

Analytes (BDL = Below Detection Limit; ND = Non Detect)

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])													
				500	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390
Location	Sample Date:	Sample Matrix	Matrix Notes	TPH (total volatile and extractable petroleum hydrocarbons)			Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	Napthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver
PH25	02/15/11	Cuttings		100.62	0.62	100	0.011	BDL	BDL	0.015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.35	BDL	2.4	24	8.7	4.8	6600	0.63	14	BDL	17	12	0.02	14	bdl	BDL	39





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Est. 1970

Chris Hines or Brad Kieding  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Monday February 21, 2011

Report Number: L501836

Samples Received: 02/16/11

Client Project:

Description: PH25 Cuttings

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140  
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Chris Hines or Brad Kieding  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

February 21, 2011

Date Received : February 16, 2011  
Description : PH25 Cuttings  
Sample ID : PH25-CUTTINGS-021511  
Collected By : Aaron Stacy  
Collection Date : 02/15/11 13:30

ESC Sample # : L501836-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	02/18/11	1
Chromium, Trivalent	14.	2.0	mg/kg	Calc.	02/17/11	1
ORP	-5.0		mV	2580	02/17/11	1
pH	8.7		su	9045D	02/17/11	1
Sodium Adsorption Ratio	24.			Calc.	02/18/11	1
Specific Conductance	2400		umhos/cm	9050AMod	02/18/11	1
Mercury	0.020	0.020	mg/kg	7471	02/17/11	1
Arsenic	4.8	1.0	mg/kg	6010B	02/17/11	1
Barium	6600	0.50	mg/kg	6010B	02/17/11	2
Cadmium	0.63	0.25	mg/kg	6010B	02/17/11	1
Chromium	14.	0.50	mg/kg	6010B	02/17/11	1
Copper	17.	1.0	mg/kg	6010B	02/17/11	1
Lead	12.	0.25	mg/kg	6010B	02/17/11	1
Nickel	14.	1.0	mg/kg	6010B	02/17/11	1
Selenium	BDL	2.0	mg/kg	6010B	02/17/11	2
Silver	BDL	0.50	mg/kg	6010B	02/17/11	1
Zinc	39.	1.5	mg/kg	6010B	02/17/11	1
Benzene	0.011	0.0025	mg/kg	8021/8015	02/16/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	02/16/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	02/16/11	5
Total Xylene	0.015	0.0075	mg/kg	8021/8015	02/16/11	5
TPH (GC/FID) Low Fraction	0.62	0.50	mg/kg	GRO	02/16/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	02/16/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	02/16/11	5
TPH (GC/FID) High Fraction	100	4.0	mg/kg	3546/DRO	02/17/11	1
Surrogate recovery(%)						
o-Terphenyl	61.5		% Rec.	3546/DRO	02/17/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L501836-01 (PH) - 8.7@20.0C  
L501836-01 (SV8270PAHSIM) - Dilution due to matrix





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February 21, 2011

Date Received : February 16, 2011  
Description : PH25 Cuttings  
Sample ID : PH25-CUTTINGS-021511  
Collected By : Aaron Stacy  
Collection Date : 02/15/11 13:30

ESC Sample # : L501836-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Naphthalene	0.35	0.12	mg/kg	8270C-SIM	02/21/11	20
Phenanthrene	0.22	0.12	mg/kg	8270C-SIM	02/21/11	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
1-Methylnaphthalene	0.32	0.12	mg/kg	8270C-SIM	02/21/11	20
2-Methylnaphthalene	0.76	0.12	mg/kg	8270C-SIM	02/21/11	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	02/21/11	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	02/21/11	20
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	02/21/11	20
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	02/21/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 02/21/11 14:16 Printed: 02/21/11 14:16

L501836-01 (PH) - 8.7@20.0C

L501836-01 (SV8270PAHSIM) - Dilution due to matrix



Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L501836-01	WG521820	SAMP	Selenium	R1579771	O
	WG521798	SAMP	Nitrobenzene-d5	R1578330	J7
	WG521798	SAMP	2-Fluorobiphenyl	R1578330	J7
	WG521798	SAMP	p-Terphenyl-d14	R1578330	J7



Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



Summary of Remarks For Samples Printed  
02/21/11 at 14:16:27

TSR Signing Reports: 358  
R4 - Rush: Three Day

Log all samples beginning with different sample numbers to separate reports. Ex.- M34 N PIT and M34 S PIT go on one L#, but M34 S PIT and E34 S PIT go on separate L #s. Log project # as project name.

