 122 % MW-93 (B4J0574-03) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 0.374 Surrogate: 2-FBP 107 % Surrogate: Octacosane 113 % MW-61 (B4J0574-04) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 20.5 Surrogate: Octacosane 121 % MW-60 (B4J0574-05) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 12.9 Surrogate: Octacosane 121 % MW-94 (B4J0574-06) Water Sampled: 10/13/04 12 Diesel Range Hydrocarbons 5ampled: 10/13/04 12 Surrogate: 2-FBP 98.4 % Surrogate: 2-FBP Sampled: 10/13/04 12	Name	MW-92 (B4J0574-01) Water Sampled: 10/13/04 12:00 Receive Receive Receive Receive Range Hydrocarbons Surrogate: 2-FBP 118 % 50-150 50-150 Surrogate: Octacosane 115 % 50-150 Receive Receive Receive Receive Range Hydrocarbons 0.307 0.250 MW-91 (B4J0574-02) Water Diesel Range Hydrocarbons 0.307 0.250 0.250 Surrogate: 2-FBP Surrogate: Octacosane 122 % 50-150 Sol-150 MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons 0.374 0.250 Receive Rec	MW-92 (B4J0574-01) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 Received: 10/15/04 Surrogate: 2-FBP Surrogate: Octacosane 118 % 50-150 50-150 MW-91 (B4J0574-02) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 Received: 10/15/04 Surrogate: 2-FBP Surrogate: Octacosane 112 % 50-150 mg/l MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 Received: 10/15/04 MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 Received: 10/15/04 MW-91 (B4J0574-04) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 Received: 10/15/04 MW-61 (B4J0574-04) Water Diesel Range Hydrocarbons 20.5 2.50 mg/l Surrogate: 2-FBP Surrogate: Octacosane 121 % 50-150 50-150 MW-60 (B4J0574-05) Water Diesel Range Hydrocarbons 20.5 2.50 mg/l Surrogate: 2-FBP Surrogate: Octacosane 121 % 50-150 50-150 MW-60 (B4J0574-05) Water Diesel Range Hydrocarbons 12.9 1.25 mg/l Surrogate: Octacosane 121 % 50-150 50-150 50-150 MW-94 (B4J0574-06) Water Diesel Range Hydrocarbons Sampled: 10/13/04 12:00 </td <td>MW-92 (B4J0574-01) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 Diesel Range Hydrocarbons 0.553 0.250 mg/l 1 Surrogate: 2-FBP 118 % 50-150 50-150 50-150 MW-91 (B4J0574-02) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 0.250 mg/l 1 Surrogate: 2-FBP 112 % 50-150 50-150 mg/l 1 1 Surrogate: 2-FBP 112 % 50-150 mg/l 1 <</td> <td>MW-92 (B4J0574-01) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 Batch Diesel Range Hydrocarbons 0.553 0.250 mg/l 1 4J27012 Surrogate: 2-FBP 118 % 50-150 50-150 " " MW-91 (B4J0574-02) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " Diesel Range Hydrocarbons 0.307 0.250 mg/l 1 4J27012 Surrogate: 2-FBP 112 % 50-150 " " " WW-93 (B4J0574-03) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " WW-93 (B4J0574-04) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " Diesel Range Hydrocarbons 0.374 0.250 mg/l 1 4J27012 Surrogate: Octacosane 113 % 50-150 " " " Diesel Range Hydrocarbons 20.5 2.50 mg/l 1 4J27012 Surrogate: 2-FBP 92.7 % 50-150 " " " WW-60 (B4J0574-05) Water Sampled: 10/13/04 12:00 Received: 10/15/04</td> <td>MW-92 (B4J0574-01) Water Sampled: 10/13/04 1 ≥ 0 Receive</td> <td>MW-92 (B4J0574-01) Water Diseal Range Hydrocarbons 0.553 0.250 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 115 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 MW-91 (B4J0574-02) Water Surrogate: Octacosane 115 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Otesed Range Hydrocarbons 0.307 0.250 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 112 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 MW-93 (B4J0574-03) Water Surrogate: Octacosane 122 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 0.374 0.250 mg/l 1 4127012 10/27/04 10/30/04 MW-61 (B4J0574-04) Water Surrogate: Octacosane 113 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: Octacosane 29.2 % 50</td> <td>NW-92 (B4J0574-01) Water Diesel Range Hydrocarbons C.553 0.250 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 118 % 50-150 50-150 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx MW-91 (B4J0574-02) Water Diesel Range Hydrocarbons 0.307 0.250 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 118 % 50-150 8-0.550 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP Oil (30/4) (40/4) (40/4) (40/4) (40/4) (40/4) (40/4) 30/450 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons 8amplet: 10/13/04 12:00 Receivet: 10/15/04 09:50 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 107 % 50-150 mg/l 4127012 10/27/04 10/30/04 NWTPH-Dx MW-61 (B4J0574-04) Water Diesel Range Hydrocarbons 20.150 mg/l 10/27/04 10/27/04 10/30/04</td>	MW-92 (B4J0574-01) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 Diesel Range Hydrocarbons 0.553 0.250 mg/l 1 Surrogate: 2-FBP 118 % 50-150 50-150 50-150 MW-91 (B4J0574-02) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 0.250 mg/l 1 Surrogate: 2-FBP 112 % 50-150 50-150 mg/l 1 1 Surrogate: 2-FBP 112 % 50-150 mg/l 1 <	MW-92 (B4J0574-01) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 Batch Diesel Range Hydrocarbons 0.553 0.250 mg/l 1 4J27012 Surrogate: 2-FBP 118 % 50-150 50-150 " " MW-91 (B4J0574-02) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " Diesel Range Hydrocarbons 0.307 0.250 mg/l 1 4J27012 Surrogate: 2-FBP 112 % 50-150 " " " WW-93 (B4J0574-03) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " WW-93 (B4J0574-04) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 " Diesel Range Hydrocarbons 0.374 0.250 mg/l 1 4J27012 Surrogate: Octacosane 113 % 50-150 " " " Diesel Range Hydrocarbons 20.5 2.50 mg/l 1 4J27012 Surrogate: 2-FBP 92.7 % 50-150 " " " WW-60 (B4J0574-05) Water Sampled: 10/13/04 12:00 Received: 10/15/04	MW-92 (B4J0574-01) Water Sampled: 10/13/04 1 ≥ 0 Receive	MW-92 (B4J0574-01) Water Diseal Range Hydrocarbons 0.553 0.250 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 115 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 MW-91 (B4J0574-02) Water Surrogate: Octacosane 115 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Otesed Range Hydrocarbons 0.307 0.250 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 112 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 MW-93 (B4J0574-03) Water Surrogate: Octacosane 122 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: 2-FBP Surrogate: Octacosane 0.374 0.250 mg/l 1 4127012 10/27/04 10/30/04 MW-61 (B4J0574-04) Water Surrogate: Octacosane 113 % 50-150 mg/l 1 4127012 10/27/04 10/30/04 Surrogate: Octacosane 29.2 % 50	NW-92 (B4J0574-01) Water Diesel Range Hydrocarbons C.553 0.250 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 118 % 50-150 50-150 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx MW-91 (B4J0574-02) Water Diesel Range Hydrocarbons 0.307 0.250 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 118 % 50-150 8-0.550 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP Oil (30/4) (40/4) (40/4) (40/4) (40/4) (40/4) (40/4) 30/450 mg/l 1 4127012 10/27/04 10/30/04 NWTPH-Dx MW-93 (B4J0574-03) Water Diesel Range Hydrocarbons 8amplet: 10/13/04 12:00 Receivet: 10/15/04 09:50 1 4127012 10/27/04 10/30/04 NWTPH-Dx Surrogate: 2-FBP 107 % 50-150 mg/l 4127012 10/27/04 10/30/04 NWTPH-Dx MW-61 (B4J0574-04) Water Diesel Range Hydrocarbons 20.150 mg/l 10/27/04 10/27/04 10/30/04

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

			Reporting							
	Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
/	MW-95 (B4J0574-07) Water	Sampled: 10/13/04 12:	00 Receiv	ed: 10/15/0	4 09:50					
	Diesel Range Hydrocarbons	ND	0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	
	Surrogate: 2-FBP	3.23 %	50-150			"	ü	n.	"	X
	Surrogate: Octacosane	42.2 %	50-150			"	n	u	u	X
1	MW-96 (B4J0574-08) Water	Sampled: 10/13/04 12:	00 Receiv	ed: 10/15/0	4 09:50					
	Diesel Range Hydrocarbons	ND	0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	
	Surrogate: 2-FBP	84.3 %	50-150			"	"	"	•	
	Surrogate: Octacosane	106 %	50-150			ir .	"	"	"	
1	MW-97 (B4J0574-09) Water	Sampled: 10/13/04 12:	00 Receiv	ed: 10/15/0	4 09:50					
	Diesel Range Hydrocarbons	ND	0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	
	Surrogate: 2-FBP	82.8 %	50-150			"	W.	"	•	
	Surrogate: Octacosane	131 %	50-150			"	u ·	"	11	
1	MW-63 (B4J0574-10) Water	Sampled: 10/13/04 12:	00 Receiv	ed: 10/15/0	4 09:50					
	Diesel Range Hydrocarbons	32.3	2.50	mg/l	10	4J22009	10/22/04	10/26/04	NWTPH-Dx	
	Surrogate: 2-FBP	115 %	50-150			"	"	"	7.	
	Surrogate: Octacosane	104 %	50-150			"	"	10/25/04	н	
1	MW-65 (B4J0574-11) Water	Sampled: 10/13/04 12:	00 Receiv	ed: 10/15/0	4 09:50					
	Diesel Range Hydrocarbons	0.311	0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	(6
	Surrogate: 2-FBP	85.1 %	50-150			"	"	"	n .	
5	Surrogate: Octacosane	128 %	50-150			"	"	n	<i>n</i>	
V	MW-100 (B4J0574-12) Water	Sampled: 10/13/04 12	2:00 Recei	ved: 10/15/	04 09:50					
	Diesel Range Hydrocarbons	9.43	1.25	mg/l	5	4J22009	10/22/04	10/25/04	NWTPH-Dx	
	Surrogate: 2-FBP	84.0 %	50-150			n	"	n.	"	
	Surrogate: Octacosane	90.3 %	50-150			"	"	"	n	

North Creek Analytical - Bothell

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Spokane

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
BLANK (B4J0574-13) Water	Sampled: 10/13/04 1	2:00 Receiv	ed: 10/15/0	4 09:50					
Diesel Range Hydrocarbons	ND	0.250	mg/l	1	4J22009	10/22/04	10/25/04	NWTPH-Dx	
Surrogate: 2-FBP	81.6 %	50-150			#	<i>m</i>	"	in.	
Surrogate: Octacosane	126 %	50-150			n .:	n	"	3 Hz	

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Portland

503.906.9200 fax 503.906.9210 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588 Bend

2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

Shell Puget Sound Refinery 8505 South Texas Road

Project: SWMU 11 Sampling Project Number: PO# 4550237616

Reported:

Anacortes, WA 98221

Project Manager: Brian Rhodes

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-92 (B4J0574-01) Water	Sampled: 10/13/04 12	:00 Receive	ed: 10/15/0	1 09:50					
Silver	ND	0.00100	mg/l	Ī	4J20033	10/20/04	10/27/04	EPA 6020	
Arsenic	0.0104	0.00100	11	u	n	ï	10/22/04	D	
Barium	0.0463	0.0100	ij	ii	11	Ü	11	31	
Beryllium	ND	0.00100	ii .	11	11	ü	11	Ü	
Cadmium	ND	0.00100	11	Ĭ	11	ii	11	.11	
Cobalt	ND	0.00100	ïi	ij	30	n	31	W	
Chromium	ND	0.00100	ïi.	ij	u	"	.11	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Copper	ND	0.00100	U	"	**	n	"		
Mercury	0.000264	0.000200	ii.	ii	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00187	0.00100		n	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	"	0	11	,,,	11.	11	
Antimony	ND	0.00300	9	11	n	u	10/26/04	TI .	
Selenium	0.00191	0.00100	ü	11	ü	u	ū	n	
Vanadium	ND	0.00100	ü	n	ď		10/22/04	10	
MW-91 (B4J0574-02) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/27/04	EPA 6020	
Arsenic	0.00208	0.00100	n.		11	(0)	10/22/04	W	
Barium	0.0432	0.0100	11	10	n	u	ij	, IF	
Beryllium	ND	0.00100	117	11	9	30	n	11	
Cadmium	ND	0.00100	(0)	11	ij.	11	11	TII,	
Cobalt	ND	0.00100	90	n	u	11	II	9 11 1	
Chromium	0.00291	0.00100	11	TI.	ų	11	11	AI .	
Copper	0.00168	0.00100	311	are	11	ne	11	311	
Mercury	ND	0.000200	8183	ATC.	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00450	0.00100	311%	8108	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	311≦	3117	n	311	n	#IT	
Antimony	ND	0.00300	IIE	316	n n	311	10/26/04	\$ 11	
Selenium	0.00111	0.00100	.00	30%	u	110	u	30	
Vanadium	0.0104	0.00100	11	ii	й	11	10/22/04	Œ	

North Creek Analytical - Bothell

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210 Anchorage

Shell Puget Sound Refinery 8505 South Texas Road

Project: SWMU 11 Sampling Project Number: PO# 4550237616

Reported: 12/30/04 16:52

Anacortes, WA 98221

Project Manager: Brian Rhodes

Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

-		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-93 (B4J0574-03) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/27/04	EPA 6020	
Arsenic	0.0290	0.00100	Ü	n	11	ii.	10/22/04	II.	
Barium	ND	0.0100	n	ji)	11		u	11.	
Beryllium	ND	0.00100	ñ	in the second	11	W	w	11	
Cadmium	ND	0.00100	ii .	n	11	11	u	11	
Cobalt	0.00104	0.00100	II	0	Ü	11	**	11	
Chromium	ND	0.00100	ij	10	Ü	11	11	0.0	
Copper	ND	0.00100	y	11	Ü	17	ii.	10	
Mercury	ND	0.000200	Ü	11	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00209	0.00100	11	11	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	11	11	y	in.	ĬĬ.	311	
Antimony	ND	0.00300	11		Ü.	30)	10/26/04	310	
Selenium	ND	0.00100	tt.	n	in .	0	II	11	
, Vanadium	ND	0.00100	11	H	11	30	10/22/04		
MW-61 (B4J0574-04) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/27/04	EPA 6020	
Arsenic	0.0158	0.00100	"	w	II.	11	10/22/04		
Barium	0.0324	0.0100	9	M.	н.	11	Ħ	u	
Beryllium	ND	0.00100		M	11	11	"		
Cadmium	ND	0.00100	9	11		11	ÿ	311	
Cobalt	ND	0.00100	u.	.11	(ii)	11	9	111	
Chromium	ND	0.00100	п	11	30)	n	9	it.	
Copper	ND	0.00100	u :	316	w	au .	u	311	
Mercury	ND	0.000200	119	316	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00510	0.00100	1111	:112	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	1911	:112	.11	31	31	300	
VOW ARIS									

ND

0.00335

0.00307

0.00300

0.00100

0.00100

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10/26/04

10/22/04

Antimony

Selenium

Vanadium



Spokane

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2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119 907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery 8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Anchorage

Bend

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

1			Reporting							
	Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
′ '										
	MW-60 (B4J0574-05) Water	Sampled: 10/13/04 12		ed: 10/15/0	4 09:50					
	Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/27/04	EPA 6020	
	Arsenic	0.00880	0.00100	u	ii ii	11	Ü	10/22/04	11	
	Beryllium	ND	0.00100	-tt	ti ti	.11	u	0.	11	
	Cadmium	0.00452	0.00100	11	Ü	.00	11	U	11	
	Cobalt	ND	0.00100	11	Ü	u	ij	u	Ü	
	Chromium	0.00206	0.00100	III	ũ	30	ıπ	30	Ü	
	Copper	0.00293	0.00100	11	Œ	11	11	11	Ü	
100	Mercury	ND	0.000200	11	Ü	4J20034	10/20/04	10/22/04	EPA 7470A	
8	Nickel	0.00401	0.00100	11	11	4J20033	10/20/04	10/22/04	EPA 6020	
13	Lead	ND	0.00100		11	11	Ű	11	11	
	Antimony	ND	0.00300	10	ij	-11		10/26/04	11	
1	Selenium	0.00473	0.00100	W	Ü	0'	ii.	0.	<u>"</u>	
8	Vanadium	ND	0.00100	Tr.	ii	n	11	10/22/04	11	
	MW-60 (B4J0574-05RE1) Wa	ter Sampled: 10/13/	04 12:00 Re	ceived: 10/	15/04 09:50)				
,	Barium	0.553	0.0200	mg/l	2	4J20033	10/20/04	10/26/04	EPA 6020	
/	MW-94 (B4J0574-06) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
	Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
2.	Arsenic	0.00378	0.00100	ū	11	ŭ	9	10/22/04	ŷ.	
	Barium	0.0457	0.0100	ij	ii .	ű	ğ	u	ũ	
100	Beryllium	ND	0.00100	ü	Ü	ũ	Ü	AT.	Ü	
9	Cadmium	ND	0.00100	Ü	10	ij.	10		Ü	
50	Cobalt	0.00170	0.00100	<u>0</u>	D	ü	11	.11	in .	
2.9	Chromium	0.00120	0.00100	ij	U	ii.	11	.,	y .	
1	Copper	ND	0.00100	11	ur .	11		11		
	Mercury	ND	0.000200	9	10	4J20034	10/20/04	10/22/04	EPA 7470A	
	Nickel	0.0114	0.00100	n	11	4J20033	10/20/04	10/22/04	EPA 6020	
	Lead	ND	0.00100	ii	17	II	11	11	11	
	Antimony	ND	0.00300	ÿ.	37	u	11	10/26/04		
	Selenium	0.00100	0.00100	g	n.	<u>u</u>	11	11	u.	
	Vanadium	0.00489	0.00100	y	D.	u	H.	10/22/04	M.	
	** .00000600****************************		TELEVISION TO							

North Creek Analytical - Bothell

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Shell Puget Sound Refinery 8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

