

Laboratory Results Summary Table

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])														
Location	Sample Date:	Sample Matrix	Matrix Notes	500			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	23000
				TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	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	Naphthalene	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	Zinc
D19B	11/06/08	Cuttings		501			0.0041	BDL	0.0033	0.054														4.1	44	12					20					3.3		
D19B	03/25/10	Cuttings		53	BDL	53	BDL	BDL	BDL	BDL	BDL	BDL	0.0093	BDL	BDL	0.0068	BDL	0.0071	BDL	BDL	BDL	BDL	BDL	0.16	2.7	8	16	770	0.44	23	BDL	19	14	BDL	17	BDL	BDL	46
E19	03/26/08	Cuttings		1449			0.38	BDL	0.4	1.7														4.6	25	9.2	4.7		0.67	14		30	13	0.033	16	5.7	BDL	56
E19	05/05/08	Cuttings		BDL			0.032	0.027	0.005	0.021														14	48	12	2.6		0.52	7.8		9.4	3.9	0.028	7.3	BDL	BDL	22
E19	07/14/09	Cuttings		89.1			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		7.36	13.4	7.2	7.8		0.83	BDL	39.4	139	13.1	0.02	17.9	1.6	0.28	152
E19	07/14/09	Cuttings																												1								



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Tax I.D. 62-0814289

Est. 1970

Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

Report Summary

Tuesday November 18, 2008

Report Number: L373895

Samples Received: 11/08/08

Client Project:

Description: JDE LOE/AFE

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:

John D. Blackman, 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, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided  
in laboratory standard operating procedures: 060302, 060303, and 060304.



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REPORT OF ANALYSIS

November 18, 2008

Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

Date Received : November 08, 2008  
Description : JDE LOE/AFE  
Sample ID : D19BCOMPOSTED-110608  
Collected By : Dan Prokop  
Collection Date : 11/06/08 13:00

ESC Sample # : L373895-01

Site ID :

Project :

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
TCLP Extraction	-				1311	11/12/08 0903	MVE	1
Mercury	BDL	0.0010	mg/l	0.20	7470A	11/12/08 1939	CLF	1
Arsenic	BDL	0.050	mg/l	5.0	6010B	11/13/08 1828	LAT	1
Barium	0.36	0.15	mg/l	100	6010B	11/13/08 1828	LAT	1
Cadmium	BDL	0.050	mg/l	1.0	6010B	11/13/08 1828	LAT	1
Chromium	0.60	0.050	mg/l	5.0	6010B	11/13/08 1828	LAT	1
Lead	BDL	0.050	mg/l	5.0	6010B	11/13/08 1828	LAT	1
Selenium	0.064	0.050	mg/l	1.0	6010B	11/13/08 1828	LAT	1
Silver	BDL	0.050	mg/l	5.0	6010B	11/13/08 1828	LAT	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 11/18/08 15:45 Printed: 11/18/08 15:45



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## REPORT OF ANALYSIS

November 18, 2008

Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

Date Received : November 08, 2008  
Description : JDE LOE/AFE  
Sample ID : D19BCOMPOSTED-110608  
Collected By : Dan Prokop  
Collection Date : 11/06/08 13:00

ESC Sample # : L373895-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	2.8	1.0	mg/kg	9056	11/12/08	1
pH	12.		su	9045D	11/12/08	1
Sodium Adsorption Ratio	44.			Calc.	11/17/08	1
Specific Conductance	4100		umhos/cm	9050AMod	11/14/08	1
Kjeldahl Nitrogen, TKN	540	20.	mg/kg	351.2	11/13/08	1
Aluminum	8200	5.0	mg/kg	6010B	11/14/08	1
Barium	2800	0.25	mg/kg	6010B	11/14/08	1
Boron	BDL	10.	mg/kg	6010B	11/14/08	1
Calcium	45000	25.	mg/kg	6010B	11/14/08	1
Copper	20.	1.0	mg/kg	6010B	11/14/08	1
Magnesium	11000	5.0	mg/kg	6010B	11/14/08	1
Manganese	280	0.50	mg/kg	6010B	11/14/08	1
Molybdenum	2.0	0.25	mg/kg	6010B	11/14/08	1
Potassium	2000	25.	mg/kg	6010B	11/14/08	1
Selenium	3.3	1.0	mg/kg	6010B	11/14/08	1
Sulfur	3500	50.	mg/kg	6010B	11/16/08	1
Zinc	47.	1.5	mg/kg	6010B	11/14/08	1
Benzene	0.0041	0.0025	mg/kg	8021/8015	11/11/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/11/08	5
Ethylbenzene	0.0033	0.0025	mg/kg	8021/8015	11/11/08	5
Total Xylene	0.054	0.0075	mg/kg	8021/8015	11/11/08	5
TPH (GC/FID) Low Fraction	1.0	0.50	mg/kg	GRO	11/11/08	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	88.6		% Rec.	8021/8015	11/11/08	5
a,a,a-Trifluorotoluene(PID)	91.8		% Rec.	8021/8015	11/11/08	5
TPH (GC/FID) High Fraction	500	20.	mg/kg	3546/DRO	11/17/08	5
Surrogate recovery(%)						
o-Terphenyl	121.		% Rec.	3546/DRO	11/17/08	5

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: 11/18/08 15:45 Printed: 11/18/08 15:45  
L373895-02 (PH) - 11.9@19.1c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L373895-01	WG393275	SAMP	TCLP Extraction	R532657	W2
L373895-02	WG393180	SAMP	Aluminum	R535327	B
	WG392790	SAMP	Kjeldahl Nitrogen, TKN	R533571	J6

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
W2	(ESC) - Insufficient sample amount to perform method as required. Sample amount approved per client instruction.