Sample: L501836-01 Account: ENCANACO Received: 02/16/11 08:45 Due Date: 02/21/11 00:00 RPT Date: 02/21/11 14:16





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Quality Assurance Report  
Level II

L501836

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February 21, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG521733	02/16/11 08:39
Ethylbenzene	< .0005	mg/kg			WG521733	02/16/11 08:39
Toluene	< .005	mg/kg			WG521733	02/16/11 08:39
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG521733	02/16/11 08:39
Total Xylene	< .0015	mg/kg			WG521733	02/16/11 08:39
a,a,a-Trifluorotoluene(FID)		% Rec.	102.4	59-128	WG521733	02/16/11 08:39
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG521733	02/16/11 08:39
1-Methylnaphthalene	< .006	mg/kg			WG521798	02/17/11 09:54
2-Chloronaphthalene	< .006	mg/kg			WG521798	02/17/11 09:54
2-Methylnaphthalene	< .006	mg/kg			WG521798	02/17/11 09:54
Acenaphthene	< .006	mg/kg			WG521798	02/17/11 09:54
Acenaphthylene	< .006	mg/kg			WG521798	02/17/11 09:54
Anthracene	< .006	mg/kg			WG521798	02/17/11 09:54
Benzo(a)anthracene	< .006	mg/kg			WG521798	02/17/11 09:54
Benzo(a)pyrene	< .006	mg/kg			WG521798	02/17/11 09:54
Benzo(b)fluoranthene	< .006	mg/kg			WG521798	02/17/11 09:54
Benzo(g,h,i)perylene	< .006	mg/kg			WG521798	02/17/11 09:54
Benzo(k)fluoranthene	< .006	mg/kg			WG521798	02/17/11 09:54
Chrysene	< .006	mg/kg			WG521798	02/17/11 09:54
Dibenz(a,h)anthracene	< .006	mg/kg			WG521798	02/17/11 09:54
Fluoranthene	< .006	mg/kg			WG521798	02/17/11 09:54
Fluorene	< .006	mg/kg			WG521798	02/17/11 09:54
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG521798	02/17/11 09:54
Naphthalene	< .006	mg/kg			WG521798	02/17/11 09:54
Phenanthrene	< .006	mg/kg			WG521798	02/17/11 09:54
Pyrene	< .006	mg/kg			WG521798	02/17/11 09:54
2-Fluorobiphenyl		% Rec.	80.80	21-120	WG521798	02/17/11 09:54
Nitrobenzene-d5		% Rec.	77.67	33-114	WG521798	02/17/11 09:54
p-Terphenyl-d14		% Rec.	81.24	18-142	WG521798	02/17/11 09:54
pH	4.50	su			WG521919	02/17/11 11:23
TPH (GC/FID) High Fraction	< 4	ppm			WG521785	02/17/11 09:09
o-Terphenyl		% Rec.	92.81	50-150	WG521785	02/17/11 09:09
Mercury	< .02	mg/kg			WG521859	02/17/11 10:59
Arsenic	< 1	mg/kg			WG521820	02/17/11 14:27
Barium	< .25	mg/kg			WG521820	02/17/11 14:27
Cadmium	< .25	mg/kg			WG521820	02/17/11 14:27
Chromium	< .5	mg/kg			WG521820	02/17/11 14:27
Copper	< 1	mg/kg			WG521820	02/17/11 14:27
Lead	< .25	mg/kg			WG521820	02/17/11 14:27
Nickel	< 1	mg/kg			WG521820	02/17/11 14:27
Selenium	< 1	mg/kg			WG521820	02/17/11 14:27
Silver	< .5	mg/kg			WG521820	02/17/11 14:27
Zinc	< 1.5	mg/kg			WG521820	02/17/11 14:27
Chromium,Hexavalent	< 2	mg/kg			WG521709	02/18/11 11:44
Specific Conductance	0.460	umhos/cm			WG522077	02/18/11 15:42
* Performance of this Analyte is outside of established criteria.						
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'						