					10					
	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
/	MW-95 (B4J0574-07) Water	Sampled: 10/13/04 12	2:00 Receiv	ed: 10/15/0	4 09:50					
	Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
	Arsenic	0.00462	0.00100	11	310	S1t	u	10/22/04	30	
	Barium	0.0139	0.0100	11	11	111	11	200	II	
	Beryllium	ND	0.00100	U	11	$\overline{\alpha}$	11	11	D	
	Cadmium	ND	0.00100	Ü	10	ű	11	11	ii .	
	Cobalt	ND	0.00100	Ü	90	ű	11	11	ii .	
	Chromium	0.00200	0.00100	10	311	ű	Ü	11	it	
	Copper	0.00150	0.00100	11	u.	ũ	Ü	11	11	
	Mercury	ND	0.000200	11	11	4J20034	10/20/04	10/22/04	EPA 7470A	
	Nickel	0.00517	0.00100	11	11	4J20033	10/20/04	10/22/04	EPA 6020	
	Lead	ND	0.00100	11	11	0	n	11	11	
	Antimony	ND	0.00300	11	11	ũ	<u>u</u>	10/26/04	U	
	Selenium	ND	0.00100	III	11	Ü	17	11	au.	
	Vanadium	0.00596	0.00100	10	ш	ü	ii	10/22/04	31.	
$\sqrt{}$	MW-96 (B4J0574-08) Water	Sampled: 10/13/04 12	2:00 Receiv	ed: 10/15/0	4 09:50					
	Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
	Arsenic	0.00951	0.00100	ir.	11	19	11	10/22/04	310	
	Barium	0.0562	0.0100	11	.11	Ü	"	Ü	U	
	Beryllium	ND	0.00100	11.	11	Ü	11	ű	u	
	Cadmium	ND	0.00100	10	11	ï	11	ũ	11	
	Cobalt	0.00282	0.00100	H.	.00	11	00	ũ	11	
	Chromium	ND	0.00100	M.	W	11	10	ñ	11	
	Copper	ND	0.00100	31	.11	11	(0)	<u>u</u>	315	
	Mercury	ND	0.000200	**	11	4J20034	10/20/04	10/22/04	EPA 7470A	
	Nickel	0.00583	0.00100	11	11	4J20033	10/20/04	10/22/04	EPA 6020	
	Lead	ND	0.00100		11	iii	11	"	100	
	Antimony	ND	0.00300	n	11	n.	11	10/26/04	300	
	Selenium	ND	0.00100	n n	°u	u	:10	11	-100	
	Vanadium	0.00266	0.00100	M.	u	N)	W	10/22/04	one.	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

		Reporting		ā					
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-97 (B4J0574-09) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
Arsenic	0.00161	0.00100	11:	910:	11	30	10/22/04	300	
Barium	0.0244	0.0100	11	11	U	310	11	.11	
Beryllium	ND	0.00100	11	11	II	11	ii .	.11	
Cadmium	ND	0.00100	n	11	Ü	11	Ü	it	
Cobalt	ND	0.00100	u	11	39	11	Ü	11	
Chromium	0.00114	0.00100	n	n	11	"	n	11	
Copper	0.00105	0.00100	u	0	11	n	Ü		
Mercury	ND	0.000200	N.	U	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00510	0.00100	11		4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	n	Œ	n	96	u ·	· u	
Antimony	ND	0.00300	11	(0)	n	n	10/26/04	N.	
Selenium	ND	0.00100	11	11	n	11	17	11	
Vanadium	0.00523	0.00100	n	11	30.1	11	10/22/04		
MW-63 (B4J0574-10) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
Arsenic	0.00136	0.00100	ú	10	11	10	10/22/04	n	
Barium	0.0511	0.0100	u	0	17	700	u	Ü	
Beryllium	ND	0.00100	11	.00	11	.00	11	u	
Cadmium	ND	0.00100	11	10	11	.00	11	u	
Cobalt	ND	0.00100	11	10	11	11	11	u	
Chromium	0.00484	0.00100	11	11	11.	11	11	w	
Copper	ND	0.00100	"	.11	M	11	10	· w	
Mercury	ND	0.000200		11	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00195	0.00100	n	11	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	TI.		11	n	11	n.	
Antimony	ND	0.00300	u	Ξ <u>u</u>	.11	- 0	10/26/04	ü	
Selenium	0.00333	0.00100	au.	e.xr	11	100	11	<u>u</u>	
Vanadium	0.00388	0.00100	:10:	3.0	116	9.00	10/22/04	11	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery 8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-65 (B4J0574-11) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
Arsenic	0.00662	0.00100	200	SH	30	u	10/22/04	11:	
Barium	0.0357	0.0100	310	111	311	11	QII.	u.	
Beryllium	ND	0.00100	110	11	310	11	2310	ū	
Cadmium	ND	0.00100	11	n	11	II.	11	ű	
Cobalt	ND	0.00100	17	ű	11	**	11	11	
Chromium	ND	0.00100	11	ű	17	Ü	II .	ii	
Copper	ND	0.00100	11	ũ	11	Ü	u	ñ	
Mercury	ND	0.000200	ű.	10	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00221	0.00100	ij	11	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	u	11	11	ii	ű.	Ü	
Antimony	ND	0.00300	ü	n	11	Ü	10/26/04	ũ	
Selenium	0.00457	0.00100	W	ij	17	'n	TI.	Ü	
Vanadium	0.00974	0.00100	"	"	11	n	10/22/04	v	
MW-100 (B4J0574-12) Water	Sampled: 10/13/04	12:00 Receiv	ved: 10/15/	04 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
Arsenic	0.00939	0.00100	ıı	11	u	U	10/22/04	Ü	
Beryllium	ND	0.00100	Ü	it	u	10	ŭ	W.	
Cadmium	ND	0.00100	9	n	u		ű		
Cobalt	ND	0.00100	9	22	11	11	ij	11	
Chromium	0.00221	0.00100	ij	<u>n</u>	11	10	<u>u</u>		
Copper	0.00158	0.00100	tr.	u	11	10	9	u	
Mercury	ND	0.000200	9	,,,	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	0.00259	0.00100	n	10	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	ņ	w	q	11	U	11	
Antimony	ND	0.00300	u	11	"	11	10/26/04	110	
Selenium	0.00483	0.00100	n:	11	11	11	0	10	
Vanadium	ND	0.00100	11	10	11	31	10/22/04	m	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery 8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616

Reported:

Project Manager: Brian Rhodes

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-100 (B4J0574-12RE1) W	ater Sampled: 10/13	/04 12:00 F	Received: 1	0/15/04 09:5	50				
Barium	0.588	0.0200	mg/l	2	4J20033	10/20/04	10/26/04	EPA 6020	
BLANK (B4J0574-13) Water	Sampled: 10/13/04 1	2:00 Recei	ved: 10/15/	04 09:50					
Silver	ND	0.00100	mg/l	1	4J20033	10/20/04	10/26/04	EPA 6020	
Arsenic	ND	0.00100	311	31t.	30	"	10/22/04	II.	
Barium	ND	0.0100	200:	910	:10	U	111	n.	
Beryllium	ND	0.00100	æ	n.	316	u	"	ü	
Cadmium	ND	0.00100	10	ii	n	ij	ii .	ii.	
Cobalt	ND	0.00100	11	ü	n	11	ii .	n	
Chromium	ND	0.00100	11	Ÿ	u	n	11	ũ	
Copper	ND	0.00100	10	Ü	u	n	11	Ü	
Mercury	ND	0.000200	0	ŭ	4J20034	10/20/04	10/22/04	EPA 7470A	
Nickel	ND	0.00100	700	U	4J20033	10/20/04	10/22/04	EPA 6020	
Lead	ND	0.00100	w	ū	11	11	u	Ü	
Antimony	ND	0.00300	11	Ü	n	11	10/26/04	n	
Selenium	ND	0.00100	11	Ü	ij	n	11	11	
Vanadium	ND	0.00100	11	11	ü	D	10/22/04		

North Creek Analytical - Bothell

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

	r	Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-92 (B4J0574-01) Water	Sampled: 10/13/04 12:00	Receive	d: 10/15/0 ²	1 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/26/04	EPA 8260B	
Benzene	4.93	1.00	W.	11	111	11.	11	11	
2-Butanone	ND	10.0	11 3	11	<u>n</u>	.01	<u>n</u>	IT	
n-Butylbenzene	ND	1.00	11	11	"	307	u.	11.	
Carbon disulfide	ND	1.00	11	11	9	ш	ij.	100	
Chlorobenzene	ND	1.00	n.	11	11	311	Ü	TI.	
Chloroform	ND	1.00	14%	116	'n	an .	II.	arc .	
1,2-Dibromoethane	ND	1.00	39.0	311	п	110	11	300	
1,2-Dichloroethane	ND	1.00	11%	:110	31	316	ıτ	310	
Ethylbenzene	ND	1.00	311	(11)	40:	3 11	11	2110	
p-Isopropyltoluene	ND	1.00	303	.008	10	W.	11	11	
n-Propylbenzene	ND	1.00	307	1.00		2.00	11	:He	
Styrene	ND	1.00	W	11	10	n .	ũ	n	
Toluene	ND	1.00	u	11	11	11	ñ	u	
1,1,1-Trichloroethane	ND	1.00	N.	11	11	u	ij.	ü	
Trichloroethene	ND	1.00	11	11	U	11	ü	u	
1,2,4-Trimethylbenzene	ND	1.00	11	11	11	11	ü		
1,3,5-Trimethylbenzene	ND	1.00	11	Ħ	u	11	ũ	III.	
o-Xylene	ND	1.00	11	n	11	11	11	ii.	
m,p-Xylene	ND	2.00	11	00	11	11	11	11	
Surrogate: 1,2-DCA-d4	105 % 7	0-130			"	и	"	11	
Surrogate: Toluene-d8	97.5 % 7	0-130			"	u	"	,,,	
Surrogate: 4-BFB	97.0 % 7	0-130			"	"	"	"	
MW-91 (B4J0574-02) Water	Sampled: 10/13/04 12:00	Receive	d: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/26/04	EPA 8260B	
Benzene	ND	1.00	11	"	U	15	11	11	
2-Butanone	ND	10.0	11	31	11	11	11	(i)	
n-Butylbenzene	ND	1.00	17	10.	.97	11	II	u	
Carbon disulfide	ND	1.00	11	in the second	W	н	n .	7 U	
Chlorobenzene	ND	1.00	11	п	11	0	19	u	
Chloroform	ND	1.00	90	u	11	g.	11	u	
1,2-Dibromoethane	ND	1.00	.00	W.	11	ū	u	u	
1,2-Dichloroethane	ND	1.00	W.	u		12	u	-11	
Ethylbenzene	ND	1.00	u	u	n	11	u	11	
p-Isopropyltoluene	ND	1.00	**	**	ng.	11	311	110	
n-Propylbenzene	ND	1.00	116	11	500	19	10	II .	

North Creek Analytical - Bothell



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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	No
MW-91 (B4J0574-02) Water	Sampled: 10/13/04 12:	00 Receive	d: 10/15/0	4 09:50					
Toluene	ND	1.00	ug/l	1	4J27020	10/26/04	10/26/04	EPA 8260B	
1,1,1-Trichloroethane	15.4	1.00	17	Ü	11	11	.00	Ü	
Trichloroethene	ND	1.00	11	ij	11	ij		u	
1,2,4-Trimethylbenzene	ND	1.00	n	1)	11	Ü	11	ũ	
1,3,5-Trimethylbenzene	ND	1.00	W	Ü	U	ii.		ii .	
o-Xylene	ND	1.00	u	,,	•	ä	, m	Ü	
m,p-Xylene	ND	2.00	11	9	11	ü	.0	u u	
Surrogate: 1,2-DCA-d4	102 %	70-130			n	n	"	"	
Surrogate: Toluene-d8	96.5 %	70-130			"	"	"	<i>n</i>	
Surrogate: 4-BFB	97.5 %	70-130			"	"	"	"	
MW-93 (B4J0574-03) Water	Sampled: 10/13/04 12:	00 Receive	d: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/26/04	EPA 8260B	
Benzene	ND	1.00	II.	U	ii .	Ü	Œ	Ū	
2-Butanone	ND	10.0	ü	11	Ä	11	11	a	
n-Butylbenzene	ND	1.00	"	11	"	u u	0	u	
Carbon disulfide	ND	1.00	n	.00	"	9	u	w.	
Chlorobenzene	ND	1.00	11	10	ų	ņ	7HF	10%	
Chloroform	ND	1.00	ü	II.	ü	u	i u	30%	
1,2-Dibromoethane	ND	1.00	u	w	u	30%	SW.	30%	
1,2-Dichloroethane	ND	1.00	ш	(40)	11	10%	ाप	au .	
Ethylbenzene	ND	1.00	11	11	11	315	311	416	
p-Isopropyltoluene	ND	1.00	11	3110	31	19%	u.	an .	
n-Propylbenzene	ND	1.00	11	n.	11	000	U	11	
Styrene	ND	1.00	n	9.100	U	.0.7	ü	n.	
Toluene	ND	1.00	IJ	300	u	11	ű	O.	
1,1,1-Trichloroethane	ND	1.00	ű	10	$\widetilde{\mathfrak{M}}$.	11	11	n	
Trichloroethene	ND	1.00	U	11	10	11	11	11	
1,2,4-Trimethylbenzene	ND	1.00	11	11	11	11	n	11	
1,3,5-Trimethylbenzene	ND	1.00	11) ir	17	n	ü	TI .	
o-Xylene	ND	1.00	11	Ü	10	W.	11	30	
m,p-Xylene	ND	2.00	11	u	ű	.01	Ü	iii.	
Surrogate: 1,2-DCA-d4	102 %	70-130			"	"	"	•	
Surrogate: Toluene-d8	99.0 %	70-130			"		"	"	
Surrogate: 4-BFB	104 %	70-130			"	"	u	л	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

W = W		Reporting	-31 S2	500 (50)					
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-61 (B4J0574-04) Water	Sampled: 10/13/04 12:0	0 Receive	ed: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	ï	4J27020	10/26/04	10/26/04	EPA 8260B	
Benzene	94.6	1.00	11	0	**	11	ij	11	
2-Butanone	ND	10.0	ži .	ũ	11	11	ũ	n .	
n-Butylbenzene	ND	1.00	"	90	11	11	11	00.7	
Carbon disulfide	ND	1.00	n	30	11	11	Ü	N.	
Chlorobenzene	ND	1.00	ņ	11	11	11	ij	II	
Chloroform	ND	1.00	9	ii.	11	11	2	31	
1,2-Dibromoethane	ND	1.00	22	10	11	11	<u>ii</u>	30	
1,2-Dichloroethane	ND	1.00	, u	11	11	11.	<u>u</u>	W.	
Ethylbenzene	3.62	1.00	ü	*	n	10	ij	10	
p-Isopropyltoluene	ND	1.00	n	y	n	0	ii	11	
n-Propylbenzene	3.36	1.00	n :	y:	0		<u>u</u>	11	
Styrene	ND	1.00	W	n.	и	10	ä	10	
Toluene	ND	1.00	38	10%	ti .	11	ü	W.	
1,1,1-Trichloroethane	ND	1.00	111	10.5		11	"	20	
Trichloroethene	ND	1.00	37.0	30.0	tt.	317	11	n,	
1,2,4-Trimethylbenzene	1.05	1.00	49.3	30.0	и	11	11	410	
1,3,5-Trimethylbenzene	ND	1.00	30%	30.2	11	df	17	3 U 3	
o-Xylene	ND	1.00	11:	303	11	311	11	3107	
m,p-Xylene	ND	2.00	n	10	11	100	11	9003	
Surrogate: 1,2-DCA-d4	106 %	0-130			"	"	11	11	
Surrogate: Toluene-d8	98.0 %	0-130			"	"	11	"	
Surrogate: 4-BFB	100 %	0-130			"	"	11	"	
MW-61 (B4J0574-04RE1) Wat	er Sampled: 10/13/04	12:00 Re	ceived: 10/	15/04 09:50)				
Acetone	ND	125	ug/l	5	4J27052	10/27/04	10/27/04	EPA 8260B	
Benzene	99.6	5.00	W.	31	Ü	11		(11)	
2-Butanone	ND	50.0	11	n	ii	11	11	11	
n-Butylbenzene	ND	5.00	11	9	ü	11	11	30"	
Carbon disulfide	ND	5.00	11	W.	ŭ	11	17	Ü	
Chlorobenzene	ND	5.00	11	(0)	ij		11	30	
Chloroform	ND	5.00	11	0	11	11	11	100	
1,2-Dibromoethane	ND	5.00	17	T.	Ü	n	n	au .	
1,2-Dichloroethane	ND	5.00	n	10	11	n	n	u	
Ethylbenzene	ND	5.00	n	W.	"	N.	u		
p-Isopropyltoluene	ND	5.00	11	u.	n	u	10	11	
n-Propylbenzene	ND	5.00	ar .	u	n	Ü	11	11	
Styrene	ND	5.00	or .	11	ñ	п	11	11	

North Creek Analytical - Bothell



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Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119

907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-61 (B4J0574-04RE1) Water	Sampled: 10/13/	04 12:00 Re	ceived: 10/	15/04 09:50					
Toluene	ND	5.00	ug/l	5	4J27052	10/27/04	10/27/04	EPA 8260B	
1,1,1-Trichloroethane	ND	5.00	11	3150	11	311	11	900	
Trichloroethene	ND	5.00	3100	10 (110	30.	11	9 1 0,	
1,2,4-Trimethylbenzene	ND	5.00	.00%	30.1	11	200	"	10	
1,3,5-Trimethylbenzene	ND	5.00	u .	.0.	11.	.11	"	11	
o-Xylene	ND	5.00	п	u	11	11	ñ	и	
m,p-Xylene	ND	10.0	n.	11	n	11	ű	ii.	
Surrogate: 1,2-DCA-d4	100 %	70-130			n	"	,,	11	
Surrogate: Toluene-d8	98.5 %	70-130				"	"	"	
Surrogate: 4-BFB	98.0 %	70-130			•		"	"	
	mpled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/26/04	EPA 8260B	
Benzene	48.8	1.00	ı	iii	11	11	11	11	
2-Butanone	ND	10.0	u	W	11	17	u	500	
n-Butylbenzene	ND	1.00	11	11	11	11	31	10	
Carbon disulfide	ND	1.00	11	11	ñ	u	"	300	
Chlorobenzene	ND	1.00	11	11	ĬĬ.	iii	11	30	
Chloroform	ND	1.00	11	11	N.	ü	11	11	
1,2-Dibromoethane	ND	1.00	11	11	11	u	11	11	
1,2-Dichloroethane	ND	1.00	"	iii	11	ú	n	111	
Ethylbenzene	1.56	1.00	n	n	11	11	U	u	
p-Isopropyltoluene	ND	1.00	u		31	11		U	
n-Propylbenzene	ND	1.00		(1)	31	11		·W	
Styrene	ND	1.00	Ш	11	in	ŭ	11	Ξ <u>Ψ</u>	
Toluene	ND	1.00	11	.11	316	ij	.11	u	
1,1,1-Trichloroethane	ND	1.00	"	11	70	u	11	= 11	
Trichloroethene	ND	1.00	11.	11.		ũ	n	u	
1,2,4-Trimethylbenzene	ND	1.00	311	n,	11	ii .	т	u	
1,3,5-Trimethylbenzene	ND	1.00	302	SHE	01 9 5	11	30	ee u	
o-Xylene	ND	1.00	10	(111)	(ITE)	17	30	u	
m,p-Xylene	ND	2.00	300	300	8 11 0	"	(311)	16	
Surrogate: 1,2-DCA-d4	106 %	70-130			.,,	"	"	"	
Surrogate: Toluene-d8	98.0 %	70-130			ü	"	"	"	
Surrogate: 4-BFB	101 %	70-130			ä	"	,,,	н	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616