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  
11/18/08 at 15:45:25

TSR Signing Reports: 151  
R5 - Desired TAT

AFE - 4021929; JDE - 8715.692. Put AFE or JDE after sample ids. 10/4/07 JB.

Sample: L373895-01 Account: ENCRCO Received: 11/08/08 09:00 Due Date: 11/14/08 00:00 RPT Date: 11/18/08 15:45

Sample: L373895-02 Account: ENCRCO Received: 11/08/08 09:00 Due Date: 11/14/08 00:00 RPT Date: 11/18/08 15:45  
Rotate for BAICP, BICP, CUICP, MOICP, SEICP, ZNICP



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Est. 1970

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

## Report Summary

Monday April 05, 2010

Report Number: L451294

Samples Received: 03/26/10

Client Project:

Description: 910-1 List

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:

Jarred 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

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  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

April 05, 2010

Date Received : March 26, 2010  
Description : 910-1 List  
Sample ID : D19B-CUTTINGS-032510  
Collected By : Aaron Stacy  
Collection Date : 03/25/10 11:00

ESC Sample # : L451294-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	03/30/10	5
Chromium, Trivalent	23.	0.50	mg/kg	Calc.	04/02/10	1
ORP	51.		mV	2580	03/29/10	1
pH	8.0		su	9045D	03/30/10	1
Sodium Adsorption Ratio	2.7			Calc.	03/31/10	1
Specific Conductance	160		umhos/cm	9050AMod	03/30/10	1
Mercury	BDL	0.020	mg/kg	7471	03/30/10	1
Arsenic	16.	1.0	mg/kg	6010B	04/02/10	1
Barium	770	0.25	mg/kg	6010B	04/02/10	1
Cadmium	0.44	0.25	mg/kg	6010B	04/02/10	1
Chromium	23.	0.50	mg/kg	6010B	04/02/10	1
Copper	19.	1.0	mg/kg	6010B	04/02/10	1
Lead	14.	0.25	mg/kg	6010B	04/02/10	1
Nickel	17.	1.0	mg/kg	6010B	04/02/10	1
Selenium	BDL	5.0	mg/kg	6010B	04/04/10	5
Silver	BDL	0.50	mg/kg	6010B	04/02/10	1
Zinc	46.	1.5	mg/kg	6010B	04/02/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	03/31/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/31/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/31/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/31/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/31/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.0		% Rec.	8021/8015	03/31/10	5
a,a,a-Trifluorotoluene(PID)	97.5		% Rec.	8021/8015	03/31/10	5
TPH (GC/FID) High Fraction	53.	4.0	mg/kg	3546/DRO	03/27/10	1
Surrogate recovery(%)						
o-Terphenyl	76.4		% Rec.	3546/DRO	03/27/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L451294-03 (PH) - 8.0@19.3c  
L451294-03 (CR6) - diluted due to sample color



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# REPORT OF ANALYSIS

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

April 05, 2010

Date Received : March 26, 2010  
Description : 910-1 List  
Sample ID : D19B-CUTTINGS-032510  
Collected By : Aaron Stacy  
Collection Date : 03/25/10 11:00

ESC Sample # : L451294-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.0093	0.0060	mg/kg	8270C-SIM	04/05/10	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Chrysene	0.0068	0.0060	mg/kg	8270C-SIM	04/05/10	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Fluoranthene	0.0071	0.0060	mg/kg	8270C-SIM	04/05/10	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Naphthalene	0.0073	0.0060	mg/kg	8270C-SIM	04/05/10	1
Phenanthrene	0.0090	0.0060	mg/kg	8270C-SIM	04/05/10	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
2-Methylnaphthalene	0.018	0.0060	mg/kg	8270C-SIM	04/05/10	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	04/05/10	1
Surrogate Recovery						
Nitrobenzene-d5	83.3		% Rec.	8270C-SIM	04/05/10	1
2-Fluorobiphenyl	79.6		% Rec.	8270C-SIM	04/05/10	1
p-Terphenyl-d14	61.1		% Rec.	8270C-SIM	04/05/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 04/05/10 16:00 Printed: 04/05/10 16:40

L451294-03 (PH) - 8.0@19.3c

L451294-03 (CR6) - diluted due to sample color

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L451294-03	WG470024	SAMP	Selenium	R1169070	O
	WG470254	SAMP	Chromium, Hexavalent	R1163016	O

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
O	(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

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- 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.