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February 21, 2011

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
pH	su	9.40	9.30		1.07*	1	L501833-01	WG521919
pH	su	6.60	6.50		1.53*	1	L502055-11	WG521919
ORP	mV	0	0		0	20	L501836-01	WG521908
ORP	mV	74.0	73.0		1.36	20	L502055-09	WG521908
Mercury	mg/kg	0.0400	0.0326		20.1*	20	L501937-05	WG521859
Arsenic	mg/kg	11.0	4.59		83.7*	20	L501824-03	WG521820
Barium	mg/kg	14.0	12.8		9.67	20	L501824-03	WG521820
Cadmium	mg/kg	0.510	0.330		43.6*	20	L501824-03	WG521820
Chromium	mg/kg	3.50	3.37		2.92	20	L501824-03	WG521820
Copper	mg/kg	13.0	10.6		18.0	20	L501824-03	WG521820
Lead	mg/kg	5.50	4.94		11.3	20	L501824-03	WG521820
Nickel	mg/kg	6.70	5.16		25.8*	20	L501824-03	WG521820
Selenium	mg/kg	0	0		0	20	L501824-03	WG521820
Silver	mg/kg	0	0		0	20	L501824-03	WG521820
Zinc	mg/kg	48.0	32.3		39.5*	20	L501824-03	WG521820
Chromium, Hexavalent	mg/kg	0	0		0	20	L501544-21	WG521709
Chromium, Hexavalent	mg/kg	0	0		0	20	L501459-02	WG521709
Specific Conductance	umhos/cm	1800	1800		3.22	20	L502241-03	WG522077

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0465	92.9	76-113	WG521733
Ethylbenzene	mg/kg	.05	0.0515	103.	78-115	WG521733
Toluene	mg/kg	.05	0.0495	99.1	76-114	WG521733
Total Xylene	mg/kg	.15	0.161	107.	81-118	WG521733
a,a,a-Trifluorotoluene(PID)				98.43	54-144	WG521733
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.43	117.	67-135	WG521733
a,a,a-Trifluorotoluene(FID)				93.55	59-128	WG521733
1-Methylnaphthalene	mg/kg	.033	0.0301	91.4	41-110	WG521798
2-Chloronaphthalene	mg/kg	.033	0.0311	94.3	43-109	WG521798
2-Methylnaphthalene	mg/kg	.033	0.0305	92.5	38-104	WG521798
Acenaphthene	mg/kg	.033	0.0292	88.5	48-103	WG521798
Acenaphthylene	mg/kg	.033	0.0299	90.6	43-106	WG521798
Anthracene	mg/kg	.033	0.0297	90.1	51-110	WG521798
Benzo(a)anthracene	mg/kg	.033	0.0281	85.3	38-126	WG521798
Benzo(a)pyrene	mg/kg	.033	0.0304	92.0	47-118	WG521798
Benzo(b)fluoranthene	mg/kg	.033	0.0293	88.8	47-118	WG521798
Benzo(g,h,i)perylene	mg/kg	.033	0.0357	108.	40-125	WG521798
Benzo(k)fluoranthene	mg/kg	.033	0.0316	95.8	45-121	WG521798
Chrysene	mg/kg	.033	0.0290	87.8	35-135	WG521798
Dibenz(a,h)anthracene	mg/kg	.033	0.0341	103.	41-124	WG521798
Fluoranthene	mg/kg	.033	0.0325	98.6	50-114	WG521798
Fluorene	mg/kg	.033	0.0298	90.2	49-109	WG521798
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0346	105.	40-126	WG521798
Naphthalene	mg/kg	.033	0.0296	89.6	36-100	WG521798
Phenanthrene	mg/kg	.033	0.0301	91.3	46-108	WG521798