Reported:

Project Manager: Brian Rhodes 12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

		D (1							
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
MW-94 (B4J0574-06) Water	Sampled: 10/13/04 12	2:00 Receive	d: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	u	11	u	ű	ii.	ŭ	
2-Butanone	ND	10.0	ū	Ü	u	u	n	ü	
n-Butylbenzene	ND	1.00	11	Ü	31	u u	11	ü	
Carbon disulfide	ND	1.00	u	Ü	11	11	ū	ũ	
Chlorobenzene	ND	1.00	11	Ü	11	11	31	v	
Chloroform	ND	1.00	11	ij	11	ij		ü	
1,2-Dibromoethane	ND	1.00	11	Ū	11	Ü	(11)	u	
1,2-Dichloroethane	ND	1.00	, U	y	11	ij	11	Ü	
Ethylbenzene	ND	1.00		u	17	0	11	Ü	
p-Isopropyltoluene	ND	1.00	0	**		y.	"	Ü	
n-Propylbenzene	ND	1.00	U	11	11	u	n	Ü	
Styrene	ND	1.00	u	11	U	<u>(t</u>		<u>u</u>	
Toluene	ND	1.00	u	"	u	11	II	ij,	
1,1,1-Trichloroethane	ND	1.00	- Q	19	11	17	30	n	
Trichloroethene	ND	1.00	- g	9	a	11	u	11	
1,2,4-Trimethylbenzene	ND	1.00	200	n	ार	tr.	11	II.	
1,3,5-Trimethylbenzene	ND	1.00	501	0	11	11	711	11	
o-Xylene	ND	1.00	-11	u	11	11	116	11	
m,p-Xylene	ND	2.00	S16	11	ार	u	100	n	
Surrogate: 1,2-DCA-d4	103 %	70-130			"	"	"	11 %	
Surrogate: Toluene-d8	99.5 %	70-130			u	и	"	11 0	
Surrogate: 4-BFB	100 %	70-130			"	u	n.	Tr.	
MW-95 (B4J0574-07) Water		2:00 Receive	ed: 10/15/0	04 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	"	11/2	"	11	11	11	
2-Butanone	ND	10.0	ш	110	18	30.0	316	3107	
n-Butylbenzene	ND	1.00	11	H.	19	.00	. Itt.	.00.22	
Carbon disulfide	ND	1.00	ii	u.	ü	N.	tr.	A11.72	
Chlorobenzene	ND	1.00	ü	n .	n	u	ñ	ji i	
Chloroform	ND	1.00	Ü	ii.	n n		ü	31	
1,2-Dibromoethane	ND	1.00	ü	11	Ü	"	ű	**	
1,2-Dichloroethane	ND	1.00	ï	11	n n	11	ü	mš	
Ethylbenzene	ND	1.00	W.	**	ii		"	.00	
p-Isopropyltoluene	ND	1.00	ū	11	u	31	11	0	
n-Propylbenzene	ND	1.00	u	"	ij	11	ii	u	
Styrene	ND	1.00	ū		u	n.	"	u	
Styrono	ND	1.00							

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
MW-95 (B4J0574-07) Water	Sampled: 10/13/04 12	:00 Receive	d: 10/15/0	4 09:50					
Toluene	ND	1.00	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
1,1,1-Trichloroethane	ND	1.00	и	ii .	ű	11	10	ĵį.	
Trichloroethene	ND	1.00	Ü	Ü	ű	n	"	Ü	
1,2,4-Trimethylbenzene	ND	1.00	ij.	Ü	11	n	"	Ü	
1,3,5-Trimethylbenzene	ND	1.00	ũ	0	11	19	11	n	
o-Xylene	ND	1.00	ų.))	9	'n	"	Ü	
m,p-Xylene	ND	2.00	ų.	22	ü	ü	n	Ü	
Surrogate: 1,2-DCA-d4	101 %	70-130			"	#	"	u	
Surrogate: Toluene-d8	98.5 %	70-130			<i>n</i>	11	11	#	
Surrogate: 4-BFB	102 %	70-130			<i>y</i> :	"	"	<i>n</i>	
MW-96 (B4J0574-08) Water	Sampled: 10/13/04 12	:00 Receive	ed: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	"	u	ij	11	11	if .	
2-Butanone	ND	10.0	11	U	"	ti	11	Ü,	
n-Butylbenzene	ND	1.00	T.	0	"	n n	.11	"	
Carbon disulfide	ND	1.00	11	ii.	2	<u>n</u>		11	
Chlorobenzene	ND	1.00	17	11	n .	ir	II.	n.	
Chloroform	ND	1.00	17	11	u	n	11	n.	
1,2-Dibromoethane	ND	1.00	**	311	"	11	11	317	
1,2-Dichloroethane	ND	1.00	11	316	n	11	(016)	90%	
Ethylbenzene	ND	1.00	n	31%	11	n	306	311 3	
p-Isopropyltoluene	ND	1.00	n	111	11	U	316	30 X	
n-Propylbenzene	ND	1.00	Ü	n	11	U	SU	30.8	
Styrene	ND	1.00	ü	0	17	an .	30	313	
Toluene	ND	1.00	ü	III	11	10	90	11	
1,1,1-Trichloroethane	ND	1.00	u u	u	n	ij	11	11	
Trichloroethene	ND	1.00	ü	u	n	Ü.	11	11	
1,2,4-Trimethylbenzene	ND	1.00	ū	11	n	11	If	n	
1,3,5-Trimethylbenzene	ND	1.00	11	11	Ü	10	11	n.	
o-Xylene	ND	1.00	Ü	11	n	11	.11	n .	
m,p-Xylene	ND	2.00	ü	11	ü	10	11	TI.	
Surrogate: 1,2-DCA-d4	102 %	70-130			"	"	n.	ii .	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	n	"	
Surrogate: 4-BFB	101 %	70-130			"	"	"	,r	

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

	n	eporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-97 (B4J0574-09) Water	Sampled: 10/13/04 12:00	Receive	ed: 10/15/04	1 09:50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	u .	0	11	11	Ü	H.	
2-Butanone	ND	10.0	M.	U	31	n	ü	u	
n-Butylbenzene	ND	1.00	11	M	11	u	Ü	N.	
Carbon disulfide	ND	1.00	11	11	11	11	"	.11	
Chlorobenzene	ND	1.00	11	tt	,,	11	Ü	17	
Chloroform	ND	1.00	11	T.	11	11	11	.17	
1,2-Dibromoethane	ND	1.00	302	11	iii)	11	ii .	T.	
1,2-Dichloroethane	ND	1.00	11	w		11	Ü	Ü	
Ethylbenzene	ND	1.00	n	H	W.	10	ij	30	
p-Isopropyltoluene	ND	1.00	u		10	300	U	<u> </u>	
n-Propylbenzene	ND	1.00	W	.00	11	(11)	U	Tu.	
Styrene	ND	1.00	u	u	11	jir	n	W	
Toluene	ND	1.00	40	u	m.	w	11	11	
1,1,1-Trichloroethane	ND	1.00		10	11	.00	11	.11	
Trichloroethene	ND	1.00		u	.01	11	11	.11	
1,2,4-Trimethylbenzene	ND	1.00	11.	n n	11	11	n	11	
1,3,5-Trimethylbenzene	ND	1.00	11	11	10.	"	n	n	
o-Xylene	ND	1.00	"	ij	**	11	n	THE STATE OF THE S	
m,p-Xylene	ND	2.00	n	ü	11	ay.	300	90	
Surrogate: 1,2-DCA-d4	104 % 70	0-130				n	, m	"	
Surrogate: Toluene-d8		0-130			m.	n	#	"	
Surrogate: 4-BFB		0-130			an.	"		"	
MW-63 (B4J0574-10) Water	Sampled: 10/13/04 12:00	Receive	ed: 10/15/0	1 09-50					
Acetone	ND	25.0	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	ug/I	- <u>-</u> 11	1327020	10/20/04	10/2//04	II A 0200D	
2-Butanone	ND	10.0		11	310	in.	3116	п	
n-Butylbenzene	13.4	1.00	n	11	210	in.	30	u	
Carbon disulfide	ND	1.00	31.	11	110	10	310	11	
Chlorobenzene	ND ND	1.00	11		11		11	"	
Chloroform	ND	1.00		ï	17	ű	11	11	
1,2-Dibromoethane	ND ND	1.00	ii .	Ü	11	ñ	11	ij	
1,2-Dioromoethane	ND ND	1.00	11	ii	11	í	,,	ñ	
		1.00	11	" "	ii .	,,	11	ïi	
Ethylbenzene n Isanranyltalyana	20.5 4.20		11	ű		tř	u	ï	
p-Isopropyltoluene		1.00	11	"	n n	17	n	" "	
n-Propylbenzene	17.4	1.00	"	"	ar.	,,	"	<u></u>	
Styrene	ND	1.00		ii.	210		200	u u	

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616

Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-63 (B4J0574-10) Water	Sampled: 10/13/04 12	2:00 Receive	ed: 10/15/0	4 09:50					
Toluene	ND	1.00	ug/l	1	4J27020	10/26/04	10/27/04	EPA 8260B	
1,1,1-Trichloroethane	ND	1.00	11	u	310	-u	H	U	
Trichloroethene	ND	1.00	TH.	u	au	316	SHC.	u	
1,2,4-Trimethylbenzene	191	1.00	ú	Ū	300	200	M.	11	j
1,3,5-Trimethylbenzene	24.0	1.00	,ii	ű	11	11	ш	n	
o-Xylene	5.26	1.00	Ü	it	11	11	11	n	
m,p-Xylene	19.0	2.00	ű	ñ	и	n	ii	Û	
Surrogate: 1,2-DCA-d4	103 %	70-130			ï	ï	II	,,	
Surrogate: Toluene-d8	98.0 %	70-130			"	Ü	11	•	
Surrogate: 4-BFB	112 %	70-130			"	"	"	"	
MW-63 (B4J0574-10RE1) Wa	nter Sampled: 10/13/	04 12:00 Re	ceived: 10	/15/04 09:50)		-		
Acetone	ND	250	ug/l	10	4J27052	10/27/04	10/27/04	EPA 8260B	
Benzene	ND	10.0	"	11	u	11	11		
2-Butanone	ND	100	n	u	n	u	11	n	
n-Butylbenzene	ND	10.0	Ü	ij	11	n	**	n i	
Carbon disulfide	ND	10.0	Ü	n	11	II .	11	11	
Chlorobenzene	ND	10.0	ĬĬ.	n	11	ű	u	10	
Chloroform	ND	10.0	ïi.	ij	n	ű	ii	11	
1,2-Dibromoethane	ND	10.0	ū	0	ü	u	11	11	
1,2-Dichloroethane	ND	10.0	9	0	ũ	ű	u	11	
Ethylbenzene	17.5	10.0	11	19	<u>u</u>	ij	U	II.	
p-Isopropyltoluene	ND	10.0	"	10	ū	11	**	31	
n-Propylbenzene	13.3	10.0	"	11	ü	11	.11	[16]	
Styrene	ND	10.0))	ir.	ñ	72	11	u	
Toluene	ND	10.0	9	11	11	ii.	11	310	
1,1,1-Trichloroethane	ND	10.0	ñ	n	11	ij	u	.11	
Trichloroethene	ND	10.0	9	n.	11	ü	: iii	19	
1,2,4-Trimethylbenzene	241	10.0	11	II.	ži.	ū	: 16	n	
1,3,5-Trimethylbenzene	16.2	10.0	11	3000	"	11	311	arr	
o-Xylene	ND	10.0	31%	3100	u	11	111	(11)	
m,p-Xylene	ND	20.0	30.5	30%	U	11	:11	S(C)	
Surrogate: 1,2-DCA-d4	102 %	70-130			11	"	"	"	
Surrogate: Toluene-d8	99.5 %	70-130			n.	"	"	<i>n</i> .	
Surrogate: 4-BFB	98.5 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

	Ţ	eporting		20					1
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
/						-			
MW-65 (B4J0574-11) Water	Sampled: 10/13/04 12:00	Receiv	ed: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J27052	10/27/04	10/27/04	EPA 8260B	
Benzene	ND	1.00	711	17	10	11	11	II .	
2-Butanone	ND	10.0	ar.	11	"	11	SITE.	II .	
n-Butylbenzene	ND	1.00	11	11	u	11	311	n	
Carbon disulfide	ND	1.00	.10	11	u	11	OHE.	U	
Chlorobenzene	ND	1.00	n	n n	ш	11	316	u	
Chloroform	ND	1.00	n	ii	11	ü	11	n	
1,2-Dibromoethane	ND	1.00	11	ũ	11	n	11	n	
1,2-Dichloroethane	27.6	1.00	U	ü	19	Ü	II .	ũ,	
Ethylbenzene	ND	1.00	iii	ii	11	ü	u	Ĭŧ	
p-Isopropyltoluene	ND	1.00	i di	n	11	ij.	u	ii .	
n-Propylbenzene	ND	1.00	11	***	n	u	11	Ü	
Styrene	ND	1.00	di	n	n	it	u	Ü	
Toluene	ND	1.00	Ü	n	ij	ii.	ii.	ũ	
1,1,1-Trichloroethane	ND	1.00	"	n	u	(10)	T.	Ü	
Trichloroethene	ND	1.00	11	n	II	11	ij	ũ	
1,2,4-Trimethylbenzene	ND	1.00	11	Ü	35	11	ij	ii .	
1,3,5-Trimethylbenzene	ND	1.00	n	ii	,,,	(0)	ij.	n	
o-Xylene	ND	1.00	n	W :	11	10	и	(if	
m,p-Xylene	ND	2.00	ij	N.	11	0	ũ	11	
Surrogate: 1,2-DCA-d4	98.5 % 7	0-130			"	"	"	"	
Surrogate: Toluene-d8	98.5 % 7	0-130			,,,	"	"	H	
Surrogate: 4-BFB	100 % 7	0-130			n.	n	#	n	
MW-100 (B4J0574-12) Water	Sampled: 10/13/04 12:	n Dogoi	vod: 10/15/	04 00.50					
Acetone	ND	25.0			4107050	10/07/04	10/07/04	ED 4 00/0D	
			ug/l	1	4J27052	10/27/04	10/27/04	EPA 8260B	
Benzene 2-Butanone	48.6 ND	1.00 10.0	11			11	u u	"	
n-Butylbenzene	ND ND		# U	u	n .	n.	ë H	11	
Carbon disulfide	ND ND	1.00	n n	31	11	u	ii II	 H	
Chlorobenzene		1.00	21 10	"	1112	.00	"	30 30	
Chloroform	ND	1.00	"	11	ne	300	11	80	
	ND	1.00	n.	11	ar:	316	"	AU:	
1,2-Dibromoethane	ND	1.00	"	311	ar.	3173	"	31	
1,2-Dichloroethane	ND	1.00		317	u.	117	"	11	
Ethylbenzene	1.22	1.00	 						
p-Isopropyltoluene	ND	1.00		31.	AT 1		U No.	3113	
n-Propylbenzene	ND	1.00	11	n	11	0	II %	11	
Styrene	ND	1.00	Ü	W.	11	0	11	11	

North Creek Analytical - Bothell

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
7 mary to	Result	Limit	Omis	Dilution	Daten	Trepared	Allalyzeu	Method	1100
MW-100 (B4J0574-12) Water	Sampled: 10/13/04 12	2:00 Receiv	ed: 10/15/	04 09:50					
Toluene	ND	1.00	ug/l	1	4J27052	10/27/04	10/27/04	EPA 8260B	
1,1,1-Trichloroethane	ND	1.00	111:	11	116	11	46:	п	
Trichloroethene	ND	1.00	810	U	11	11	316	11	
1,2,4-Trimethylbenzene	ND	1.00	311	ш	316	11	11.	11	
1,3,5-Trimethylbenzene	ND	1.00	:00:	n n	3H	n	316	n.	
o-Xylene	ND	1.00	SR.	ū	30	υ	11.	11	
m,p-Xylene	ND	2.00	30	u	.0.	n	.11:	ц	
Surrogate: 1,2-DCA-d4	100 %	70-130			n	"	11	"	
Surrogate: Toluene-d8	99.5 %	70-130			u	"	u	"	
Surrogate: 4-BFB	102 %	70-130			"	"	"	"	
BLANK (B4J0574-13) Water	Sampled: 10/13/04 12	:00 Receiv	ed: 10/15/0	4 09:50					
Acetone	ND	25.0	ug/l	1	4J24010	10/24/04	10/24/04	EPA 8260B	
Benzene	ND	1.00	17	n	11	11	11	11	
2-Butanone	ND	10.0	11	ii	n	11	u.	Ü	
n-Butylbenzene	ND	1.00	n ii	ü	n	11	11	ü	
Carbon disulfide	ND	1.00	ü	Ü	ii.	U	11	ũ	
Chlorobenzene	ND	1.00	ū	10	ŭ	u	11	W.	
Chloroform	ND	1.00	ũ		u		10	11	
1,2-Dibromoethane	ND	1.00	"	11	ti	10	u	11	
1,2-Dichloroethane	ND	1.00	Ü	10	11	11	11	11	
Ethylbenzene	ND	1.00	Ü	11	11	11	п	11	
p-Isopropyltoluene	ND	1.00	Œ	11	ij	11	11	10	
n-Propylbenzene	ND	1.00	"	11	n n	"		110	
Styrene	ND	1.00	11	W	ii.	11	11	10	
Toluene	ND	1.00	11	W	ii	11	"	9)	
1,1,1-Trichloroethane	ND	1.00	<u>u</u>	**	u.	0	n	**	
Trichloroethene	ND	1.00	ij.	11	u	10	u u	11	
1,2,4-Trimethylbenzene	ND	1.00	ij	11	ij	11	U	n	
1,3,5-Trimethylbenzene	ND	1.00	ä	II.	"	11	u	n	
o-Xylene	ND	1.00	"	11	Ü	tr.	79	10	
m,p-Xylene	ND	2.00	11	3115	n	111	2:01	1178	
Surrogate: 1,2-DCA-d4	106 %	70-130			n	7(11)	"	×III.	
Surrogate: Toluene-d8	90.5 %	70-130			#		"	in.	
Surrogate: 4-BFB	89.0 %	70-130			111	"	"	<i>n</i> .	