**YOUR LAB OF CHOICE**

EnCana Oil & Gas Inc. - CO  
Chris Hines  
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report  
Level II

L451294

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Tax I.D. 62-0814289

Est. 1970

April 05, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG469758	03/27/10 05:37
o-Terphenyl		% Rec.	82.99	50-150	WG469758	03/27/10 05:37
pH	4.30	su			WG470253	03/30/10 13:10
Mercury	< .02	mg/kg			WG469817	03/30/10 12:00
Mercury	< .02	mg/kg			WG469920	03/30/10 10:38
1-Methylnaphthalene	< .006	mg/kg			WG469873	03/30/10 11:44
2-Chloronaphthalene	< .006	mg/kg			WG469873	03/30/10 11:44
2-Methylnaphthalene	< .006	mg/kg			WG469873	03/30/10 11:44
Acenaphthene	< .006	mg/kg			WG469873	03/30/10 11:44
Acenaphthylene	< .006	mg/kg			WG469873	03/30/10 11:44
Anthracene	< .006	mg/kg			WG469873	03/30/10 11:44
Benzo(a)anthracene	< .006	mg/kg			WG469873	03/30/10 11:44
Benzo(a)pyrene	< .006	mg/kg			WG469873	03/30/10 11:44
Benzo(b)fluoranthene	< .006	mg/kg			WG469873	03/30/10 11:44
Benzo(g,h,i)perylene	< .006	mg/kg			WG469873	03/30/10 11:44
Benzo(k)fluoranthene	< .006	mg/kg			WG469873	03/30/10 11:44
Chrysene	< .006	mg/kg			WG469873	03/30/10 11:44
Dibenz(a,h)anthracene	< .006	mg/kg			WG469873	03/30/10 11:44
Fluoranthene	< .006	mg/kg			WG469873	03/30/10 11:44
Fluorene	< .006	mg/kg			WG469873	03/30/10 11:44
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG469873	03/30/10 11:44
Naphthalene	< .006	mg/kg			WG469873	03/30/10 11:44
Phenanthrene	< .006	mg/kg			WG469873	03/30/10 11:44
Pyrene	< .006	mg/kg			WG469873	03/30/10 11:44
2-Fluorobiphenyl		% Rec.	78.99	21-120	WG469873	03/30/10 11:44
Nitrobenzene-d5		% Rec.	86.61	33-114	WG469873	03/30/10 11:44
p-Terphenyl-d14		% Rec.	108.8	18-142	WG469873	03/30/10 11:44
Specific Conductance	1.20	umhos/cm			WG470211	03/30/10 15:10
Chromium, Hexavalent	< 2	mg/kg			WG470254	03/30/10 16:29
Benzene	< .0005	mg/kg			WG470305	03/30/10 16:43
Ethylbenzene	< .0005	mg/kg			WG470305	03/30/10 16:43
Toluene	< .005	mg/kg			WG470305	03/30/10 16:43
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG470305	03/30/10 16:43
Total Xylene	< .0015	mg/kg			WG470305	03/30/10 16:43
a,a,a-Trifluorotoluene(FID)		% Rec.	99.91	59-128	WG470305	03/30/10 16:43
a,a,a-Trifluorotoluene(PID)		% Rec.	99.10	54-144	WG470305	03/30/10 16:43
Arsenic	< 1	mg/kg			WG470024	04/04/10 15:59
Barium	< .25	mg/kg			WG470024	04/04/10 15:59
Cadmium	< .25	mg/kg			WG470024	04/04/10 15:59
Chromium	< .5	mg/kg			WG470024	04/04/10 15:59
Copper	< 1	mg/kg			WG470024	04/04/10 15:59
Lead	< .25	mg/kg			WG470024	04/04/10 15:59
Nickel	< 1	mg/kg			WG470024	04/04/10 15:59

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

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Quality Assurance Report  
Level II

L451294

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Est. 1970

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Selenium	< 1	mg/kg			WG470024	04/04/10 15:59
Silver	< .5	mg/kg			WG470024	04/04/10 15:59
Zinc	< 1.5	mg/kg			WG470024	04/04/10 15:59

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
ORP	mV	42.0	44.0	4.65	20	L451294-01	WG470018
pH	su	8.00	8.00	0	1	L451294-03	WG470253
Mercury	mg/kg	0.0560	0.0560	0.897	20	L451198-01	WG469817
Mercury	mg/kg	0.0300	0.0300	0.664	20	L451361-08	WG469920
Specific Conductance	umhos/cm	42.0	36.0	14.2	20	L451109-03	WG470211
Chromium, Hexavalent	mg/kg	0	0	0	20	L451294-01	WG470254
Arsenic	mg/kg	0	0.810	NA	20	L451304-12	WG470024
Barium	mg/kg	16.0	16.0	2.53	20	L451304-12	WG470024
Cadmium	mg/kg	0	0.0610	NA	20	L451304-12	WG470024
Chromium	mg/kg	2.70	2.70	0	20	L451304-12	WG470024
Copper	mg/kg	4.20	3.93	5.93	20	L451304-12	WG470024
Lead	mg/kg	1.50	1.50	0.664	20	L451304-12	WG470024
Nickel	mg/kg	4.60	4.70	2.59	20	L451304-12	WG470024
Selenium	mg/kg	0	0	0	20	L451304-12	WG470024
Silver	mg/kg	0	0	0	20	L451304-12	WG470024
Zinc	mg/kg	15.0	14.6	2.70	20	L451304-12	WG470024

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	38.5	64.1	50-150	WG469758
o-Terphenyl				75.02	50-150	WG469758
ORP	mV	229	220.	96.1	95.6-104.37	WG470018
pH	su	6.46	6.40	99.1	97.9-100.8	WG470253
Mercury	mg/kg	8.77	6.59	75.1	71.6-127.7	WG469817
Mercury	mg/kg	8.77	10.0	114.	71.6-127.7	WG469920
1-Methylnaphthalene	mg/kg	.033	0.0330	100.	41-110	WG469873
2-Chloronaphthalene	mg/kg	.033	0.0325	98.6	43-109	WG469873
2-Methylnaphthalene	mg/kg	.033	0.0320	97.1	38-104	WG469873
Acenaphthene	mg/kg	.033	0.0283	85.7	48-103	WG469873