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'





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February 21, 2011

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Pyrene	mg/kg	.033		0.0293	88.7	30-136	WG521798
2-Fluorobiphenyl					87.70	33-114	WG521798
Nitrobenzene-d5					84.06	21-120	WG521798
p-Terphenyl-d14					84.01	18-142	WG521798
pH	su	6.3		6.30	100.	97.98-102.02	WG521919
ORP	mV	229		220.	96.1	95.6-104.37	WG521908
TPH (GC/FID) High Fraction	ppm	60		58.0	96.6	50-150	WG521785
o-Terphenyl					92.94	50-150	WG521785
Mercury	mg/kg	8.77		10.9	124.	71.6-127.7	WG521859
Arsenic	mg/kg	192		192.	100.	78.6-120.8	WG521820
Barium	mg/kg	420		418.	99.5	78.8-121.4	WG521820
Cadmium	mg/kg	70.1		67.4	96.1	78.5-121.5	WG521820
Chromium	mg/kg	168		167.	99.4	80.4-120.2	WG521820
Copper	mg/kg	122		119.	97.5	81.6-119.7	WG521820
Lead	mg/kg	113		115.	102.	77.3-122.1	WG521820
Nickel	mg/kg	74.1		73.8	99.6	78.8-121.2	WG521820
Selenium	mg/kg	176		177.	101.	75.6-125.0	WG521820
Silver	mg/kg	115		113.	98.3	66-133.9	WG521820
Zinc	mg/kg	437		420.	96.1	78.5-121.7	WG521820
Chromium, Hexavalent	mg/kg	100		118.	118.	50-143	WG521709
Specific Conductance	umhos/cm	561		560.	99.8	85-115	WG522077

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0487	0.0465	97.0	76-113	4.73	20	WG521733
Ethylbenzene	mg/kg	0.0537	0.0515	107.	78-115	4.17	20	WG521733
Toluene	mg/kg	0.0517	0.0495	103.	76-114	4.20	20	WG521733
Total Xylene	mg/kg	0.167	0.161	112.	81-118	4.07	20	WG521733
a,a,a-Trifluorotoluene(PID)				99.22	54-144			WG521733
TPH (GC/FID) Low Fraction	mg/kg	5.87	6.43	107.	67-135	8.99	20	WG521733
a,a,a-Trifluorotoluene(FID)				91.87	59-128			WG521733
1-Methylnaphthalene	mg/kg	0.0288	0.0301	87.0	41-110	4.63	24	WG521798
2-Chloronaphthalene	mg/kg	0.0305	0.0311	92.0	43-109	2.10	21	WG521798
2-Methylnaphthalene	mg/kg	0.0290	0.0305	88.0	38-104	5.12	24	WG521798
Acenaphthene	mg/kg	0.0291	0.0292	88.0	48-103	0.167	20	WG521798
Acenaphthylene	mg/kg	0.0292	0.0299	88.0	43-106	2.32	20	WG521798
Anthracene	mg/kg	0.0291	0.0297	88.0	51-110	2.20	22	WG521798
Benzo(a)anthracene	mg/kg	0.0269	0.0281	81.0	38-126	4.71	20	WG521798
Benzo(a)pyrene	mg/kg	0.0290	0.0304	88.0	47-118	4.46	20	WG521798
Benzo(b)fluoranthene	mg/kg	0.0289	0.0293	88.0	47-118	1.27	29	WG521798
Benzo(g,h,i)perylene	mg/kg	0.0365	0.0357	110.	40-125	2.25	20	WG521798
Benzo(k)fluoranthene	mg/kg	0.0298	0.0316	90.0	45-121	5.80	31	WG521798