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Anchorage

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control North Creek Analytical - Bothell

			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J22009:	Prepared 10/22/04	Using EP	A 3520C								
Blank (4J22009-BL	K1)										
Diesel Range Hydrocar	bons	ND	0.250	mg/l							
Lube Oil Range Hydro	carbons	ND	0.500	TF.							
Surrogate: 2-FBP		0.169		"	0.210		80.5	70-130			
Surrogate: Octacosane		0.237		n	0.200		118	70-130			
LCS (4J22009-BS1)	í										
Diesel Range Hydrocar	bons	1.53	0.250	mg/l	1.87		81.8	65-135			
Surrogate: 2-FBP		0.172		"	0.210		81.9	70-130			
LCS Dup (4J22009	-BSD1)										
Diesel Range Hydrocar	bons	1.62	0.250	mg/l	1.87		86.6	65-135	5.71	30	
Surrogate: 2-FBP		0.177		"	0.210		84.3	70-130			
Batch 4J27012:	Prepared 10/27/04	Using EP	A 3520C								
	171)										
Blank (4J27012-BL	IXI)										
Blank (4J27012-BL Diesel Range Hydrocar		ND	0.250	mg/l							
	bons	ND ND	0.250 0.500	mg/l							
Diesel Range Hydrocar	bons			74	0.250		112	50-150			
Diesel Range Hydrocar Lube Oil Range Hydro	bons carbons	ND		"	0.250 0.240		112 117	50-150 50-150			
Diesel Range Hydrocar Lube Oil Range Hydro Surrogate: 2-FBP	bons carbons	ND 0.280		n n							
Diesel Range Hydrocar Lube Oil Range Hydro Surrogate: 2-FBP Surrogate: Octacosane	bons carbons	ND 0.280		n n							
Diesel Range Hydrocai Lube Oil Range Hydro Surrogate: 2-FBP Surrogate: Octacosane LCS (4J27012-BS1)	bons carbons	ND 0.280 0.280	0.500	n n	0.240		117	50-150			
Diesel Range Hydrocat Lube Oil Range Hydro Surrogate: 2-FBP Surrogate: Octacosane LCS (4J27012-BS1) Diesel Range Hydrocat Surrogate: 2-FBP	bons carbons	ND 0.280 0.280	0.500	" " " mg/l	1.87		89.8	50-150 58-125			
Diesel Range Hydrocar Lube Oil Range Hydro Surrogate: 2-FBP Surrogate: Octacosane LCS (4J27012-BS1) Diesel Range Hydrocar	rbons carbons bons bons bons	ND 0.280 0.280	0.500	" " " mg/l	1.87		89.8	50-150 58-125	5.78	40	

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Shell Puget Sound Refinery 8505 South Texas Road

Project: SWMU 11 Sampling

Project Number: PO# 4550237616

Reported:

Anacortes, WA 98221

Project Manager: Brian Rhodes

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

(w. 19)			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20033:	Prepared 10/20/04	Using E	PA 3005A								
Blank (4J20033-B)	LK1)										
Silver	17	ND	0.00100	mg/l							
Arsenic		ND	0.00100	11t							
Barium		ND	0.0100	H.							
Beryllium		ND	0.00100	tt.							
Cadmium		ND	0.00100	· tt							
Cobalt		ND	0.00100	11							
Chromium		ND	0.00100	II.							
Copper		ND	0.00100	g.							
Nickel		ND	0.00100	ü							
Lead		ND	0.00100	ij.							
Antimony		ND	0.00300	ű							
Selenium		ND	0.00100	11							
Vanadium		ND	0.00100	<u>u</u>							
LCS (4J20033-BS1	1)										
Silver		0.203	0.00100	mg/l	0.200		102	80-120			
Arsenic		0.198	0.00100	и	0.200		99.0	80-120			
Barium		0.198	0.0100	2	0.200		99.0	80-120			
Beryllium		0.191	0.00100	ij.	0.200		95.5	80-120			
Cadmium		0.195	0.00100	Ü	0.200		97.5	80-120			
Cobalt		0.197	0.00100	u	0.200		98.5	80-120			
Chromium		0.198	0.00100	11	0.200		99.0	80-120			
Copper		0.198	0.00100	ii	0.200		99.0	80-120			
Nickel		0.198	0.00100	0	0.200		99.0	80-120			
Lead		0.196	0.00100	u	0.200		98.0	80-120			
Antimony		0.0475	0.00300	11%	0.0500		95.0	80-120			
Selenium		0.195	0.00100	11	0.200		97.5	80-120			
Vanadium		0.196	0.00100	n	0.200		98.0	80-120			

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Shell Puget Sound Refinery 8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20033:	Prepared 10/20/04	Using E	PA 3005A								
LCS Dup (4J20033-	·BSD1)										
Silver		0.203	0.00100	mg/l	0.200		102	80-120	0.00	20	
Arsenic		0.201	0.00100	Ü	0.200		100	80-120	1.50	20	
3arium -		0.201	0.0100	11	0.200		100	80-120	1.50	20	
Beryllium		0.193	0.00100	41%	0.200		96.5	80-120	1.04	20	
Cadmium		0.197	0.00100	in.	0.200		98.5	80-120	1.02	20	
Cobalt		0.200	0.00100	11	0.200		100	80-120	1.51	20	
Chromium		0.201	0.00100	ii	0.200		100	80-120	1.50	20	
Copper		0.200	0.00100	u	0.200		100	80-120	1.01	20	
Nickel		0.201	0.00100	AC:	0.200		100	80-120	1.50	20	
Lead		0.198	0.00100	31	0.200		99.0	80-120	1.02	20	
Antimony		0.0479	0.00300	11	0.0500		95.8	80-120	0.839	20	
Selenium		0.194	0.00100	11	0.200		97.0	80-120	0.514	20	
/anadium		0.199	0.00100	n	0.200		99.5	80-120	1.52	20	
Matrix Spike (4J20	033-MS1)					Source: B	4 J0574 -0	1			
Silver		0.0558	0.00100	mg/l	0.100	0.000490	55.3	43-124			
Arsenic		0.122	0.00100		0.100	0.0104	112	70-138			
Barium		0.150	0.0100	11	0.0995	0.0463	104	71-126			
Beryllium		0.103	0.00100	3163	0.100	ND	103	80-125			
Cadmium		0.0997	0.00100	11	0.100	ND	99.7	80-125			
Cobalt		0.0963	0.00100	11	0.0995	0.000500	96,3	73-125			
Chromium		0.102	0.00100	11	0.100	0.000300	102	76-125			
Copper		0.0980	0.00100	-10:	0.101	0.000520	96.5	71-125			
Nickel		0.0987	0.00100	ж.	0.0995	0.00187	97.3	73-125			
Lead		0.0981	0.00100	W.	0.0995	0.000400	98.2	78-125			
Antimony		0.0389	0.00300	N.	0.0500	0.00147	74.9	63-126			
Selenium		0.102	0.00100	11	0.100	0.00191	100	61-156			
Vanadium		0.103	0.00100	311	0.100	0.000890	102	75-125			

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20033:	Prepared 10/20/04	Using E	PA 3005A								
Matrix Spike Dup	(4J20033-MSD1)					Source: B	4J0574-0	1			
Silver	0.	0.0561	0.00100	mg/l	0.100	0.000490	55.6	43-124	0.536	50	
Arsenic		0.120	0.00100	010	0.100	0.0104	110	70-138	1.65	20	
Barium		0.148	0.0100	111	0.0995	0.0463	102	71-126	1.34	20	
Beryllium		0.101	0.00100	11	0.100	ND	101	80-125	1.96	20	
Cadmium		0.0992	0.00100	u	0.100	ND	99.2	80-125	0.503	20	
Cobalt		0.0964	0.00100	91%	0.0995	0.000500	96.4	73-125	0.104	20	
Chromium		0.102	0.00100	30)	0.100	0.000300	102	76-125	0.00	20	
Copper		0.0975	0.00100		0.101	0.000520	96.0	71-125	0.512	20	
Nickel		0.0982	0.00100	11	0.0995	0.00187	96.8	73-125	0.508	20	
Lead		0.0974	0.00100	11	0.0995	0.000400	97.5	78-125	0.716	20	
Antimony		0.0409	0.00300	318	0.0500	0.00147	78.9	63-126	5.01	20	
Selenium		0.104	0.00100	n	0.100	0.00191	102	61-156	1.94	20	
Vanadium		0.103	0.00100	w	0.100	0.000890	102	75-125	0.00	20	
Batch 4J20034:	Prepared 10/20/04	Using E	PA 7470A								
Blank (4J20034-Bl	LK1)										
Mercury		ND	0.000200	mg/l							
LCS (4J20034-BS1)										
Mercury		0.00502	0.000200	mg/l	0.00500		100	80-120			
LCS Dup (4J20034	1-BSD1)										
Mercury		0.00560	0.000200	mg/l	0.00500		112	80-120	10.9	20	
Matrix Spike (4J2	0034-MS1)					Source: E	84J0574-0	01			
Mercury	***	0.00501	0.000200	mg/l	0.00500	0.000264	94.9	70-130			

North Creek Analytical - Bothell

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Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control North Creek Analytical - Bothell

			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20034:	Prepared 10/20/04	Using E	PA 7470A								
Matrix Spike Dup	(4J20034-MSD1)					Source: B	4J0574-0	1			
Mercury		0.00519	0.000200	mg/l	0.00500	0.000264	98.5	70-130	3.53	20	

North Creek Analytical - Bothell

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%REC

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:52

RPD

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B - Quality Control

Spike

Source

North Creek Analytical - Bothell

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J24010:	Prepared 10/24/04	Using EP	A 5030B								
Blank (4J24010-BL)	K1)										
Acetone		ND	25.0	ug/l							
Benzene		ND	1.00	ű							
2-Butanone		ND	10.0	u							
n-Butylbenzene		ND	1.00	16							
Carbon disulfide		ND	1.00	11							
Chlorobenzene		ND	1.00	ij.							
Chloroform		ND	1.00	ü -							
1,2-Dibromoethane		ND	1.00	n							
1,2-Dichloroethane		ND	1.00	n							
Ethylbenzene		ND	1.00	9.							
p-Isopropyltoluene		ND	1.00	ũ							
n-Propylbenzene		ND	1.00	n							
Styrene		ND	1.00	11							
Toluene		ND	1.00	11							
1,1,1-Trichloroethane		ND	1.00	0							
Trichloroethene		ND	1.00	n							
1,2,4-Trimethylbenzene		ND	1.00	77							
1,3,5-Trimethylbenzene	i	ND	1.00	n							
o-Xylene		ND	1.00	n							
m,p-Xylene		ND	2.00	Ü							
Surrogate: 1,2-DCA-d4		22.0		"	20.0		110	70-130			
Surrogate: Toluene-d8		18.1		***	20.0		90.5	70-130			
Surrogate: 4-BFB		18.0		"	20.0		90.0	70-130			
LCS (4J24010-BS1)											
Benzene		17.6	1.00	ug/l	20.0	<u> </u>	88.0	80-120			
Chlorobenzene		20.0	1.00	n	20.0		100	77-120			
Toluene		16.0	1.00	n .	20.0		80.0	80-120			
Surrogate: 1,2-DCA-d4		20.2		"	20.0		101	70-130			
Surrogate: Toluene-d8		18.4		"	20.0		92.0	70-130			
Surrogate: 4-BFB		18.4		11	20.0		92.0	70-130			

North Creek Analytical - Bothell

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907.563.9200 fax 907.563.9210

Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B - Quality Control North Creek Analytical - Bothell

., .,			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J24010: 1	Prepared 10/24/04	Using EP	A 5030B								
LCS Dup (4J24010-B	SD1)										
Benzene	79	18.6	1.00	ug/l	20.0		93.0	80-120	5.52	20	
Chlorobenzene		20.8	1.00	10	20.0		104	77-120	3.92	20	
Toluene		17.2	1.00	n.	20.0		86.0	80-120	7.23	20	
Surrogate: 1,2-DCA-d4		20.2		***	20.0		101	70-130			
Surrogate: Toluene-d8		18.2		"	20.0		91.0	70-130			
Surrogate: 4-BFB		18.2		"	20.0		91.0	70-130			
Batch 4J27020:	Prepared 10/26/04	Using EP	A 5030B								
Blank (4J27020-BLK	1)										
Acetone		ND	25.0	ug/l							
Benzene		ND	1.00	11							
2-Butanone		ND	10.0	it:							
n-Butylbenzene		ND	1,00	11							
Carbon disulfide		ND	1.00	11							
Chlorobenzene		ND	1.00	11							
Chloroform		ND	1.00	H.							
1,2-Dibromoethane		ND	1.00	300							
1,2-Dichloroethane		ND	1.00	11							
Ethylbenzene		ND	1.00	11							
p-Isopropyltoluene		ND	1.00								
n-Propylbenzene		ND	1.00	11							
Styrene		ND	1.00	n							
Toluene		ND	1.00	11							
1,1,1-Trichloroethane		ND	1.00								
Trichloroethene		ND	1.00	"							
1,2,4-Trimethylbenzene		ND	1.00	.11							
1,3,5-Trimethylbenzene		ND	1.00	11	8						
o-Xylene		ND	1.00	n							
m,p-Xylene		ND	2.00	11							
Surrogate: 1,2-DCA-d4		20.4		u	20.0		102	70-130			
Surrogate: Toluene-d8		19.0		"	20.0		95.0	70-130			
Surrogate: 4-BFB		19.7		u	20.0		98.5	70-130			

North Creek Analytical - Bothell

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B - Quality Control North Creek Analytical - Bothell

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J27020: Prepared 10/26/04	Using EP	A 5030B								
LCS (4J27020-BS1)										
Benzene	18.7	1.00	ug/l	20.0		93.5	80-120			
Chlorobenzene	18.7	1.00	Ü	20.0		93.5	77-120			
Γoluene	19.7	1.00	Ü	20.0		98.5	80-120			
Surrogate: 1,2-DCA-d4	20.2		n	20.0		101	70-130			
Surrogate: Toluene-d8	20.8		"	20.0		104	70-130			
Surrogate: 4-BFB	21.0		"	20.0		105	70-130			
LCS Dup (4J27020-BSD1)										
Benzene	18.0	1.00	ug/l	20.0		90.0	80-120	3.81	20	
Chlorobenzene	17.3	1.00	111	20.0		86.5	77-120	7.78	20	
Гoluene	18,2	1,00	11	20.0		91.0	80-120	7.92	20	
Surrogate: 1,2-DCA-d4	20.1		u	20.0		100	70-130			
Surrogate: Toluene-d8	20.1		"	20.0		100	70-130			
Surrogate: 4-BFB	22.3		"	20.0		112	70-130			
Datab 4127052. Duamanal 10/27/04	Main - ED	1 5020D								
batch 4J2/052: Prepared 10/2//04	USING EP	A SUJUB								
Batch 4J27052: Prepared 10/27/04 Blank (4J27052-BLK1)	Using EP	A 5030B								
Blank (4J27052-BLK1) Acetone	ND	25.0	ug/l							
Blank (4J27052-BLK1)		25.0	ug/l							
Blank (4J27052-BLK1) Acetone	ND									111111111111111111111111111111111111111
Blank (4J27052-BLK1) Acetone Benzene	ND ND	25.0 1.00	11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone	ND ND ND	25.0 1.00 10.0	11	H						.,11
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene	ND ND ND ND	25.0 1.00 10.0 1.00	11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide	ND ND ND ND ND	25.0 1.00 10.0 1.00 1.00	11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform	ND ND ND ND ND ND ND	25.0 1.00 10.0 1.00 1.00 1.00	" " "							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane	ND ND ND ND ND ND ND ND ND	25.0 1.00 10.0 1.00 1.00 1.00 1.00	11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane	ND	25.0 1.00 10.0 1.00 1.00 1.00	11 11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane Ethylbenzene	ND	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane Ethylbenzene p-Isopropyltoluene	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene p-Isopropyltoluene n-Propylbenzene	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11 11 11 11 11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene p-Isopropyltoluene n-Propylbenzene Styrene	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11 11 11 11 11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene p-Isopropyltoluene n-Propylbenzene Styrene Toluene	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11 11 11 11 11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene p-Isopropyltoluene n-Propylbenzene Styrene Toluene 1,1,1-Trichloroethane	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11 11 11 11 11 11 11 11 11							
Blank (4J27052-BLK1) Acetone Benzene 2-Butanone n-Butylbenzene Carbon disulfide Chlorobenzene Chloroform 1,2-Dibromoethane 1,2-Dichloroethane Ethylbenzene p-Isopropyltoluene n-Propylbenzene Styrene Toluene	ND N	25.0 1.00 10.0 1.00 1.00 1.00 1.00 1.00 1	11 11 11 11 11 11 11 11 11 11 11 11 11							

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Shell Puget Sound Refinery

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Volatile Organic Compounds (Modified Skinner List) by EPA Method 8260B - Quality Control North Creek Analytical - Bothell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4J27052:	Prepared 10/27/04	Using EF	A 5030B								
Blank (4J27052-BL	.K1)										
o-Xylene		ND	1.00	ug/l							
m,p-Xylene		ND	2.00	.11							
Surrogate: 1,2-DCA-d-	4	20.6		n	20.0		103	70-130			
Surrogate: Toluene-d8		20.3		"	20.0		102	70-130			
Surrogate: 4-BFB		19.7		"	20.0		98.5	70-130			
LCS (4J27052-BS1)										
Benzene		18.9	1.00	ug/l	20.0		94.5	80-120			
Chlorobenzene		18.9	1.00	111	20.0		94.5	77-120			
Toluene		19.6	1.00	· W	20.0		98.0	80-120			
Surrogate: 1,2-DCA-d	4	19.9		"	20.0		99.5	70-130			
Surrogate: Toluene-d8		19.7		"	20.0		98.5	70-130			
Surrogate: 4-BFB		20.3		"	20.0		102	70-130			
LCS Dup (4J27052	-BSD1)										
Benzene		18.3	1.00	ug/l	20.0		91.5	80-120	3.23	20	
Chlorobenzene		19.0	1.00	ii.	20.0		95.0	77-120	0.528	20	
Toluene		19.4	1.00	11	20.0		97.0	80-120	1.03	20	
Surrogate: 1,2-DCA-d	4	19.9	HICH.	"	20.0		99.5	70-130			
Surrogate: Toluene-d8	ľ.	20.3		"	20.0		102	70-130			
Surrogate: 4-BFB		20.0		H	20.0		100	70-130			

North Creek Analytical - Bothell

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Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported:

12/30/04 16:52

Notes and Definitions

E Estimated value. The reported value exceeds the calibration range of the analysis.