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Acenaphthylene	mg/kg	.033	0.0281	85.1	43-106	WG469873
Anthracene	mg/kg	.033	0.0284	85.9	51-110	WG469873
Benzo(a)anthracene	mg/kg	.033	0.0307	93.0	38-126	WG469873
Benzo(a)pyrene	mg/kg	.033	0.0305	92.5	47-118	WG469873
Benzo(b)fluoranthene	mg/kg	.033	0.0297	89.9	47-118	WG469873
Benzo(g,h,i)perylene	mg/kg	.033	0.0296	89.6	40-125	WG469873
Benzo(k)fluoranthene	mg/kg	.033	0.0320	96.9	45-121	WG469873
Chrysene	mg/kg	.033	0.0291	88.3	35-135	WG469873
Dibenz(a,h)anthracene	mg/kg	.033	0.0295	89.4	41-124	WG469873
Fluoranthene	mg/kg	.033	0.0297	90.1	50-114	WG469873
Fluorene	mg/kg	.033	0.0292	88.6	49-109	WG469873
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0290	87.8	40-126	WG469873
Naphthalene	mg/kg	.033	0.0255	77.2	36-100	WG469873
Phenanthrene	mg/kg	.033	0.0280	85.0	46-108	WG469873
Pyrene	mg/kg	.033	0.0307	92.9	30-136	WG469873
2-Fluorobiphenyl				85.06	21-120	WG469873
Nitrobenzene-d5				82.48	33-114	WG469873
p-Terphenyl-d14				113.2	18-142	WG469873
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG470211
Chromium,Hexavalent	mg/kg	100	92.8	92.8	50-143	WG470254
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.10	111.	67-135	WG470305
a,a,a-Trifluorotoluene(PID)				99.55	54-144	WG470305
Benzene	mg/kg	.05	0.0479	95.8	76-113	WG470305
Ethylbenzene	mg/kg	.05	0.0543	109.	78-115	WG470305
Toluene	mg/kg	.05	0.0523	105.	76-114	WG470305
Total Xylene	mg/kg	.15	0.161	107.	81-118	WG470305
a,a,a-Trifluorotoluene(FID)				99.89	59-128	WG470305
Arsenic	mg/kg	192	178.	92.7	78.6-120.8	WG470024
Barium	mg/kg	420	394.	93.8	78.8-121.4	WG470024
Cadmium	mg/kg	70.1	61.0	87.0	78.5-121.5	WG470024
Chromium	mg/kg	168	153.	91.1	80.4-120.2	WG470024
Copper	mg/kg	122	116.	95.1	81.6-119.7	WG470024
Lead	mg/kg	113	111.	98.2	77.3-122.1	WG470024
Nickel	mg/kg	74.1	78.7	106.	78.8-121.2	WG470024
Selenium	mg/kg	176	158.	89.8	75.6-125.0	WG470024
Silver	mg/kg	115	106.	92.2	66-133.9	WG470024
Zinc	mg/kg	437	387.	88.6	78.5-121.7	WG470024

Analyte	Units	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec			
TPH (GC/FID) High Fraction	ppm	43.0	38.5	72.0	50-150	11.0	WG469758
o-Terphenyl				80.59	50-150		WG469758
ORP	mV	220.	220.	96.0	95.6-104.37	0	WG470018
pH	su	6.40	6.40	99.0	97.9-100.8	0	WG470253

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0326	0.0330	99.0		41-110	1.17	24	WG469873
2-Chloronaphthalene	mg/kg	0.0340	0.0325	103.		43-109	4.50	21	WG469873
2-Methylnaphthalene	mg/kg	0.0322	0.0320	98.0		38-104	0.444	24	WG469873
Acenaphthene	mg/kg	0.0293	0.0283	89.0		48-103	3.64	20	WG469873
Acenaphthylene	mg/kg	0.0300	0.0281	91.0		43-106	6.44	20	WG469873
Anthracene	mg/kg	0.0306	0.0284	93.0		51-110	7.56	22	WG469873
Benzo(a)anthracene	mg/kg	0.0316	0.0307	96.0		38-126	2.79	20	WG469873
Benzo(a)pyrene	mg/kg	0.0324	0.0305	98.0		47-118	6.12	20	WG469873
Benzo(b)fluoranthene	mg/kg	0.0321	0.0297	97.0		47-118	7.96	29	WG469873
Benzo(g,h,i)perylene	mg/kg	0.0322	0.0296	98.0		40-125	8.54	20	WG469873
Benzo(k)fluoranthene	mg/kg	0.0341	0.0320	103.		45-121	6.37	31	WG469873
Chrysene	mg/kg	0.0328	0.0291	99.0		35-135	11.8	20	WG469873
Dibenz(a,h)anthracene	mg/kg	0.0315	0.0295	95.0		41-124	6.43	20	WG469873
Fluoranthene	mg/kg	0.0324	0.0297	98.0		50-114	8.44	20	WG469873
Fluorene	mg/kg	0.0326	0.0292	99.0		49-109	10.7	19	WG469873
Indeno(1,2,3-cd)pyrene	mg/kg	0.0308	0.0290	93.0		40-126	6.10	20	WG469873
Naphthalene	mg/kg	0.0268	0.0255	81.0		36-100	5.12	24	WG469873
Phenanthrene	mg/kg	0.0302	0.0280	91.0		46-108	7.38	21	WG469873
Pyrene	mg/kg	0.0336	0.0307	102.		30-136	9.03	20	WG469873
2-Fluorobiphenyl				89.23		21-120			WG469873
Nitrobenzene-d5				86.17		33-114			WG469873
p-Terphenyl-d14				122.1		18-142			WG469873
Specific Conductance	umhos/	410.	410.	101.		85-115	0	20	WG470211
Chromium,Hexavalent	mg/kg	93.6	92.8	94.0		50-143	0.858	20	WG470254
TPH (GC/FID) Low Fraction	mg/kg	6.18	6.10	112.		67-135	1.31	20	WG470305
a,a,a-Trifluorotoluene(PID)				102.1		54-144			WG470305
Benzene	mg/kg	0.0479	0.0479	96.0		76-113	0.100	20	WG470305
Ethylbenzene	mg/kg	0.0549	0.0543	110.		78-115	0.940	20	WG470305
Toluene	mg/kg	0.0520	0.0523	104.		76-114	0.521	20	WG470305
Total Xylene	mg/kg	0.161	0.161	107.		81-118	0.00745	20	WG470305
a,a,a-Trifluorotoluene(FID)				99.70		59-128			WG470305