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chrysene	mg/kg	0.0294	0.0290	89.0	35-135	1.50	20	WG521798
Dibenz(a,h)anthracene	mg/kg	0.0347	0.0341	105.	41-124	1.70	20	WG521798
Fluoranthene	mg/kg	0.0317	0.0325	96.0	50-114	2.61	20	WG521798
Fluorene	mg/kg	0.0294	0.0298	89.0	49-109	1.12	19	WG521798
Indeno(1,2,3-cd)pyrene	mg/kg	0.0355	0.0346	108.	40-126	2.83	20	WG521798
Naphthalene	mg/kg	0.0279	0.0296	84.0	36-100	5.93	24	WG521798
Phenanthrene	mg/kg	0.0291	0.0301	88.0	46-108	3.49	21	WG521798
Pyrene	mg/kg	0.0294	0.0293	89.0	30-136	0.388	20	WG521798
2-Fluorobiphenyl				87.40	33-114			WG521798
Nitrobenzene-d5				79.82	21-120			WG521798
p-Terphenyl-d14				81.23	18-142			WG521798
pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG521919
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG521908
TPH (GC/FID) High Fraction	ppm	46.5	58.0	78.0	50-150	21.9	25	WG521785
o-Terphenyl				75.86	50-150			WG521785
Chromium, Hexavalent	mg/kg	111.	118.	111.	50-143	6.11	20	WG521709
Specific Conductance	umhos/	560.	560.	100.	85-115	0	20	WG522077

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.0486	0.00750	.05	82.2	32-137	L501461-03	WG521733
Ethylbenzene	mg/kg	0.0482	0.00580	.05	84.9	10-150	L501461-03	WG521733
Toluene	mg/kg	0.0494	0.0140	.05	70.7	20-142	L501461-03	WG521733
Total Xylene	mg/kg	0.149	0.0130	.15	90.4	16-141	L501461-03	WG521733
a,a,a-Trifluorotoluene(PID)					99.39	54-144		WG521733
TPH (GC/FID) Low Fraction	mg/kg	4.94	0.797	5.5	75.3	55-109	L501461-03	WG521733
a,a,a-Trifluorotoluene(FID)					92.08	59-128		WG521733
TPH (GC/FID) High Fraction	ppm	50.9	0	60	84.9	50-150	L501919-01	WG521785
o-Terphenyl					75.49	50-150		WG521785
Mercury	mg/kg	0.214	0.0326	.25	72.6	70-130	L501937-05	WG521859
Mercury	mg/kg	0.159	0.0326	.25	50.6*	70-130	L501937-05	WG521859
Arsenic	mg/kg	58.2	4.59	50	107.	75-125	L501824-03	WG521820
Barium	mg/kg	60.1	12.8	50	94.6	75-125	L501824-03	WG521820
Cadmium	mg/kg	49.2	0.330	50	97.7	75-125	L501824-03	WG521820
Chromium	mg/kg	54.2	3.37	50	102.	75-125	L501824-03	WG521820
Copper	mg/kg	63.9	10.6	50	107.	75-125	L501824-03	WG521820
Lead	mg/kg	57.1	4.94	50	104.	75-125	L501824-03	WG521820
Nickel	mg/kg	55.1	5.16	50	99.9	75-125	L501824-03	WG521820
Selenium	mg/kg	50.9	0	50	102.	75-125	L501824-03	WG521820
Silver	mg/kg	49.4	0	50	98.8	75-125	L501824-03	WG521820
Zinc	mg/kg	95.5	32.3	50	126.*	75-125	L501824-03	WG521820