X See case narrative.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

Not Reported NR

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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30 December 2004

Brian Rhodes Shell Puget Sound Refinery 8505 South Texas Road Anacortes, WA 98221 RE: SWMU 11 Sampling

Enclosed are the results of analyses for samples received by the laboratory on 10/15/04 09:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

DRAFT REPORT
DATA SUBJECT TO CHANGE

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DRAFT: MW-92	B4J0574-01	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-91	B4J0574-02	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-93	B4J0574-03	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-61	B4J0574-04	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-60	B4J0574-05	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-94	B4J0574-06	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-95	B4J0574-07	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-96	B4J0574-08	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-97	B4J0574-09	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-63	B4J0574-10	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-65	B4J0574-11	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: MW-100	B4J0574-12	Water	10/13/04 12:00	10/15/04 09:50
DRAFT: BLANK	B4J0574-13	Water	10/13/04 12:00	10/15/04 09:50

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-92 (B4J0574-01) Water	Sampled: 10	/13/04 12:00	Received	l: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/21/04	EPA 8270C	
Anthracene	ND	10.0	î	11	u	ű	30	ñ	
Benzo (a) anthracene	ND	10.0	u	11:5	:11	u	310	**	
Benzo (a) pyrene	ND	10.0	ŭ	11	II.	ü	W.	n	
Benzo (b) fluoranthene	ND	10.0	ij	11	U.	Ü	0	n	
Benzo (k) fluoranthene	ND	10.0	ũ	n	u u	11	31	n	
Benzo (ghi) perylene	ND	10.0	ű	n	Ü	n	311	n	
Bis(2-ethylhexyl)phthalate	ND	10.0	11	107	"	11	311	u	
Butyl benzyl phthalate	ND	10.0	11	30%	ij	11	11	n	
Chrysene	ND	10.0	ij.	300	U	U	n	W.	
Di-n-butyl phthalate	ND	10.0	Ü	iii	ŭ	U	n	ii .	
Dibenz (a,h) acridine	ND	10.0	ñ	.0.7	u	u	31.	31	A-01
Dibenz (a,h) anthracene	ND	10.0	"	W	11	11	au	,,	
1,2-Dichlorobenzene	ND	10.0	"		ű	ij.	an .	10 E	
1,3-Dichlorobenzene	ND	10.0	ij	11	ü	11	u	0.	
1,4-Dichlorobenzene	ND	10.0	ü	u.	n	11	ii.	ii	
Diethyl phthalate	ND	10.0	u	ate	11	11	310	31.3	
7,12-Dimethylbenz (a) anthracene	ND	10.0	u	11	u.	!!	11	u	A-01
2,4-Dimethylphenol	ND	10.0	ŭ	11	<u>u</u>	9	11	30.7	
Dimethyl phthalate	ND	10.0	Ü	11	ü	Ü	11	30	
2,4-Dinitrophenol	ND	10.0	u .)).	Ü	ñ	11	w.	
Fluoranthene	ND	10.0	11	3110	u	n n	111	311	
Fluorene	ND	10.0	11	ar.	ū	0	11	"	
Indene	ND	10.0	9	n.	ū	31	in	"	A-01
Indeno (1,2,3-cd) pyrene	ND	10.0	11	W	ũ	u ·	u	Û.	
6-Methyl chrysene	ND	10.0	n	3.00	ú	31	30	20.0	
1-Methylnaphthalene	ND	10.0	11	M.	11	110	ar .	W.	A-01
2-Methylnaphthalene	ND	10.0	22	**	11	11	11	300	
2-Methylphenol	ND	10.0	0	**	17	W	11	.0	
3 & 4-Methylphenol	ND	10.0	ñ	11	n	n	11	11	
Naphthalene	ND	10.0	ũ	319	"	31.5		8116	
4-Nitrophenol	ND	10.0	31	11	ü	u ·	- in	11,	
Di-n-octyl phthalate	ND	10.0	n	11	0		<u>u</u>	n	
Phenanthrene	ND	10.0	11	n	ũ	u	Ü	n.	
Phenol	ND	10.0	17	n	ü	u	ũ	n n	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1	DRAFT: MW-92 (B4J0574-01) Water	Sampled: 1	0/13/04 12:00	Received	: 10/15/04	09:50				A-01b, AF-X
	Pyrene	ND	10.0	ug/l	1	4J20009	10/20/04	11/21/04	u.	
	Pyridine	ND	10.0	11	9		11	11	11	
	Quinoline	ND	10.0	n	Ū	n	Ü	II .	11	
	Thiophenol	ND	10.0	303	31	11	31.5	TH.	310	
	Surrogate: 2-FBP	42.6 %	41-129			"	"	n n	11	
	Surrogate: 2-FP	7.92 %	18-124			n	11	n	w	A-02, J
	Surrogate: Nitrobenzene-d5	31.4%	44-124			n:	"	"	***	A-02
	Surrogate: Phenol-d6	3.64 %	25-122			<i>n</i>	"	"	"	A-02, J
	Surrogate: p-Terphenyl-d14	53.2 %	10-132			#	"	"	· ·	
	Surrogate: 2,4,6-TBP	42.0 %	19-132			n:	3112	"	**	
/	DRAFT: MW-91 (B4J0574-02) Water	Sampled: 1	0/13/04 12:00	Received	: 10/15/04	09:50				A-01b, AF-X
	Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/21/04	EPA 8270C	
	Anthracene	ND	10.0	11	11	n	H	ii.	W	
	Benzo (a) anthracene	ND	10.0	W.	11	Ü	11	ũ	T.	
	Benzo (a) pyrene	ND	10.0	30	tr.	u	.0.2	ũ	.11	
	Benzo (b) fluoranthene	ND	10.0	3110	111	ш	300	11	MG	
	Benzo (k) fluoranthene	ND	10.0	11.	10	11		ũ	10	
	Benzo (ghi) perylene	ND	10.0	11	10	11	11	ü	**	
	Bis(2-ethylhexyl)phthalate	ND	10.0	11	11	ĬŤ	11	ű	•	
	Butyl benzyl phthalate	ND	10.0	316	000	11	11	11	20.	
	Chrysene	ND	10,0	8118	310	"	11	II .	711	
	Di-n-butyl phthalate	ND	10.0	ш	***	ij	10	ü	(u.	
	Dibenz (a,h) acridine	ND	10.0	n	11	n	10	<u>u</u>	11	A-01
	Dibenz (a,h) anthracene	ND	10.0	11	11	ü	u	ü	11	
	1,2-Dichlorobenzene	ND	10.0	31	1111	ar :	201	11	:11	
	1,3-Dichlorobenzene	ND	10.0	11	11	11	w	11	u	
	1,4-Dichlorobenzene	ND	10.0	11		11	.,		n.	
	Diethyl phthalate	ND	10.0	11	, o	11	n	U	и	
	7,12-Dimethylbenz (a) anthracene	ND	10.0	11	Ü	n	11	Ü	u	A-01
	2,4-Dimethylphenol	ND	10.0	200	are:	3000	310	11	840	
	Dimethyl phthalate	ND	10.0	u	11	10	311	11	E	
	2,4-Dinitrophenol	ND	10.0	10	11	u	30	11*	u	
	Fluoranthene	ND	10.0	11	ij	11	ır	11	u	
	Fluorene	ND	10.0							

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C

North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-91 (B4J0574-02) Water	Sampled: 1	0/13/04 12:00	Received	1: 10/15/04	09:50				A-01b, AF-X
Indene	ND	10.0	ug/l	1	4J20009	10/20/04	11/21/04	ű	A-01
Indeno (1,2,3-cd) pyrene	ND	10.0	u	tt	31	u	31	11	
6-Methyl chrysene	ND	10.0	a	tr.		ii.	M.	u	
1-Methylnaphthalene	ND	10.0	17	11	ii.	<u>u</u>	10.	Ü	A-01
2-Methylnaphthalene	ND	10.0	11	ü		ũ	11	u.	
2-Methylphenol	ND	10.0	ñ	ü	.00	ũ	n	ñ	
3 & 4-Methylphenol	ND	10.0	11	u	200	17	3 II .	u	
Naphthalene	ND	10.0	W	u	11	<u>u</u>	91	u	
4-Nitrophenol	ND	10.0	u.	O	-11	Ü	311	u	
Di-n-octyl phthalate	ND	10.0	ū	Ü	11	ū	11	ū	
Phenanthrene	ND	10.0	**	17	17	u	"	Ĭ	
Phenol	ND	10.0	**	n	311	11	×111	11	
Pyrene	ND	10.0	11	Ü	11	11	ıı	U	
Pyridine	ND	10.0	0	ü	u	ij.	u	Ü	
Quinoline	ND	10.0	ü	ii	u	'n	u	•	
Thiophenol	ND	10.0	u	31 :	216	n	211	11	
Surrogate: 2-FBP	39.6 %	41-129			"	"	"	11	A-02
Surrogate: 2-FP	8.16 %	18-124			n	11	n	<i>n</i> :	A-02, .
Surrogate: Nitrobenzene-d5	28.8 %	44-124			"	\boldsymbol{n}	n	\boldsymbol{u}	A-02
Surrogate: Phenol-d6	3.88 %	25-122			"	n	<i>n</i>	***	A-02, .
Surrogate: p-Terphenyl-d14	38.2 %	10-132			n	<i>n</i> e	#.2	.11	
Surrogate: 2,4,6-TBP	28.2 %	19-132			# 1	m.	n	u	
DRAFT: MW-93 (B4J0574-03) Water	Sampled: 1	0/13/04 12:00	Receive	d: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0		10	n,		ŋ	11	
Benzo (a) anthracene	ND	10.0	11	11	ij	11	ij	10	
Benzo (a) pyrene	ND	10.0	11	n	ii	**	ij	W.	
Benzo (b) fluoranthene	ND	10.0	31	300	ш	dto	tt	41.0	
Benzo (k) fluoranthene	ND	10.0	11	TI.	<u>u</u>	11	"	11	
Benzo (ghi) perylene	ND	10.0	M.	11	u	11	n	11	
Bis(2-ethylhexyl)phthalate	ND	10.0	u,	11	ij	n.	D	11	
Butyl benzyl phthalate	ND	10.0	II.	11	11	II.	Ü	11	
Chrysene	ND	10.0	216	3 11 %	11	40	u	:11%	
Di-n-butyl phthalate	ND	10.0	11	n	n	11		300	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-93 (B4J0574-03) Water	Sampled: 1	0/13/04 12:00	Received:	10/15/04 (09:50				A-01b, AF-X
Dibenz (a,h) acridine	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	OH.	A-01a
Dibenz (a,h) anthracene	ND	10.0		10	11	Pij	11	u	
1,2-Dichlorobenzene	ND	10.0	100	11	II	n	10	a	
1,3-Dichlorobenzene	ND	10.0	n	11	u	ñ	ii.	u	
1,4-Dichlorobenzene	ND	10.0	((11))	311	311	n	ж.	311	
Diethyl phthalate	ND	10.0	300	11	11	Ü	a	u	
7,12-Dimethylbenz (a) anthracene	ND	10.0	200	17.	11	ĬĬ Pa	n	Ü	A-01a
2,4-Dimethylphenol	ND	10.0	11		**	ũ	11	ü	
Dimethyl phthalate	ND	10.0	11	u	11	ű	m.	ű	
2,4-Dinitrophenol	ND	10.0	316	эu	312	u	3112	u	
Fluoranthene	ND	10.0	11	u	n	y	11.	ū	
Fluorene	ND	10.0	.11	11	II	11	11	ü	
Indene	ND	10.0	11	17		ij	11	ū	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	n	11	(31)	11	311	11	
6-Methyl chrysene	ND	10.0	:00	11	30	11	ж	11	A-01a
1-Methylnaphthalene	ND	10.0	0	11	.11	0	11	11	A-01a
2-Methylnaphthalene	ND	10.0	10	n.	11	Ü	n	Ü	
2-Methylphenol	ND	10.0	11	ii.	11	u	**	ij	
3 & 4-Methylphenol	ND	10.0	1.0	u	315	11	311	"	
Naphthalene	ND	10.0	31 9	tr.	n	<u>u</u>	n.	"	
4-Nitrophenol	ND	10.0	11	Œ	31	11	11	11	
Di-n-octyl phthalate	ND	10.0	rg .	u	30	11	11	Ü	
Phenanthrene	ND	10.0	n .	ű	11	77	111	ñ	
Phenol	ND	10.0	n	17	316	11	316	11	
Pyrene	ND	10.0	u.	tt.	11	"	10	n	
Pyridine	ND	10.0	Œ	11	11	U	11	în	
Quinoline	ND	10.0	ü	n	11	Ü	11	Ü	A-01a
Thiophenol	ND	10.0	ñ	ij	11	Ü	11	11	A-01a
Surrogate: 2-FBP	31.8 %	41-129			#	11	"	:# :	A-02
Surrogate: 2-FP	4.59 %	18-124			и	n.	n	**	A-02, J
Surrogate: Nitrobenzene-d5	35.1 %	44-124			ii.	n	"	"	A-02
Surrogate: Phenol-d6	2.12 %	25-122			n	\boldsymbol{n}	u	H	A-02, J
Surrogate: p-Terphenyl-d14	37.4 %	10-132			"	n	n	"	
Surrogate: 2,4,6-TBP	39.7 %	19-132			"	"	"	,,	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-61 (B4J0574-04) Water	Sampled: 10	/13/04 12:00	Received	l: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	"	n	11	n	Ü	"	
Benzo (a) anthracene	ND	10.0	11	0	11	n	Ü	11	
Benzo (a) pyrene	ND	10.0	11	0	11	30	"	11	
Benzo (b) fluoranthene	ND	10.0	311.5	ar	11	300	m:	H.	
Benzo (k) fluoranthene	ND	10.0	11	30	11	THE STATE OF THE S	"	U	
Benzo (ghi) perylene	ND	10.0	11	11	n	ii.	17	200	
Bis(2-ethylhexyl)phthalate	ND	10.0	0	11	0	u	n	0	
Butyl benzyl phthalate	ND	10.0	n	11	n.	it	n	ĐC	
Chrysene	ND	10.0	3113	in:	w	11	n	310	
Di-n-butyl phthalate	ND	10.0	10	W.	w		10	31	
Dibenz (a,h) acridine	ND	10.0	11	II	w	in.	ï	11	A-01a
Dibenz (a,h) anthracene	ND	10.0	11	700	11	100	u	11	
1,2-Dichlorobenzene	ND	10.0	ate	3.00	11	30.	11.	:01:	
1,3-Dichlorobenzene	ND	10.0	tt.	11	11	iii	u	u	
1,4-Dichlorobenzene	ND	10.0	11	11	H	(11)	11	0	
Diethyl phthalate	ND	10.0	n.	11	11		11	30	
7,12-Dimethylbenz (a) anthracene	ND	10.0	11	"	n	11	n	11	A-01a
2,4-Dimethylphenol	ND	10.0	310	· 11	11	2011	3117	3.HF	
Dimethyl phthalate	ND	10.0	u	u	30	11	II	31	
2,4-Dinitrophenol	ND	10.0	H	"	30	11	U	111	
Fluoranthene	ND	10.0	M.	iii	u	10	N	TO T	
Fluorene	ND	10.0	.11	u	11	10	Tr.	0.11.	
Indene	ND	10.0	115	эн	211	æ	311	100	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	n.	u	11	***	"	· u	
6-Methyl chrysene	ND	10.0	11	11	,11	11	31	11	A-01a
1-Methylnaphthalene	ND	10.0	11	11	11	11	n	11	A-01a
2-Methylnaphthalene	ND	10.0	n	11	(11)	11	3113		
2-Methylphenol	ND	10.0	311	111	31	111	300	II.	
3 & 4-Methylphenol	ND	10.0	п	, ii	31	g.	и	ŭ.	
Naphthalene	ND	10.0	ü	Œ.	"	Ü	317	ũ	
4-Nitrophenol	ND	10.0	u	ii	11	ű	11	ű	
Di-n-octyl phthalate	ND	10.0	ж	u	111	11	316	11	
Phenanthrene	ND	10.0	231	"	11	11	11	ŭ	
Phenol	ND	10.0	11	ü	"	15	.11	ij	