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
TPH (GC/FID) High Fraction	ppm	56.0	16.0	60	66.6	50-150	L451294-01	WG469758
o-Terphenyl					77.71	50-150		WG469758
Mercury	mg/kg	0.334	0.0560	.25	111.	70-130	L451198-01	WG469817
Mercury	mg/kg	0.322	0.0300	.25	117.	70-130	L451361-08	WG469920
Chromium,Hexavalent	mg/kg	63.8	0	20	63.8	50-150	L451294-02	WG470254
Benzene	mg/kg	0.0410	0.00160	.05	78.8	32-137	L451253-01	WG470305
Ethylbenzene	mg/kg	0.0457	0.00240	.05	86.6	10-150	L451253-01	WG470305
Toluene	mg/kg	0.0442	0.0170	.05	54.4	20-142	L451253-01	WG470305
Total Xylene	mg/kg	0.138	0.0120	.15	83.8	16-141	L451253-01	WG470305
a,a,a-Trifluorotoluene(PID)					94.55	54-144		WG470305

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	4.98	0	5.5	90.5	55-109	L451253-01	WG470305
a,a,a-Trifluorotoluene(FID)					94.50	59-128		WG470305
1-Methylnaphthalene	mg/kg	0.0300	0	.033	91.0	19-131	L451284-06	WG469873
2-Chloronaphthalene	mg/kg	0.0292	0	.033	88.5	38-117	L451284-06	WG469873
2-Methylnaphthalene	mg/kg	0.0281	0	.033	85.3	18-125	L451284-06	WG469873
Acenaphthene	mg/kg	0.0308	0	.033	93.3	31-120	L451284-06	WG469873
Acenaphthylene	mg/kg	0.0306	0	.033	92.8	34-116	L451284-06	WG469873
Anthracene	mg/kg	0.0334	0	.033	101.	32-131	L451284-06	WG469873
Benzo(a)anthracene	mg/kg	0.0336	0	.033	102.	32-131	L451284-06	WG469873
Benzo(a)pyrene	mg/kg	0.0324	0	.033	98.0	28-130	L451284-06	WG469873
Benzo(b)fluoranthene	mg/kg	0.0308	0	.033	93.5	37-130	L451284-06	WG469873
Benzo(g,h,i)perylene	mg/kg	0.0267	0	.033	80.9	10-134	L451284-06	WG469873
Benzo(k)fluoranthene	mg/kg	0.0341	0	.033	103.	31-129	L451284-06	WG469873
Chrysene	mg/kg	0.0307	0	.033	93.1	25-137	L451284-06	WG469873
Dibenz(a,h)anthracene	mg/kg	0.0272	0	.033	82.3	20-134	L451284-06	WG469873
Fluoranthene	mg/kg	0.0348	0	.033	106.	27-138	L451284-06	WG469873
Fluorene	mg/kg	0.0318	0	.033	96.2	26-136	L451284-06	WG469873
Indeno(1,2,3-cd)pyrene	mg/kg	0.0272	0	.033	82.5	16-135	L451284-06	WG469873
Naphthalene	mg/kg	0.0283	0	.033	85.8	22-121	L451284-06	WG469873
Phenanthrene	mg/kg	0.0351	0.00760	.033	83.3	27-133	L451284-06	WG469873
Pyrene	mg/kg	0.0336	0	.033	102.	22-133	L451284-06	WG469873
2-Fluorobiphenyl					88.18	21-120		WG469873
Nitrobenzene-d5					85.25	33-114		WG469873
p-Terphenyl-d14					99.13	18-142		WG469873
Arsenic	mg/kg	45.2	0.810	50	88.8	75-125	L451304-12	WG470024
Barium	mg/kg	59.9	16.0	50	87.8	75-125	L451304-12	WG470024
Cadmium	mg/kg	43.7	0.0610	50	87.3	75-125	L451304-12	WG470024
Chromium	mg/kg	47.6	2.70	50	89.8	75-125	L451304-12	WG470024
Copper	mg/kg	50.7	3.93	50	93.5	75-125	L451304-12	WG470024
Lead	mg/kg	46.5	1.50	50	90.0	75-125	L451304-12	WG470024
Nickel	mg/kg	50.6	4.70	50	91.8	75-125	L451304-12	WG470024
Selenium	mg/kg	42.4	0	50	84.8	75-125	L451304-12	WG470024
Silver	mg/kg	45.6	0	50	91.2	75-125	L451304-12	WG470024
Zinc	mg/kg	57.2	14.6	50	85.2	75-125	L451304-12	WG470024