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Chromium, Hexavalent	mg/kg	7.24	4.80	20	12.2*	50-150	L501544-05	WG521709
1-Methylnaphthalene	mg/kg	0.0393	0	.033	119.	19-131	L501919-04	WG521798
2-Chloronaphthalene	mg/kg	0.0356	0	.033	108.	38-117	L501919-04	WG521798
2-Methylnaphthalene	mg/kg	0.0525	0	.033	159.*	18-125	L501919-04	WG521798
Acenaphthene	mg/kg	0.0393	0	.033	119.	31-120	L501919-04	WG521798
Acenaphthylene	mg/kg	0.0457	0	.033	138.*	34-116	L501919-04	WG521798
Anthracene	mg/kg	0.105	0.0230	.033	248.*	32-131	L501919-04	WG521798
Benzo(a)anthracene	mg/kg	0.143	0.0240	.033	360.*	32-131	L501919-04	WG521798
Benzo(a)pyrene	mg/kg	0.105	0.0180	.033	264.*	28-130	L501919-04	WG521798
Benzo(b)fluoranthene	mg/kg	0.145	0.0430	.033	308.*	37-130	L501919-04	WG521798
Benzo(g,h,i)perylene	mg/kg	0.0447	0.0160	.033	87.1	10-134	L501919-04	WG521798
Benzo(k)fluoranthene	mg/kg	0.167	0.0240	.033	432.*	31-129	L501919-04	WG521798
Chrysene	mg/kg	0.144	0.0390	.033	319.*	25-137	L501919-04	WG521798
Dibenz(a,h)anthracene	mg/kg	0.0300	0.00840	.033	65.3	20-134	L501919-04	WG521798
Fluoranthene	mg/kg	0.265	0.0860	.033	543.*	27-138	L501919-04	WG521798
Fluorene	mg/kg	0.0531	0.00690	.033	140.*	26-136	L501919-04	WG521798
Indeno(1,2,3-cd)pyrene	mg/kg	0.0488	0.0160	.033	99.3	16-135	L501919-04	WG521798
Naphthalene	mg/kg	0.0525	0.00720	.033	137.*	22-121	L501919-04	WG521798
Phenanthrene	mg/kg	0.123	0.0350	.033	267.*	27-133	L501919-04	WG521798
Pyrene	mg/kg	0.255	0.0740	.033	549.*	22-133	L501919-04	WG521798
2-Fluorobiphenyl					92.67	33-114		WG521798
Nitrobenzene-d5					167.4*	21-120		WG521798
p-Terphenyl-d14					108.2	18-142		WG521798

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.0458	0.0486	76.6	32-137	5.93	39	L501461-03	WG521733
Ethylbenzene	mg/kg	0.0450	0.0482	78.4	10-150	6.91	44	L501461-03	WG521733
Toluene	mg/kg	0.0458	0.0494	63.7	20-142	7.41	42	L501461-03	WG521733
Total Xylene	mg/kg	0.138	0.149	83.2	16-141	7.57	46	L501461-03	WG521733
a,a,a-Trifluorotoluene(PID)				97.85	54-144				WG521733
TPH (GC/FID) Low Fraction	mg/kg	4.06	4.94	59.4	55-109	19.4	20	L501461-03	WG521733
a,a,a-Trifluorotoluene(FID)				95.06	59-128				WG521733
TPH (GC/FID) High Fraction	ppm	48.7	50.9	81.1	50-150	4.50	25	L501919-01	WG521785
o-Terphenyl				73.10	50-150				WG521785
Mercury	mg/kg	0.231	0.214	79.4	70-130	7.64	20	L501937-05	WG521859
Mercury	mg/kg	0.00452	0.214	0*	70-130	192.*	20	L501937-05	WG521859
Arsenic	mg/kg	55.9	58.2	103.	75-125	4.03	20	L501824-03	WG521820
Barium	mg/kg	58.5	60.1	91.4	75-125	2.70	20	L501824-03	WG521820
Cadmium	mg/kg	49.8	49.2	98.9	75-125	1.21	20	L501824-03	WG521820
Chromium	mg/kg	54.2	54.2	102.	75-125	0	20	L501824-03	WG521820
Copper	mg/kg	61.7	63.9	102.	75-125	3.50	20	L501824-03	WG521820
Lead	mg/kg	56.5	57.1	103.	75-125	1.06	20	L501824-03	WG521820
Nickel	mg/kg	53.9	55.1	97.5	75-125	2.20	20	L501824-03	WG521820
Selenium	mg/kg	51.5	50.9	103.	75-125	1.17	20	L501824-03	WG521820
Silver	mg/kg	49.6	49.4	99.2	75-125	0.404	20	L501824-03	WG521820
Zinc	mg/kg	82.5	95.5	100.	75-125	14.6	20	L501824-03	WG521820