DRAFT REPORT

Project: SWMU 11 Sampling

8505 South Texas Road Anacortes, WA 98221 Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C

North Creek Analytical - Bothell

	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
/	DRAFT: MW-61 (B4J0574-04) Water	Sampled: 1	0/13/04 12:00	Received:	10/15/04	09:50				A-01b, AF-X
	Pyrene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	U	
	Pyridine	ND	10.0	111	99		ū	v	ü	
	Quinoline	ND	10.0	30	ü	u	Ü	U	ũ	A-01a
1	Thiophenol	ND	10.0	11	17	u	ï	ti.	ü	A-01a
	Surrogate: 2-FBP	19.7 %	41-129			"	11	11.	n.	A-02
	Surrogate: 2-FP	4.20 %	18-124			"	#	\boldsymbol{n}	H	A-02
	Surrogate: Nitrobenzene-d5	23.8 %	44-124			"	11	M.	H	A-02
	Surrogate: Phenol-d6	1.56 %	25-122			"	H		11	A-02, J
	Surrogate: p-Terphenyl-d14	24.2 %	10-132			ï,	u	"	"	
	Surrogate: 2,4,6-TBP	27.5 %	19-132			"	11	"	11	
	DRAFT: MW-60 (B4J0574-05) Water	Sampled: 1	0/13/04 12:00	Received:	10/15/04	09:50				A-01b, AF-X
	Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
	Anthracene	ND	10.0	11	11	ø	U	11	11	
	Benzo (a) anthracene	ND	10.0	, ii	19	11	u	11	10	
	Benzo (a) pyrene	ND	10.0	u	v	Ü	u	11	Ü	
	Benzo (b) fluoranthene	ND	10.0	n	n	TT TT	310	11	Ü	
	Benzo (k) fluoranthene	ND	10.0	II .	n	"	116	10	ш	
	Benzo (ghi) perylene	ND	10.0	ŭ	"	n.	11	u	n	
	Bis(2-ethylhexyl)phthalate	ND	10.0	ü	ii -	II	11	u	11	
	Butyl benzyl phthalate	ND	10.0	ű	**	Ü	11.	.11	11	
	Chrysene	ND	10.0	11	111	n	00	310	11.0	
	Di-n-butyl phthalate	ND	10.0	11	y.	"	100	11	1105	
	Dibenz (a,h) acridine	ND	10,0	11	n .	11	10	11	u	A-01a
	Dibenz (a,h) anthracene	ND	10.0	ŭ	n	Ü	11	11	u	
	1,2-Dichlorobenzene	ND	10.0	ũ	u	ũ	11	u	11	
	1,3-Dichlorobenzene	ND	10.0	II .	ALE	11	316	20.	311.0	
	1,4-Dichlorobenzene	ND	10.0	u .	a	Ŋ.	11	11	21	
	Diethyl phthalate	ND	10.0	ü	W.	u ·	n	11	11	
	7,12-Dimethylbenz (a) anthracene	ND	10.0	Ü	11	11	U	11	10	A-01a
	2,4-Dimethylphenol	12.0	10.0	ű	11	11	u	ï	30	
	Dimethyl phthalate	ND	10.0	11	11	31%	40	n	(10)	
	2,4-Dinitrophenol	ND	10.0	n	.00		.00	u	11	
	Fluoranthene	ND	10.0	n	10	10	•	ű	11	
	Fluorene	ND	10.0	ñ	u	n	10	11	11	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-60 (B4J0574-05) Water	Sampled: 1	0/13/04 12:00	Received	1: 10/15/04	09:50				A-01b, AF-X
Indene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	и	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	11	ij	in.	Ü	11	11	
6-Methyl chrysene	ND	10.0	11	ii	11	u	11	, ii	A-01a
1-Methylnaphthalene	ND	10.0	3116	11	311	, u	111%	ા	A-01a
2-Methylnaphthalene	ND	10.0	ang.	n	u	- W	11	u	
2-Methylphenol	ND	10.0	11	ij	w	u	H.	ij	
3 & 4-Methylphenol	ND	10.0	11	11	u	w	11.	TI TI	
Naphthalene	ND	10.0	11	ii	.00	Ü	.112	"	
4-Nitrophenol	ND	10.0	316	11	310	TH	10%	n	
Di-n-octyl phthalate	ND	10.0	10	n	10	- ng	U.	ū	
Phenanthrene	ND	10.0		Ü	11	n	u.	ũ	
Phenol	ND	10.0	n	ü	11	n	и	ũ	
Pyrene	ND	10.0	n	ñ	2316	11.	311.5	11	
Pyridine	ND	10.0	211	u	11	σ	11	и	
Quinoline	ND	10.0	11	u.	11	<u>ii</u>		"	A-01a
Thiophenol	ND	10.0		Ü	11	ĬĬ.	11	11	A-01a
Surrogate: 2-FBP	27.8 %	41-129			"	n	"	#	A-02
Surrogate: 2-FP	9.76 %	18-124			"	"	"	"	A-02, .
Surrogate: Nitrobenzene-d5	32.9 %	44-124			u	,,	"	"	A-02
Surrogate: Phenol-d6	3.96 %	25-122			n	<i>II</i>	"	n	A-02, .
Surrogate: p-Terphenyl-d14	32.9 %	10-132			, u	"	"	11	
Surrogate: 2,4,6-TBP	40.0 %	19-132			"	"	"	"	
DRAFT: MW-94 (B4J0574-06) Water	Sampled: 1	0/13/04 12:00	Receive	1: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	tt	17	- 10	11	311	11	
Benzo (a) anthracene	ND	10.0	in.	11	:10	ņ	и	22	
Benzo (a) pyrene	ND	10.0	19	0	11	U	11	27	
Benzo (b) fluoranthene	ND	10.0	n	Ü	11	Ü	.11	n	
Benzo (k) fluoranthene	ND	10.0	"	0	11	ii	IT	Ü	
Benzo (ghi) perylene	ND	10.0	\bar{n}	u u	116	u	311	11	
Bis(2-ethylhexyl)phthalate	ND	10.0	n	11	17	u	11	M.	
Butyl benzyl phthalate	ND	10.0	ij.	9	11	u.	III	y	
Chrysene	ND	10.0	ü	n n	n.	11	Ü	ii.	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-94 (B4J0574-06) Water	Sampled: 10	0/13/04 12:00	Received	: 10/15/04 (09:50				A-01b, AF-X
Dibenz (a,h) acridine	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	100	A-01a
Dibenz (a,h) anthracene	ND	10.0	"	u	11	n	u	U	
1,2-Dichlorobenzene	ND	10.0	ij	W	n	Ü	III	11	
1,3-Dichlorobenzene	ND	10.0	"	41	и	n	311.	M)	
1,4-Dichlorobenzene	ND	10.0	11	3113	u	u	111	116	
Diethyl phthalate	ND	10.0	ÿ	11	u	99	11	W	
7,12-Dimethylbenz (a) anthracene	ND	10.0	'n	"	ij	Ü	11	11	A-01a
2,4-Dimethylphenol	ND	10.0	n	n	u	u	11	11	
Dimethyl phthalate	ND	10.0	n	30.2	11	39	30.	300	
2,4-Dinitrophenol	ND	10.0	n	316	17	77	Time .	311	
Fluoranthene	ND	10.0	W.	11	n	117	u		
Fluorene	ND	10.0	3	u	Ü	30	Œ	11	
Indene	ND	10.0	n.	Ü	n	î	11	11	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	11	31	31	3103	ार	3112	
6-Methyl chrysene	ND	10.0		.,	XII	n	11	31	A-01a
1-Methylnaphthalene	ND	10.0	0.0	11	11))	10	A-01a
2-Methylnaphthalene	ND	10.0	n	30	11	11	II.	Ū	
2-Methylphenol	ND	10.0	n .	n	10	11	ü	u	
3 & 4-Methylphenol	ND	10.0	3113	311	3000	m	"	115	
Naphthalene	ND	10.0	11	.00	11	11	"	.11	
4-Nitrophenol	ND	10.0	æ	10	U	Ü	11	17	
Di-n-octyl phthalate	ND	10.0	11	Œ	u	u	n	•	
Phenanthrene	ND	10.0	311%	311	31.	902	11	м	
Phenol	ND	10.0	31)	11	11	W	n n	ш	
Pyrene	ND	10.0	(9)	n	11	716	<u>u</u>	(4)	
Pyridine	ND	10.0	11	ii)	17	11	ü	110	
Quinoline	ND	10.0	11	u	11	11	n	Ü	A-01a
Thiophenol	ND	10.0	300%	3900	1100	m	.11		A-01a
Surrogate: 2-FBP	26.3 %	41-129	= 1111/= -1		"	n	"	п	A-02
Surrogate: 2-FP	5.49 %	18-124			n	an.	<i>w</i>	"	A-02, J
Surrogate: Nitrobenzene-d5	29.0 %	44-124			: m :	TH.	<i>n</i> :	n	A-02
Surrogate: Phenol-d6	2.49 %	25-122			"	п	***	u	A-02, J
Surrogate: p-Terphenyl-d14	30.6 %	10-132				:n	m.	"	
Surrogate: 2,4,6-TBP	32.9 %	19-132			***	an.	**	"	

DRAFT REPORT

Project: SWMU 11 Sampling

8505 South Texas Road Anacortes, WA 98221 Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-95 (B4J0574-07) Water	Sampled: 10	0/13/04 12:00	Received	l: 10/15/04 (09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	ű	Ű	11	ũ	11	Ü	
Benzo (a) anthracene	ND	10.0	ñ	ű	.11	ñ	n	Ü	
Benzo (a) pyrene	ND	10.0	n	11	300	11	311	11	
Benzo (b) fluoranthene	ND	10.0	9	11	11	11	n .	g	
Benzo (k) fluoranthene	ND	10.0	ü	Œ.	11	Ü	м	11	
Benzo (ghi) perylene	ND	10.0	Ü	11	11	n		11	
Bis(2-ethylhexyl)phthalate	ND	10.0	11	11	in.	ü	11	11	
Butyl benzyl phthalate	ND	10.0	11	11	5H	u	211	17	
Chrysene	ND	10.0	"	22	п	Ü	11	ņ	
Di-n-butyl phthalate	ND	10.0	v	0	.00	ij	n	10	
Dibenz (a,h) acridine	ND	10.0	11	U	u	11	Till the state of	u	A-01a
Dibenz (a,h) anthracene	ND	10.0	D.	11	330.	11	AL.		
1,2-Dichlorobenzene	ND	10.0		11	·w	y	Ж	11	
1,3-Dichlorobenzene	ND	10.0	ii.	ij	11	n	11	11	
1,4-Dichlorobenzene	ND	10.0	O .	ji	u	9	11		
Diethyl phthalate	ND	10.0	11	n	ũ	.0	11	H	
7,12-Dimethylbenz (a) anthracene	ND	10.0	11:3	n	11	11	.30	JD (/	A-01a
2,4-Dimethylphenol	ND	10.0	y 1	y	ũ	11	u	10	
Dimethyl phthalate	ND	10.0	n	y	ŭ	11	u	at .	
2,4-Dinitrophenol	ND	10.0	n	Ü	ü	11	ü	10	
Fluoranthene	ND	10.0	n.	Ñ.	ü	11	Ti .	11	
Fluorene	ND	10.0	w:	110	11	107	111	310	
Indene	ND	10.0	u	11	ij	u	n	11	A-01
Indeno (1,2,3-cd) pyrene	ND	10.0	"	11	,,	31	0	n.	
6-Methyl chrysene	ND	10.0	11	n.	Ü	N .	ũ	u.	A-01:
1-Methylnaphthalene	ND	10.0	11	ĵi z	"	11	ii	u.	A-01:
2-Methylnaphthalene	ND	10.0	39.0	303	ш	310	11	7107	
2-Methylphenol	ND	10.0	H	и	11	II.	11	n	
3 & 4-Methylphenol	ND	10.0	.11	n	9	n	ij		
Naphthalene	ND	10.0	ш	u.	11	u	ñ	11	
4-Nitrophenol	ND	10.0	303	11	11	.00	u u	200	
Di-n-octyl phthalate	ND	10.0	AT.	W.		w	u	3 11	
Phenanthrene	ND	10.0	(1)	н	9	11	<u>u</u>	(0)	
Phenol	ND	10.0	11	U	Ü	11	u.	11	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-95 (B4J0574-07) Water	Sampled: 1	0/13/04 12:00	Received	: 10/15/04	09:50				A-01b, AF-X
Pyrene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	11	
Pyridine	ND	10.0	Ü	10	Ü	10	$\tilde{\mathfrak{U}}$	11	
Quinoline	ND	10.0	Ü	11	ŭ	11	ii	11	A-01a
Thiophenol	ND	10.0	11	₹ H ©	п	310	11	31%	A-01a
Surrogate: 2-FBP	48.3 %	41-129			n	н	"	11	
Surrogate: 2-FP	7.45 %	18-124			w	"	n	11	A-02, J
Surrogate: Nitrobenzene-d5	54.5 %	44-124			w:	n	n	THE	
Surrogate: Phenol-d6	3.01 %	25-122			# 2	n.	n	:#F	A-02, J
Surrogate: p-Terphenyl-d14	53.1 %	10-132			#2	H	n	316	
Surrogate: 2,4,6-TBP	56.8 %	19-132			n	3 H 5	HE:	: n :	
DRAFT: MW-96 (B4J0574-08) Water	Sampled: 1	0/13/04 12:00	Received	l: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	11	11	11	311	11	0	
Benzo (a) anthracene	ND	10.0	11	n	tr	11	n	.0	
Benzo (a) pyrene	ND	10.0	11	n.	11	11	n	.00	
Benzo (b) fluoranthene	ND	10.0	410	u	34.5	3163	II .	9000	
Benzo (k) fluoranthene	ND	10.0	H.		11	11	11		
Benzo (ghi) perylene	ND	10.0	n	n	11	*	"		
Bis(2-ethylhexyl)phthalate	ND	10.0	or.	u.	n	11	ii	n	
Butyl benzyl phthalate	ND	10.0	at.	10	N.	11	10	n	
Chrysene	ND	10.0	316	ar	w	310	110	ar	
Di-n-butyl phthalate	ND	10.0	11	u,		11	11	u	
Dibenz (a,h) acridine	ND	10.0	**	Ü	11	70	n	u	A-01a
Dibenz (a,h) anthracene	ND	10.0	11	in.	**	11		11	
1,2-Dichlorobenzene	ND	10.0	.12	,u.	39%	11	.0.2	11	
1,3-Dichlorobenzene	ND	10.0	20%	TO.	717	311	100	ų	
1,4-Dichlorobenzene	ND	10.0	30	0	30	11	11	v	
Diethyl phthalate	ND	10.0	u	11	TI.	11	11	in	
7,12-Dimethylbenz (a) anthracene	ND	10.0	u	11	w.	n	11	8ú	A-01a
2,4-Dimethylphenol	ND	10.0	316	2311	200	8.03	316	SIL.	
Dimethyl phthalate	ND	10.0	11	ay.	11	11	п	u	
2,4-Dinitrophenol	ND	10.0	11.		"	11	,10	n	
Fluoranthene	ND	10.0	11	u	11	11	11	"	
28.0 Mile 20.0 MICE TO TO	1785								

DRAFT REPORT

Project: SWMU 11 Sampling

8505 South Texas Road Anacortes, WA 98221 Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-96 (B4J0574-08) Water	Sampled: 1	0/13/04 12:00	Received	l: 10/15/04	09:50				A-01b, AF-X
Indene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	ũ	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	ů	11	"	iii)	u	9	
6-Methyl chrysene	ND	10.0	11	11/2	11	30	æ	31	A-01a
1-Methylnaphthalene	ND	10.0	ü	,,,	"	u	11	11	A-01a
2-Methylnaphthalene	ND	10.0	ű	U	U	n.	11		
2-Methylphenol	ND	10.0	Ü	n .	u	11	ű	D.	
3 & 4-Methylphenol	ND	10.0	ű	n.	11	11	11	auc	
Naphthalene	ND	10.0	11	11%	11	311	"	ALC:	
4-Nitrophenol	ND	10.0	11	u	11	n.	ū	u	
Di-n-octyl phthalate	ND	10.0	Ü	U.	10	0.	ũ	n	
Phenanthrene	ND	10.0	Ü	11	ñ	u	ü	11	
Phenol	ND	10.0	11	11	11	80 0	11	3100	
Pyrene	ND	10.0	ıı	11	n	10	"	ng	
Pyridine	ND	10.0	ü	11	ij	116	n	.00	
Quinoline	ND	10.0	ij	11	u	11	<u>u</u>	u	A-01a
Thiophenol	ND	10.0	ũ	n.	ñ	11	ü	u	A-01a
Surrogate: 2-FBP	26.9 %	41-129			ш	TIT.	H.	· m	A-02
Surrogate: 2-FP	5.04 %	18-124			"	11	"	•	A-02, J
Surrogate: Nitrobenzene-d5	28.8 %	44-124			AT.	n	"	t.	A-02
Surrogate: Phenol-d6	2.35 %	25-122			н	#	"	"	A-02, J
Surrogate: p-Terphenyl-d14	45.5 %	10-132			u	11	"	"	
Surrogate: 2,4,6-TBP	40.8 %	19-132			"	71 1 0	n	i Ü	
DRAFT: MW-97 (B4J0574-09) Water	Sampled: 1	0/13/04 12:00	Received	l: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	u	(ii)	u	n	y	17.	
Benzo (a) anthracene	ND	10.0	95		11	.0	n.		
Benzo (a) pyrene	ND	10.0	17	W	11	u	11		
Benzo (b) fluoranthene	ND	10.0	17	W	11	11	11	w	
Benzo (k) fluoranthene	ND	10.0	31.0	.11	31/2	246	118	840	
Benzo (ghi) perylene	ND	10.0	n.	11	u.	19	w	11	
Bis(2-ethylhexyl)phthalate	ND	10.0	n .	11	ш	11	11	11	
Butyl benzyl phthalate	ND	10.0	u.	n	11	n	11	11	
Chrysene	ND	10.0	u	m	11	u	11	n	
Di-n-butyl phthalate	ND	10.0	30%	(11)	(11)	310	362	÷1E	
50 × 50									