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	83.6	56.0	113.	50-150	39.5*	25	L451294-01	WG469758
o-Terphenyl				88.13	50-150				WG469758
Mercury	mg/kg	0.282	0.334	90.4	70-130	16.9	20	L451198-01	WG469817
Mercury	mg/kg	0.345	0.322	126.	70-130	6.90	20	L451361-08	WG469920
Chromium,Hexavalent	mg/kg	66.0	63.8	66.0	50-150	3.39	20	L451294-02	WG470254
Benzene	mg/kg	0.0446	0.0410	86.0	32-137	8.37	39	L451253-01	WG470305
Ethylbenzene	mg/kg	0.0486	0.0457	92.5	10-150	6.24	44	L451253-01	WG470305
Toluene	mg/kg	0.0471	0.0442	60.2	20-142	6.36	42	L451253-01	WG470305
Total Xylene	mg/kg	0.146	0.138	89.5	16-141	6.08	46	L451253-01	WG470305

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
a,a,a-Trifluorotoluene(PID)				94.51	54-144					
TPH (GC/FID) Low Fraction	mg/kg	5.12	4.98	93.0	55-109	2.76	20	L451253-01		WG470305
a,a,a-Trifluorotoluene(FID)				92.61	59-128					WG470305
1-Methylnaphthalene	mg/kg	0.0300	0.0300	90.9	19-131	0.168	30	L451284-06		WG469873
2-Chloronaphthalene	mg/kg	0.0291	0.0292	88.3	38-117	0.281	26	L451284-06		WG469873
2-Methylnaphthalene	mg/kg	0.0291	0.0281	88.1	18-125	3.22	29	L451284-06		WG469873
Acenaphthene	mg/kg	0.0302	0.0308	91.7	31-120	1.79	30	L451284-06		WG469873
Acenaphthylene	mg/kg	0.0307	0.0306	93.2	34-116	0.421	29	L451284-06		WG469873
Anthracene	mg/kg	0.0326	0.0334	98.8	32-131	2.47	26	L451284-06		WG469873
Benzo(a)anthracene	mg/kg	0.0326	0.0336	98.9	32-131	2.80	31	L451284-06		WG469873
Benzo(a)pyrene	mg/kg	0.0317	0.0324	96.0	28-130	2.08	28	L451284-06		WG469873
Benzo(b)fluoranthene	mg/kg	0.0298	0.0308	90.3	37-130	3.44	41	L451284-06		WG469873
Benzo(g,h,i)perylene	mg/kg	0.0264	0.0267	80.0	10-134	1.02	26	L451284-06		WG469873
Benzo(k)fluoranthene	mg/kg	0.0342	0.0341	104.	31-129	0.326	42	L451284-06		WG469873
Chrysene	mg/kg	0.0311	0.0307	94.4	25-137	1.39	22	L451284-06		WG469873
Dibenz(a,h)anthracene	mg/kg	0.0274	0.0272	82.9	20-134	0.686	25	L451284-06		WG469873
Fluoranthene	mg/kg	0.0336	0.0348	102.	27-138	3.68	35	L451284-06		WG469873
Fluorene	mg/kg	0.0322	0.0318	97.5	26-136	1.32	30	L451284-06		WG469873
Indeno(1,2,3-cd)pyrene	mg/kg	0.0270	0.0272	81.7	16-135	0.946	26	L451284-06		WG469873
Naphthalene	mg/kg	0.0284	0.0283	85.9	22-121	0.134	30	L451284-06		WG469873
Phenanthrene	mg/kg	0.0352	0.0351	83.8	27-133	0.454	36	L451284-06		WG469873
Pyrene	mg/kg	0.0348	0.0336	106.	22-133	3.76	33	L451284-06		WG469873
2-Fluorobiphenyl				90.15	21-120					WG469873
Nitrobenzene-d5				86.40	33-114					WG469873
p-Terphenyl-d14				98.71	18-142					WG469873
Arsenic	mg/kg	43.5	45.2	85.4	75-125	3.83	20	L451304-12		WG470024
Barium	mg/kg	60.2	59.9	88.4	75-125	0.500	20	L451304-12		WG470024
Cadmium	mg/kg	42.7	43.7	85.3	75-125	2.31	20	L451304-12		WG470024
Chromium	mg/kg	45.8	47.6	86.2	75-125	3.85	20	L451304-12		WG470024
Copper	mg/kg	50.4	50.7	92.9	75-125	0.593	20	L451304-12		WG470024
Lead	mg/kg	45.2	46.5	87.4	75-125	2.84	20	L451304-12		WG470024
Nickel	mg/kg	49.4	50.6	89.4	75-125	2.40	20	L451304-12		WG470024
Selenium	mg/kg	40.4	42.4	80.8	75-125	4.83	20	L451304-12		WG470024
Silver	mg/kg	44.2	45.6	88.4	75-125	3.12	20	L451304-12		WG470024
Zinc	mg/kg	55.8	57.2	82.4	75-125	2.48	20	L451304-12		WG470024