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	12.4	7.24	38.0*	50-150	52.5*	20	L501544-05	WG521709
1-Methylnaphthalene	mg/kg	0.0387	0.0393	117.	19-131	1.40	30	L501919-04	WG521798
2-Chloronaphthalene	mg/kg	0.0392	0.0356	119.*	38-117	9.56	26	L501919-04	WG521798
2-Methylnaphthalene	mg/kg	0.0510	0.0525	154.*	18-125	2.94	29	L501919-04	WG521798
Acenaphthene	mg/kg	0.0396	0.0393	120.	31-120	0.800	30	L501919-04	WG521798
Acenaphthylene	mg/kg	0.0525	0.0457	159.*	34-116	13.9	29	L501919-04	WG521798
Anthracene	mg/kg	0.0841	0.105	185.*	32-131	22.1	26	L501919-04	WG521798
Benzo(a)anthracene	mg/kg	0.0980	0.143	224.*	32-131	37.3*	31	L501919-04	WG521798
Benzo(a)pyrene	mg/kg	0.0799	0.105	188.*	28-130	27.4	28	L501919-04	WG521798
Benzo(b)fluoranthene	mg/kg	0.152	0.145	331.*	37-130	5.13	41	L501919-04	WG521798
Benzo(g,h,i)perylene	mg/kg	0.0346	0.0447	56.3	10-134	25.6	26	L501919-04	WG521798
Benzo(k)fluoranthene	mg/kg	0.0832	0.167	179.*	31-129	66.8*	42	L501919-04	WG521798
Chrysene	mg/kg	0.0919	0.144	160.*	25-137	44.4*	22	L501919-04	WG521798
Dibenz(a,h)anthracene	mg/kg	0.0267	0.0300	55.6	20-134	11.4	25	L501919-04	WG521798
Fluoranthene	mg/kg	0.182	0.265	291.*	27-138	37.2*	35	L501919-04	WG521798
Fluorene	mg/kg	0.0494	0.0531	129.	26-136	7.26	30	L501919-04	WG521798
Indeno(1,2,3-cd)pyrene	mg/kg	0.0374	0.0488	64.7	16-135	26.5*	26	L501919-04	WG521798
Naphthalene	mg/kg	0.0570	0.0525	151.*	22-121	8.24	30	L501919-04	WG521798
Phenanthrene	mg/kg	0.101	0.123	200.*	27-133	19.9	36	L501919-04	WG521798
Pyrene	mg/kg	0.172	0.255	298.*	22-133	38.8*	33	L501919-04	WG521798
2-Fluorobiphenyl				105.6	33-114				WG521798
Nitrobenzene-d5				169.8*	21-120				WG521798
p-Terphenyl-d14				97.36	18-142				WG521798

Batch number /Run number / Sample number cross reference

WG521733: R1576690: L501836-01  
WG521798: R1578330: L501836-01  
WG521919: R1578689: L501836-01  
WG521908: R1578729: L501836-01  
WG521785: R1578871: L501836-01  
WG521859: R1579051: L501836-01  
WG521820: R1579771: L501836-01  
WG521890: R1580035: L501836-01  
WG521709: R1580050: L501836-01  
WG522077: R1580610: L501836-01

\* \* Calculations are performed prior to rounding of reported values.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.