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-97 (B4J0574-09) Water	Sampled: 10	0/13/04 12:00	Receive	d: 10/15/04	09:50				A-01b, AF-X
Dibenz (a,h) acridine	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	11	A-01a
Dibenz (a,h) anthracene	ND	10.0	10	10	11	11	.00	30	
1,2-Dichlorobenzene	ND	10.0	11	11	н	11	tt	л	
1,3-Dichlorobenzene	ND	10.0	.11%	311	11.7	(0)	T U	11	
1,4-Dichlorobenzene	ND	10.0	11	.11	10	30	11	(11)	
Diethyl phthalate	ND	10.0	10		w	11	Ü	11	
7,12-Dimethylbenz (a) anthracene	ND	10.0	n i	W		11	ũ		A-01a
2,4-Dimethylphenol	ND	10.0	10	.00	10	0	ii	31	
Dimethyl phthalate	ND	10.0	11	310	117	3.112	11	TM:	
2,4-Dinitrophenol	ND	10.0	n	.11	30	in .	ii.	w	
Fluoranthene	ND	10.0	11	00	11	W	ij.	711	
Fluorene	ND	10.0	u	10	11	11	ü	n	
Indene	ND	10.0	311	800	11	11	ñ	u	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	11	211	11	E91.	11	5318	
6-Methyl chrysene	ND	10.0	11	11	30	u	n	11	A-01a
1-Methylnaphthalene	ND	10.0	12		0	u	9	<u>u</u>	A-01a
2-Methylnaphthalene	ND	10.0	11	11	11	Ü	ũ	ij.	
2-Methylphenol	ND	10.0		THE	311	"	11	Ü	
3 & 4-Methylphenol	ND	10.0	.00	- g	w	11	11	19	
Naphthalene	ND	10.0	11	· tr	W	ij.	n	ņ	
4-Nitrophenol	ND	10.0	11	n	11	ä	U	u	
Di-n-octyl phthalate	ND	10.0	11	ű	11	ü	u	ũ	
Phenanthrene	ND	10.0	æ	II .	1016	1†	300	11	
Phenol	ND	10.0	u	ű	10	<u>u</u>	11	11	
Pyrene	ND	10.0		ij.	.0	u	W	9	
Pyridine	ND	10.0	u	**	11	ii	11	9	
Quinoline	ND	10.0	11	ñ	11	ij	w	11	A-01a
Thiophenol	ND	10.0	n		ार	"	310	110	A-01
Surrogate: 2-FBP	149 %	41-129			n	"	· n	H	A-02
Surrogate: 2-FP	12.2 %	18-124			n ·	"	"		A-02, .
Surrogate: Nitrobenzene-d5	166 %	44-124			#	#	n	<i>m</i>	A-0.2
Surrogate: Phenol-d6	5.64 %	25-122			n -	"	· n	"	A-02, .
Surrogate: p-Terphenyl-d14	162 %	10-132			#	n	u	<i>H</i> .	A-0.
Surrogate: 2,4,6-TBP	121 %	19-132			11	20	H	.10	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-63 (B4J0574-10) Water	Sampled: 10	/13/04 12:00	Received	: 10/15/04	09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	n	10:	300	u	.00.		
Benzo (a) anthracene	ND	10.0	11	10%	THE .	ü	w	u	
Benzo (a) pyrene	ND	10.0	ŋ	10	u	tt.	, u	n.	
Benzo (b) fluoranthene	ND	10.0	ij	U	n	ij	u	u	
Benzo (k) fluoranthene	ND	10.0	Ü	U	u	Ü	и	Û.	
Benzo (ghi) perylene	ND	10.0	u	.00.5	200	n	are.	MS.	
Bis(2-ethylhexyl)phthalate	ND	10.0	11	30	u	<u>u</u>	11	w	
Butyl benzyl phthalate	ND	10.0	ņ	n.	11	ĬĬ.	n .	n	
Chrysene	ND	10.0	n n	11	11	Ü	Ħ	207	
Di-n-butyl phthalate	ND	10.0	ű	11	11	ũ	11	m _	
Dibenz (a,h) acridine	ND	10.0	n .	31%	211	11	э	9008	A-01a
Dibenz (a,h) anthracene	ND	10.0	ñ	11	11	0	u	u	
1,2-Dichlorobenzene	ND	10.0	20	H	n	0	u	u	
1,3-Dichlorobenzene	ND	10.0	ij	11	ij	Ĩ1	u	u.	
1,4-Dichlorobenzene	ND	10.0	0	n	n	17	711	311	
Diethyl phthalate	ND	10.0	110	105	п	11	-11	11	
7,12-Dimethylbenz (a) anthracene	ND	10.0	n.	II.	u	ņ	ū	n	A-01a
2,4-Dimethylphenol	ND	10.0	9	.00	ü	0	Ħ	0	
Dimethyl phthalate	ND	10.0	17	u	ü	ő	11	u	
2,4-Dinitrophenol	ND	10.0	n.	310	11	U	11	311.5	
Fluoranthene	ND	10.0	110	10	u,	ņ	<u>u</u>	11	
Fluorene	ND	10.0	11	11	11	n .	ũ		
Indene	ND	16.5	W.	10	i.	9	ü	11	₹-03, A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	n	11	"	11	ä	11	
6-Methyl chrysene	ND	10.0	30.2	m.	11	1977	u	10141	A-01a
1-Methylnaphthalene	42.0	10.0	30	n.	9	11*	<u>u</u>	30	A-01a
2-Methylnaphthalene	36.5	10.0	11	u	u	11	11	900	
2-Methylphenol	ND	10.0	11	u	ü	11	11	TO TO	
3 & 4-Methylphenol	ND	10.0	11	u	u	11	Ü	310	
Naphthalene	36.0	10.0	311	311		316	n	(11)	
4-Nitrophenol	ND	10.0	u.	п	tr.	10	U		
Di-n-octyl phthalate	ND	10.0	11	u	ø	30		**	
Phenanthrene	ND	10.0	11	.11	11	10	ii	11	
Phenol	ND	10.0	T.	n	"	11	ii	in	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

AFT: MW-63 (B4J0574-10) Water ne dine noline	ND	0/13/04 12:00	Dansiwada 1						
line			Received: 1	10/15/04	09:50				A-01b, AF-X
	3.775	10.0	ug/l	1	4J20009	10/20/04	11/24/04	11	
noline	ND	10.0	u	Ü	u	ũ	11.	ñ	
	ND	10.0	u	11	w	11	SIE.	n	A-01a
phenol	ND	10.0	11	11	u	ti	11	ii.	A-01a
ogate: 2-FBP	55.7 %	41-129			"	<i>ii</i>	п	(10)	
ogate: 2-FP	11.4 %	18-124			"	"	<i>u</i>	"	A-02, J
ogate: Nitrobenzene-d5	57.3 %	44-124			<u>n</u>	ir	"	"	
ogate: Phenol-d6	5.53 %	25-122			<i>u</i>	"	ű	"	A-02, J
ogate: p-Terphenyl-d14	60.8 %	10-132			"	"	n	"	
ogate: 2,4,6-TBP	76.1 %	19-132			"	"	"	"	
AFT: MW-65 (B4J0574-11) Water	Sampled: 1	0/13/04 12:00	Received: 1	10/15/04	09:50				A-01b, AF-X
naphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	16
nracene	ND	10.0	<u>u</u>	W.	u	Ü	u	n	
zo (a) anthracene	ND	10.0	Ü	11	ü	ii	u	n.	
zo (a) pyrene	ND	10.0	11	11	11	11	598	11	
zo (b) fluoranthene	ND	10.0	w	17	11	ņ	17	11	
zo (k) fluoranthene	ND	10.0	v	11	17	iii	u	11	
zo (ghi) perylene	ND	10.0	11	10	11	ü	ũ	11	
2-ethylhexyl)phthalate	ND	10.0	11	11.7	11	я	и	100	
l benzyl phthalate	ND	10.0	11	N.	y.	M×.	If	303	
vsene	ND	10.0	U		n.	90	ų	(00)	
-butyl phthalate	ND	10.0	U	15	ij	11	ü	11	
enz (a,h) acridine	ND	10.0	n	11	ü	11	ű	ii.	A-01a
enz (a,h) anthracene	ND	10.0	.11	11	31	315	11	111	
Dichlorobenzene	ND	10.0	9	11	11	10	11	11	
Dichlorobenzene	ND	10.0	10)	17	u	<u>ii</u>	30	
Dichlorobenzene	ND	10.0	11	n	n	w	ú	U	
hyl phthalate	ND	10.0	11	n.	ñ	iii	ii	u	
-Dimethylbenz (a) anthracene	ND	10.0	11%	30	"	410	"	5110	A-01a
	ND	10.0	n	u	10	19	"	u	
ethyl phthalate	ND	10.0	TI.	11	ù	11	<u>u</u>	,,	
Dinitrophenol	ND	10.0	0	11	u	0	11		
ranthene	ND	10.0	M	11	.11	n.	ñ	n	
rene	ND	10.0	100	216.0	111	3002	11	ADE	
	pagate: Phenol-d6 pagate: p-Terphenyl-d14 pagate: 2,4,6-TBP AFT: MW-65 (B4J0574-11) Water paphthylene pagate: 0 (a) anthracene pagate: 0 (b) fluoranthene pagate: 0 (k) fluoranthene p	pogate: Phenol-d6 pogate: p-Terphenyl-d14 pogate: 2,4,6-TBP AFT: MW-65 (B4J0574-11) Water paper	25-122 2	Degate: Phenol-d6	Segreta: Phenol-d6 S.53 % 25-122 Segreta: P-Terphenyl-d14 60.8 % 10-132 76.1 % 19-132 Segreta: 2,4,6-TBP T6.1 % T	Orgate: Phenol-d6 5.53 % 25-122 " Orgate: p-Terphenyl-d14 60.8 % 10-132 " Orgate: 2,4,6-TBP 76.1 % 19-132 " AFT: MW-65 (B4J0574-11) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 Implication of the company of the c	Ogate: Phenol-d6 5.53 % 25-122 " " " Ogate: p-Terphenyl-d14 60.8 % 10-132 " " " AFT: MW-65 (B4J0574-11) Water Sampled: 10/13/04 12:00 Received: 10/15/04 09:50 V AFT: MW-65 (B4J0574-11) Water ND 10.0 ug/1 1 4J20009 10/20/04 aphthylene ND 10.0 ug/1 1 4J20009 10/20/04 racene ND 10.0 " " " " o (a) anthracene ND 10.0 " " " " o (b) fluoranthene ND 10.0 " " " " o (b) fluoranthene ND 10.0 " " " " o (sh) perylene ND 10.0 " " " " de benzyl phthalate ND 10.0 " " " " benzyl phthalate ND 10.0 " " " <	Ogate: Phenol-d6 5.53 % 25-122 """"""""""""""""""""""""""""""""""""	Ogate: Phenol-do 5.53 % 25-122 """"""""""""""""""""""""""""""""""""

DRAFT REPORT

Project: SWMU 11 Sampling Project Number: PO# 4550237616 8505 South Texas Road

Anacortes, WA 98221

Project Manager: Brian Rhodes

Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-65 (B4J0574-11) Water	Sampled: 1	0/13/04 12:00	Received	: 10/15/04	09:50				A-01b, AF-X
Indene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	11.	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	11	u	ũ	11	11	10.	
6-Methyl chrysene	ND	10.0	.11.1	AU.7	u	.00.	ii.	11	A-01a
1-Methylnaphthalene	ND	10.0	160	300	11	11	11	4DE	A-01a
2-Methylnaphthalene	ND	10.0	n	30	11	11.	ų.	U	
2-Methylphenol	ND	10.0	u	11	11	ii.	ij	.00	
3 & 4-Methylphenol	ND	10.0	u	11	Ü	ü	u	10	
Naphthalene	ND	10.0	30%	200	u	.11	u u	410	
4-Nitrophenol	ND	10.0	W.	10	<u>u</u>	u	n	110	
Di-n-octyl phthalate	ND	10.0		0	ĬI.		11	30	
Phenanthrene	ND	10.0	11	300	11	n	11	Ü	
Phenol	ND	10.0	n	Ü	11)ir	ñ	.11	
Pyrene	ND	10.0	3113	111	11%	311	n .	.11	
Pyridine	ND	10.0	u.	11	n	u	ñ	111	
Quinoline	ND	10.0	NC.	11	N.	Ü	п	JF	A-01a
Thiophenol	ND	10.0	11	10	W.	310	n	Ü	A-01a
Surrogate: 2-FBP	62.8 %	41-129			"	п	"	Ü	~1
Surrogate: 2-FP	13.3 %	18-124			"	"	"	. 0	A-02, J
Surrogate: Nitrobenzene-d5	65.6 %	44-124			"	<i>u</i>	u	"	
Surrogate: Phenol-d6	5.68 %	25-122			"	"	u	ii	A-02, J
Surrogate: p-Terphenyl-d14	64.8 %	10-132			"	n	"	"	
Surrogate: 2,4,6-TBP	73.6 %	19-132			"	n	"	n	
DRAFT: MW-100 (B4J0574-12) Water	Sampled:	10/13/04 12:00	Receive	ed: 10/15/04	1 09:50				A-01b, AF-X
Acenaphthylene	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	EPA 8270C	
Anthracene	ND	10.0	dr.	310	11	11	310	NIL.	
Benzo (a) anthracene	ND	10.0	**	11	n	ű	II.	11	
Benzo (a) pyrene	ND	10.0	11	u	0	ű	31	2.00	
Benzo (b) fluoranthene	ND	10.0	II	11	п	11	11	ii ii	
Benzo (k) fluoranthene	ND	10.0	att	n	31	11	11	ă	
Benzo (ghi) perylene	ND	10.0	300	8310	310	17	315	n	
Bis(2-ethylhexyl)phthalate	ND	10.0	10	u	III.	n	11	tt.	
Butyl benzyl phthalate	ND	10.0	11	Œ	"	u	w	ij.	
Chrysene	ND	10.0	11	11	"	ü		ij	
Di-n-butyl phthalate	ND	10.0	::10:		400.	"	11	n	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: MW-100 (B4J0574-12) Water	Sampled:	10/13/04 12:00	Received:	10/15/04	09:50				A-01b, AF-X
Dibenz (a,h) acridine	ND	10.0	ug/l	1	4J20009	10/20/04	11/24/04	.11	A-01a
Dibenz (a,h) anthracene	ND	10.0	y .	u	31	Ü	11	.11	
1,2-Dichlorobenzene	ND	10.0	u	.11	**	ü	11	n	
1,3-Dichlorobenzene	ND	10.0	300	31 t	100	au.	30%	300	
1,4-Dichlorobenzene	ND	10.0	.0	-0	11	u	III	u	
Diethyl phthalate	ND	10.0	W	0	11	11	u.	u	
7,12-Dimethylbenz (a) anthracene	ND	10.0	11	11	11	11	n.	n	A-01a
2,4-Dimethylphenol	11.6	10.0	11	n	111	i ii	310	310	
Dimethyl phthalate	ND	10.0	311	n	317	ារ	311	∃ t £	
2,4-Dinitrophenol	ND	10.0	.11	ų.		U	11	11	
Fluoranthene	ND	10.0	30.	u	11	ij	11	31	
Fluorene	ND	10.0	ii.	ű	11	ű	11	n	
Indene	ND	10.0	ail.	u.	216	u	318	3.00	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	THE STATE OF THE S	11	11	ij	m	u	
6-Methyl chrysene	ND	10.0	u	1.F	11	ij	u	u	A-01a
1-Methylnaphthalene	ND	10.0	.11	ij ·	.11	Ú.		10	A-01a
2-Methylnaphthalene	ND	10.0	n	ii .	11	ii .	n	11	
2-Methylphenol	ND	10.0	211	n	±1E	11	311	:115	
3 & 4-Methylphenol	ND	10.0	W.	11	ar	n	11.	17	
Naphthalene	ND	10.0	"	u	u	IJ		ii .	
4-Nitrophenol	ND	10.0	11	Ü	30	n	n	ij	
Di-n-octyl phthalate	ND	10.0	700	u	11	ũ	.00	ü	
Phenanthrene	ND	10.0	236	u	Str	ш	ur	"	
Phenol	ND	10.0	(II)	11	н	19	u	ij	
Pyrene	ND	10.0	u	11	11	11		11	
Pyridine	ND	10.0	100	11	n	ii	11	if	
Quinoline	ND	10.0	ü	11	'n	ij	11	11	A-01a
Thiophenol	ND	10.0	.000	11	311	11	210	11	A-01a
Surrogate: 2-FBP	32.3 %	41-129			"		n .	n	A-02
Surrogate: 2-FP	5.92 %	18-124			"	<i>y</i>	"	,,	A-02, J
Surrogate: Nitrobenzene-d5	37.8 %	44-124			"	<i>y</i> :	"	μ.	A-02
Surrogate: Phenol-d6	2.44 %	25-122			u u	11	u	in .	A-02, J
Surrogate: p-Terphenyl-d14	36.2 %	10-132			"	n-	"	"	
Surrogate: 2,4,6-TBP	44.4 %	19-132			"	n:	"	"	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: BLANK (B4J0574-13) Water	Camplede 1		Se-102 Se 2	are transported transported			,		
Acenaphthylene	ND	10.0		1: 10/15/04 1		10/20/04	11/05/04	EDA SOZOCI	A-01b, AF-X
Anthracene	ND	10.0	ug/l	1	4J20009	10/20/04	11/25/04	EPA 8270C	
Benzo (a) anthracene	ND	10.0	SIE	11	:316	,,	113	u	
Benzo (a) pyrene	ND	10.0	116	19	- 10	"	TI.	ü	
Benzo (b) fluoranthene	ND	10.0		0		u u		n	
Benzo (k) fluoranthene	ND	10.0	11		ü	ū	u	īī	
Benzo (ghi) perylene	ND	10.0	111	u	ii .	ű	11	.11	
Bis(2-ethylhexyl)phthalate	ND	10.0	em.	u	111	"	310	311	
Butyl benzyl phthalate	ND	10.0	THE	u	п	u	311	Tr.	
Chrysene	ND	10.0	au .	ñ	11	Ü	11	ir .	
Di-n-butyl phthalate	ND	10.0	u	ŭ	11	ũ	11	11	
Dibenz (a,h) acridine	ND	10.0	a	11	11	īī.	n.	30.7	A-01a
Dibenz (a,h) anthracene	ND	10.0	310	11	ार	19	11	917	71-014
1,2-Dichlorobenzene	ND	10.0	w	11	n.	n	11	30	
1,3-Dichlorobenzene	ND	10.0	19	11	11	ii	ıı .	ar.	
1,4-Dichlorobenzene	ND	10.0	"	Ď	,,	ŭ	u	11	
Diethyl phthalate	ND	10.0	11	,,,	"	11	310	311%	
7,12-Dimethylbenz (a) anthracene	ND	10.0	111		q	ŋ	100	300)	A-01a
2,4-Dimethylphenol	ND	10.0	-11	n	ū	U		11	71 014
Dimethyl phthalate	ND	10.0	n i	<u>ji</u>	ij.	ū	11	11	
2,4-Dinitrophenol	ND	10.0	ű	Ü	ű	ű	ii.	11.	
Fluoranthene	ND	10.0	u u		u	ш	311	ODE:	
Fluorene	ND	10.0	u	w	u	11		30	
Indene	ND	10.0	u.	11	ū	Ü	n	u	A-01a
Indeno (1,2,3-cd) pyrene	ND	10.0	ü	11	Ü	11	ü	.01	11 010
6-Methyl chrysene	ND	10.0	ü	ĬŤ.	ii	11		3100	A-01a
1-Methylnaphthalene	ND	10.0	11	39%	11	11	// (I F	300	A-01a
2-Methylnaphthalene	ND	10.0	**	11	n	10	n	11	71 010
2-Methylphenol	ND	10.0	11	11	11	n	11	11	
3 & 4-Methylphenol	ND	10.0	17	10	ij	ï		w.	
Naphthalene	ND	10.0	11	.002	u u	u u	811	n	
4-Nitrophenol	ND	10.0	11	.073	п	и	ar.	ag	
Di-n-octyl phthalate	ND	10.0	n,		u	11	n	n.	
Phenanthrene	ND	10.0		11	ij		n	(0)	
Phenol	ND	10.0	u	11	Ü	10	u	u	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
DRAFT: BLANK (B4J0574-13) Water	Sampled: 1	10/13/04 12:00	Receive	d: 10/15/04	09:50				A-01b, AF-X
Pyrene	ND	10.0	ug/l	1	4J20009	10/20/04	11/25/04	11	
Pyridine	ND	10.0	ű	ũ	и	ũ	11	11	
Quinoline	ND	10.0	u	u	AIL.	11	11:	11	A-01a
Thiophenol	ND	10.0	ŭ	"	п	ij.	11	n	A-01a
Surrogate: 2-FBP	66,4 %	41-129				"	11	•	
Surrogate: 2-FP	11.7 %	18-124			ii .	"	11	11	A-02, J
Surrogate: Nitrobenzene-d5	70.9 %	44-124			"	"	"	(t)	
Surrogate: Phenol-d6	4.93 %	25-122			"	"	"	11	A-02, J
Surrogate: p-Terphenyl-d14	75.7 %	10-132			"	"	"	"	
Surrogate: 2,4,6-TBP	86.2 %	19-132			n,	"	u	"	