Batch number /Run number / Sample number cross reference

WG469758: R1160430: L451294-01 02 03  
WG470018: R1160439: L451294-01 02 03  
WG470253: R1162568: L451294-01 02 03  
WG469817: R1162689: L451294-01  
WG469920: R1162690: L451294-02 03  
WG469873: R1162968: L451294-01 02 03  
WG470211: R1163011: L451294-01 02 03  
WG470254: R1163016: L451294-01 02 03  
WG469986: R1163513: L451294-01 02 03  
WG470305: R1165508: L451294-01 02 03  
WG470024: R1169070: L451294-01 02 03

\* \* Calculations are performed prior to rounding of reported values .  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



**YOUR LAB OF CHOICE**

EnCana Oil & Gas Inc. - CO  
Chris Hines  
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report  
Level II

L451294

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

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Est. 1970

April 05, 2010

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.



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Brett Middleton  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

Report Summary

Tuesday April 01, 2008

Report Number: L338076

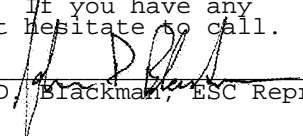
Samples Received: 03/27/08

Client Project:

Description: NPR Cuttings Samples JDE 8235.348

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:

  
John D. Blackman, ESC Representative

*Laboratory Certification Numbers*

A2LA - 1461-01, AIHA - 09227, 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, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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3 Samples Reported: 04/01/08 15:40 Printed: 04/01/08 16:00

Page 1 of 6



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## REPORT OF ANALYSIS

Brett Middleton  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

April 01, 2008

Date Received : March 27, 2008  
Description : NPR Cuttings Samples JDE 8235.348  
Sample ID : E19 MIX 032608  
Collected By : Dan Prokop  
Collection Date : 03/26/08 14:20

ESC Sample # : L338076-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	7.8	1.0	mg/kg	9056	03/28/08	1
pH	12.		su	9045D	03/28/08	1
Sodium Adsorption Ratio	13.			Calc.	03/31/08	1
Specific Conductance	38000		umhos/cm	9050AMod	03/30/08	1
Kjeldahl Nitrogen, TKN	400	20.	mg/kg	351.2	03/28/08	1
Mercury	0.022	0.020	mg/kg	7471	03/30/08	1
Aluminum	9000	5.0	mg/kg	6010B	03/28/08	1
Arsenic	6.9	1.0	mg/kg	6010B	03/28/08	1
Barium	4400	0.25	mg/kg	6010B	03/28/08	1
Boron	BDL	50.	mg/kg	6010B	03/28/08	5
Cadmium	1.8	0.25	mg/kg	6010B	03/28/08	1
Calcium	69000	120	mg/kg	6010B	03/28/08	5
Chromium	17.	0.50	mg/kg	6010B	03/28/08	1
Copper	19.	1.0	mg/kg	6010B	03/28/08	1
Iron	12000	5.0	mg/kg	6010B	03/28/08	1
Lead	7.5	1.2	mg/kg	6010B	03/28/08	5
Magnesium	8200	5.0	mg/kg	6010B	03/28/08	1
Manganese	280	0.50	mg/kg	6010B	03/28/08	1
Molybdenum	2.7	0.25	mg/kg	6010B	03/28/08	1
Nickel	16.	1.0	mg/kg	6010B	03/28/08	1
Potassium	2300	25.	mg/kg	6010B	03/28/08	1
Selenium	5.2	1.0	mg/kg	6010B	03/28/08	1
Silver	BDL	0.50	mg/kg	6010B	03/28/08	1
Sulfur	4700	50.	mg/kg	6010B	03/28/08	1
Zinc	48.	1.5	mg/kg	6010B	03/28/08	1
Benzene	0.015	0.0025	mg/kg	8021/8015	03/29/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/29/08	5
Ethylbenzene	0.0025	0.0025	mg/kg	8021/8015	03/29/08	5
Total Xylene	0.014	0.0075	mg/kg	8021/8015	03/29/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/29/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.4		% Rec.	8021/8015	03/29/08	5
a,a,a-Trifluorotoluene(PID)	98.8		% Rec.	8021/8015	03/29/08	5
TPH (GC/FID) High Fraction	63.	4.0	mg/kg	3546/DRO	03/30/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	59.3		% Rec.	3546/DRO	03/30/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Est. 1970

## REPORT OF ANALYSIS

Brett Middleton  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

April 01, 2008

Date Received : March 27, 2008  
Description : NPR Cuttings Samples JDE 8235.348  
Sample ID : E19 CUT 032608  
Collected By : Dan Prokop  
Collection Date : 03/26/08 14:45