8505 South Texas Road

Anacortes, WA 98221

Project: SWMU 11 Sampling

Spike

Source

%REC

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

RPD

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C - Quality Control

North Creek Analytical - Bothell

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20009: Prepare	d 10/20/04	Using E	PA 3510C								
Blank (4J20009-BLK1)										Α	-01b, AF-X
Acenaphthylene		ND	10.0	ug/l							
Anthracene		ND	10.0	® U							
Benzo (a) anthracene		ND	10.0	n							
Benzo (a) pyrene		ND	10.0	11							
Benzo (b) fluoranthene		ND	10.0	tt							
Benzo (k) fluoranthene		ND	10.0	1:46							
Benzo (ghi) perylene		ND	10.0	u							
Bis(2-ethylhexyl)phthalate		ND	10.0	u							
Butyl benzyl phthalate		ND	10.0	11							
Chrysene		ND	10.0	ü							
Di-n-butyl phthalate		ND	10.0	u.							
Dibenz (a,h) acridine		ND	10.0	u.							A-0
Dibenz (a,h) anthracene		ND	10.0	ü							
1,2-Dichlorobenzene		ND	10.0	ŭ							
1,3-Dichlorobenzene		ND	10.0	ii							
1,4-Dichlorobenzene		ND	10.0	11							
Diethyl phthalate		ND	10.0	ü							
7,12-Dimethylbenz (a) anthracene		ND	10.0	<u>u</u>							A-0
2,4-Dimethylphenol		ND	10.0	ñ							
Dimethyl phthalate		ND	10.0	U							
2,4-Dinitrophenol		ND	10.0	n							
Fluoranthene		ND	10.0	W.							
Fluorene		ND	10.0	11							
Indene		ND	10.0	Ü							A-0
Indeno (1,2,3-cd) pyrene		ND	10.0	11							
6-Methyl chrysene		ND	10.0	9							
1-Methylnaphthalene		ND	10.0	ñ							A-0
2-Methylnaphthalene		ND	10.0	n							
2-Methylphenol		ND	10.0	n							
3 & 4-Methylphenol		ND	10.0	"							
Naphthalene		ND	10.0	9							

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221 Project: SWMU 11 Sampling

Source

Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

RPD

%REC

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C - Quality Control

North Creek Analytical - Bothell

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20009:	Prepared 10/20/04	Using EP	A 3510C								
Blank (4J20009-BLK	(1)									A	-01b, AF-X
4-Nitrophenol		ND	10.0	ug/l							
Di-n-octyl phthalate		ND	10.0	11							
Phenanthrene		ND	10.0	at.							
Phenol		ND	10.0	11							
Pyrene		ND	10.0								
Pyridine		ND	10.0	11							
Quinoline		ND	10.0	11							
Thiophenol		ND	10.0	200							
Surrogate: 2-FBP		15.0		n	50,0		30.0	41-129			A-02a
Surrogate: 2-FP		3.22		"	50.0		6.44	18-124			A-02a, J
Surrogate: Nitrobenzene	-d5	10.5		n	50.0		21.0	44-124			A-02a
Surrogate: Phenol-d6		1.34		n	50.0		2.68	25-122			A-02a, J
Surrogate: p-Terphenyl-	d14	21.7		"	50.0		43.4	10-132			
Surrogate: 2,4,6-TBP		11.6		и	50.0		23.2	19-132			
LCS (4J20009-BS1)										A	-01b, AF-X
1,4-Dichlorobenzene		56.5	10.0	ug/l	100		56.5	43-122			
4-Nitrophenol		9.84	10.0	11	100		9.84	12-153			A-02, J
Phenol		8.28	10.0	.17	100		8.28	20-124			A-02, J
Pyrene		64.8	10.0	11	100		64.8	59-134			
Surrogate: 2-FBP		41.4		"	50.0		82.8	41-129			
Surrogate: 2-FP		8,44		"	50.0		16.9	18-124			A-02, J
Surrogate: Nitrobenzene	-d5	34.4		n	50.0		68.8	44-124			
Surrogate: Phenol-d6		3.84		"	50.0		7.68	25-122			A-02, J
Surrogate: p-Terphenyl-	d14	34.0		H.	50.0		68.0	10-132			
Surrogate: 2,4,6-TBP		38.1		"	50.0		76.2	19-132			
LCS Dup (4J20009-1	BSD1)									Λ	-01b, AF-X
1,4-Dichlorobenzene		35.5	10.0	ug/l	100		35,5	43-122	45.7	26	A-02
4-Nitrophenol		7.74	10.0	11	100		7.74	12-153	23.9	37	A-02, J
Phenol		7.06	10.0	11	100		7.06	20-124	15.9	53	A-02, J
Pyrene		63.3	10.0	19	100		63.3	59-134	2.34	50	

DRAFT REPORT

8505 South Texas Road Anacortes, WA 98221

Project: SWMU 11 Sampling

Project Number: PO# 4550237616 Project Manager: Brian Rhodes

Reported: 12/30/04 16:54

DRAFT: Semivolatile Organic Compounds (Modified Skinner List) by EPA Method 8270C - Quality **Control**

North Creek Analytical - Bothell

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4J20009: Prepared 10/20/04	Using EP	PA 3510C								10
LCS Dup (4J20009-BSD1)									F	A-01b, AF-X
Surrogate: 2-FBP	33.1		ug/l	50.0		66.2	41-129			
Surrogate: 2-FP	6.60		"	50.0		13.2	18-124			A-02, J
Surrogate: Nitrobenzene-d5	26.4		"	50.0		52.8	44-124			
Surrogate: Phenol-d6	3.14		"	50.0		6.28	25-122			A-02, J
Surrogate: p-Terphenyl-d14	33.1		"	50.0		66.2	10-132			
Surrogate: 2,4,6-TBP	32.3		"	50.0		64.6	19-132			

DRAFT REPORT

Project: SWMU 11 Sampling

8505 South Texas Road Anacortes, WA 98221 Project Number: PO# 4550237616 Project Manager: Brian Rhodes Reported: 12/30/04 16:54

Notes and Definitions

A-01 Modified 8270C/No valid curve.

A-01a Results calculated from single-point calibration using continuing calibration response factors from daily CCV.

A-01b See Nonconformance Report; data integrity has been impacted.

A-02 Outside of acceptance criteria.

A-02a Surrogate recovery outside acceptance limit.

AF-X Internal standards out of control. See Nonconformance Report.

J Estimated value.

R-03 The reporting limit for this analyte has been raised to account for interference from coeluting organic compounds present in the

sample.

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

DRAFT REPORT

LabNumber	Analysis	Analyte	Exception
B4J0574-04	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-01	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-01	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-01	8270C Texaco Skinner	Indene	A-01
B4J0574-01	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01
B4J0574-01	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01
B4J0574-01	8270C Texaco Skinner	2-FP	A-02
B4J0574-01	8270C Texaco Skinner	1-Methylnaphthalene	A-01
B4J0574-01	8270C Texaco Skinner		AF-X
B4J0574-01	8270C Texaco Skinner		A-01b
B4J0574-04	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-04	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-04	8270C Texaco Skinner	Indene	A-01a
B4J0574-06	8270C Texaco Skinner		AF-X
B4J0574-04	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-02	8270C Texaco Skinner	1-Methylnaphthalene	A-01
B4J0574-04	8270C Texaco Skinner	2-FP	A-02
B4J0574-04	8270C Texaco Skinner	2-FBP	A-02
B4J0574-04	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-04	8270C Texaco Skinner	15 - 4 700 Biological Control	AF-X
B4J0574-04	8270C Texaco Skinner		A-01b
B4J0574-03	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-03	8270C Texaco Skinner	Ouinoline	A-01a
B4J0574-03	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-03	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-03	8270C Texaco Skinner	Indene	A-01a
B4J0574-03	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-03	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-04	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-04	8270C Texaco Skinner	Thiophenol	A-01a
			Default Report (not modified)
B4J0574-05	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-05	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-05	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-05	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-05	8270C Texaco Skinner	Indene	A-01a
B4J0574-05	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-05	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-05	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-05	8270C Texaco Skinner	2-FP	A-02
B4J0574-05	8270C Texaco Skinner	2-FBP	A-02
B4J0574-05	8270C Texaco Skinner	1-Methylnaphthalene	
B4J0574-02	8270C Texaco Skinner	ov one extransity with the state that the things of the state of the s	
B4J0574-05	8270C Texaco Skinner		
B4J0574-05 B4J0574-02	8270C Texaco Skinner 8270C Texaco Skinner	2-FBP 1-Methylnaphthalene	A-02 A-01a A-01b A-01b

LabNumber	Analysis	Analyte	Exception
B4J0574-02	8270C Texaco Skinner		AF-X
B4J0574-04	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-03	8270C Texaco Skinner	2-FBP	A-02
B4J0574-03	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-03	8270C Texaco Skinner		AF-X
B4J0574-03	8270C Texaco Skinner		A-01b
B4J0574-02	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-02	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-02	8270C Texaco Skinner	Indene	A-01
B4J0574-02	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01
B4J0574-02	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01
B4J0574-02	8270C Texaco Skinner	2-FP	A-02
B4J0574-02	8270C Texaco Skinner	2-FBP	A-02
4J20009-BSD1	8270C Texaco Skinner	1,4-Dichlorobenzene	Exceeds RPD limit
B4J0574-05	8270C Texaco Skinner		AF-X
B4J0574-05	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-08	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-08	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-07	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-06	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-06	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-07	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-06	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-06	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-05	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-05	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-04	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-08	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-05	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-09	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-04	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-04	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-02	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-02	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-02	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-02	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-01	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-01	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-01	8270C Texaco Skinner	2-FP	Exceeds lower control limit
			PODAGON NAMEDIA SIN NO

LabNumber	Analysis	Analyte	Exception
B4J0574-09	8270C Texaco Skinner	2-FBP	Exceeds upper control limit
B4J0574-06	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
4J20009-BSD1	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
4J20009-BSD1	8270C Texaco Skinner	Phenol	Exceeds lower control limit
4J20009-BSD1	8270C Texaco Skinner	2-FP	Exceeds lower control limit
4J20009-BSD1	8270C Texaco Skinner	1,4-Dichlorobenzene	Exceeds lower control limit
4J20009-BS1	8270C Texaco Skinner	4-Nitrophenol	Exceeds lower control limit
4J20009-BS1	8270C Texaco Skinner	2-FP	Exceeds lower control limit
4J20009-BSD1	8270C Texaco Skinner	4-Nitrophenol	Exceeds lower control limit
4J20009-BS1	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
4J20009-BS1	8270C Texaco Skinner	Phenol	Exceeds lower control limit
4J20009-BLK1	8270C Texaco Skinner	2-FP	Exceeds lower control limit
4J20009-BLK1	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-08	8270C Texaco Skinner	2-FP	Exceeds lower control limit
4J20009-BLK1	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-03	8270C Texaco Skinner	2-FP	A-02
B4J0574-09	8270C Texaco Skinner	p-Terphenyl-d14	Exceeds upper control limit
B4J0574-09	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds upper control limit
B4J0574-13	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-12	8270C Texaco Skinner	Nitrobenzene-d5	Exceeds lower control limit
B4J0574-13	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-12	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-12	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-12	8270C Texaco Skinner	2-FBP	Exceeds lower control limit
B4J0574-11	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-11	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-10	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
B4J0574-10	8270C Texaco Skinner	2-FP	Exceeds lower control limit
B4J0574-09	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
4J20009-BLK1	8270C Texaco Skinner	Phenol-d6	Exceeds lower control limit
4J20009-BS1	8270C Texaco Skinner	Phenol	A-02
B4J0574-08	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-08	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-08	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-08	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-08	8270C Texaco Skinner	Indene	A-01a
B4J0574-08	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
4J20009-BSD1	8270C Texaco Skinner	Phenol-d6	A-02
4J20009-BSD1	8270C Texaco Skinner	Phenol	A-02
4J20009-BSD1	8270C Texaco Skinner	4-Nitrophenol	A-02
4J20009-BSD1	8270C Texaco Skinner	2-FP	A-02
4J20009-BSD1	8270C Texaco Skinner	1,4-Dichlorobenzene	A-02
4J20009-BSD1	8270C Texaco Skinner		AF-X
B4J0574-06	8270C Texaco Skinner		A-01b
4J20009-BS1	8270C Texaco Skinner	Phenol-d6	A-02

LabNumber	Analysis	Analyte	Exception
B4J0574-09	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
4J20009-BS1	8270C Texaco Skinner	4-Nitrophenol	A-02
4J20009-BS1	8270C Texaco Skinner	2-FP	A-02
4J20009-BS1	8270C Texaco Skinner		AF-X
4J20009-BS1	8270C Texaco Skinner		A-01b
4J20009-BLK1	8270C Texaco Skinner	Phenol-d6	A-02a
4J20009-BLK1	8270C Texaco Skinner	Nitrobenzene-d5	A-02a
4J20009-BLK1	8270C Texaco Skinner	Indene	A-01
4J20009-BLK1	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01
4J20009-BLK1	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01
4J20009-BLK1	8270C Texaco Skinner	2-FP	A-02a
4J20009-BLK1	8270C Texaco Skinner	2-FBP	A-02a
4J20009-BLK1	8270C Texaco Skinner	1-Methylnaphthalene	A-01
4J20009-BSD1	8270C Texaco Skinner		A-01b
B4J0574-11	8270C Texaco Skinner	Indene	A-01a
B4J0574-13	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-13	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-13	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-13	8270C Texaco Skinner	2-FP	A-02
B4J0574-13	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-13	8270C Texaco Skinner		AF-X
B4J0574-13	8270C Texaco Skinner		A-01b
B4J0574-12	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-12	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-12	8270C Texaco Skinner		AF-X
B4J0574-12	8270C Texaco Skinner		A-01b
B4J0574-11	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-09	8270C Texaco Skinner		A-01b
B4J0574-11	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-09	8270C Texaco Skinner		AF-X
B4J0574-11	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-11	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-10	8270C Texaco Skinner	Indene	A-01a
B4J0574-10	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-10	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-10	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-10	8270C Texaco Skinner	2-FP	A-02
B4J0574-10	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-10	8270C Texaco Skinner		AF-X
B4J0574-10	8270C Texaco Skinner		A-01b
B4J0574-09	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-09	8270C Texaco Skinner	2-FBP	A-02
B4J0574-13	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-11	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-07	8270C Texaco Skinner	2-FP	A-02

LabNumber	Analysis	Analyte	Exception
4J20009-BLK1	8270C Texaco Skinner		AF-X
B4J0574-08	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-08	8270C Texaco Skinner	2-FP	A-02
B4J0574-08	8270C Texaco Skinner	2-FBP	A-02
B4J0574-08	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-08	8270C Texaco Skinner		AF-X
B4J0574-08	8270C Texaco Skinner		A-01b
B4J0574-07	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-07	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-07	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-07	8270C Texaco Skinner	Indene	A-01a
B4J0574-07	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-09	8270C Texaco Skinner	2-FP	A-02
B4J0574-07	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-09	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-07	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-07	8270C Texaco Skinner		AF-X
B4J0574-07	8270C Texaco Skinner		A-01b
B4J0574-06	8270C Texaco Skinner	Thiophenol	A-01a
B4J0574-06	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-06	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-06	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-06	8270C Texaco Skinner	Indene	A-01a
B4J0574-06	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-06	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-06	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-06	8270C Texaco Skinner	2-FP	A-02
B4J0574-06	8270C Texaco Skinner	2-FBP	A-02
B4J0574-07	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-11	8270C Texaco Skinner	1-Methylnaphthalene	A-01a
B4J0574-13	8270C Texaco Skinner	Indene	A-01a
B4J0574-13	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-13	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-12	8270C Texaco Skinner	Quinoline	A-01a
B4J0574-12	8270C Texaco Skinner	Phenol-d6	A-02
B4J0574-12	8270C Texaco Skinner	Nitrobenzene-d5	A-02
B4J0574-12	8270C Texaco Skinner	Indene	A-01a
B4J0574-12	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a
B4J0574-12	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-12	8270C Texaco Skinner	6-Methyl chrysene	A-01a
B4J0574-12	8270C Texaco Skinner	2-FP	A-02
B4J0574-12	8270C Texaco Skinner	2-FBP	A-02
B4J0574-08	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a
B4J0574-11	8270C Texaco Skinner	2-FP	A-02
4J20009-BLK1	8270C Texaco Skinner		A-01b

LabNumber	Analysis	Analyte	Exception	
B4J0574-11	8270C Texaco Skinner		AF-X	
B4J0574-11	8270C Texaco Skinner		A-01b	
B4J0574-10	8270C Texaco Skinner	Thiophenol	A-01a	
B4J0574-10	8270C Texaco Skinner	Quinoline	A-01a	
B4J0574-10	8270C Texaco Skinner	Phenol-d6	A-02	
B4J0574-10	8270C Texaco Skinner	Indene	R-03	
B4J0574-09	8270C Texaco Skinner	Quinoline	A-01a	
B4J0574-09	8270C Texaco Skinner	Phenol-d6	A-02	
B4J0574-09	8270C Texaco Skinner	p-Terphenyl-d14	A-02	
B4J0574-09	8270C Texaco Skinner	Nitrobenzene-d5	A-02	
B4J0574-09	8270C Texaco Skinner	Indene	A-01a	
B4J0574-09	8270C Texaco Skinner	Dibenz (a,h) acridine	A-01a	
B4J0574-09	8270C Texaco Skinner	7,12-Dimethylbenz (a) anthracene	A-01a	
B4J0574-11	8270C Texaco Skinner	6-Methyl chrysene	A-01a	