ESC Sample # : L338076-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	5.0	1.0	mg/kg	9056	03/28/08	1
pH	9.2		su	9045D	03/28/08	1
Sodium Adsorption Ratio	25.			Calc.	03/31/08	1
Specific Conductance	4600		umhos/cm	9050AMod	03/30/08	1
Kjeldahl Nitrogen, TKN	140	20.	mg/kg	351.2	03/31/08	1
Mercury	0.033	0.020	mg/kg	7471	03/30/08	1
Aluminum	6000	5.0	mg/kg	6010B	03/28/08	1
Arsenic	4.7	1.0	mg/kg	6010B	03/28/08	1
Barium	5800	0.25	mg/kg	6010B	03/28/08	1
Boron	BDL	10.	mg/kg	6010B	03/28/08	1
Cadmium	0.67	0.25	mg/kg	6010B	03/28/08	1
Calcium	7100	25.	mg/kg	6010B	03/28/08	1
Chromium	14.	0.50	mg/kg	6010B	03/28/08	1
Copper	30.	1.0	mg/kg	6010B	03/28/08	1
Iron	11000	5.0	mg/kg	6010B	03/28/08	1
Lead	13.	0.25	mg/kg	6010B	03/28/08	1
Magnesium	3700	5.0	mg/kg	6010B	03/28/08	1
Manganese	150	0.50	mg/kg	6010B	03/28/08	1
Molybdenum	2.6	0.25	mg/kg	6010B	03/28/08	1
Nickel	16.	1.0	mg/kg	6010B	03/28/08	1
Potassium	1500	25.	mg/kg	6010B	03/28/08	1
Selenium	5.7	1.0	mg/kg	6010B	03/28/08	1
Silver	BDL	0.50	mg/kg	6010B	03/28/08	1
Sulfur	3600	50.	mg/kg	6010B	03/28/08	1
Zinc	56.	1.5	mg/kg	6010B	03/28/08	1
Benzene	0.38	0.12	mg/kg	8021/8015	03/29/08	250
Toluene	BDL	1.2	mg/kg	8021/8015	03/29/08	250
Ethylbenzene	0.40	0.12	mg/kg	8021/8015	03/29/08	250
Total Xylene	1.7	0.38	mg/kg	8021/8015	03/29/08	250
TPH (GC/FID) Low Fraction	49.	25.	mg/kg	GRO	03/29/08	250
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	03/29/08	250
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	03/29/08	250
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	04/01/08	20
Surrogate Recovery (50-150)						
o-Terphenyl	0.00		% Rec.	3546/DRO	04/01/08	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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## REPORT OF ANALYSIS

Brett Middleton  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

April 01, 2008

Date Received : March 27, 2008  
Description : NPR Cuttings Samples JDE 8235.348  
Sample ID : NAT HILL 032608  
Collected By : Dan Prokop  
Collection Date : 03/26/08 15:00

ESC Sample # : L338076-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphorus, Total	2.0	1.0	mg/kg	9056	03/28/08	1
pH	8.1		su	9045D	03/28/08	1
Sodium Adsorption Ratio	0.60			Calc.	03/31/08	1
Specific Conductance	640		umhos/cm	9050AMod	03/30/08	1
Kjeldahl Nitrogen, TKN	480	20.	mg/kg	351.2	03/28/08	1
Mercury	BDL	0.020	mg/kg	7471	03/30/08	1
Aluminum	7700	5.0	mg/kg	6010B	03/28/08	1
Arsenic	24.	1.0	mg/kg	6010B	03/28/08	1
Barium	330	0.25	mg/kg	6010B	03/28/08	1
Boron	BDL	50.	mg/kg	6010B	03/28/08	5
Cadmium	0.90	0.25	mg/kg	6010B	03/28/08	1
Calcium	81000	120	mg/kg	6010B	03/28/08	5
Chromium	22.	0.50	mg/kg	6010B	03/28/08	1
Copper	25.	1.0	mg/kg	6010B	03/28/08	1
Iron	16000	5.0	mg/kg	6010B	03/28/08	1
Lead	17.	1.2	mg/kg	6010B	03/28/08	5
Magnesium	23000	5.0	mg/kg	6010B	03/28/08	1
Manganese	330	0.50	mg/kg	6010B	03/28/08	1
Molybdenum	5.4	0.25	mg/kg	6010B	03/28/08	1
Nickel	20.	1.0	mg/kg	6010B	03/28/08	1
Potassium	1300	25.	mg/kg	6010B	03/28/08	1
Selenium	BDL	5.0	mg/kg	6010B	03/28/08	5
Silver	BDL	0.50	mg/kg	6010B	03/28/08	1
Sulfur	490	50.	mg/kg	6010B	03/28/08	1
Zinc	52.	7.5	mg/kg	6010B	03/28/08	5
Benzene	BDL	0.0025	mg/kg	8021/8015	03/29/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/29/08	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/29/08	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/29/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/29/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.1		% Rec.	8021/8015	03/29/08	5
a,a,a-Trifluorotoluene(PID)	97.9		% Rec.	8021/8015	03/29/08	5
TPH (GC/FID) High Fraction	26.	8.6	mg/kg	3546/DRO	03/31/08	2.15
Surrogate Recovery (50-150)						
o-Terphenyl	108.		% Rec.	3546/DRO	03/31/08	2.15

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L338076-01	Boron	O
L338076-02	o-Terphenyl	J7
L338076-03	Aluminum	V
	Arsenic	J3
	Barium	V
	Boron	O
	Calcium	VJ3
	Iron	V
	Magnesium	V
	Manganese	V
	Potassium	J6
	Selenium	O
	Sulfur	J5



Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
O	(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.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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  
04/01/08 at 16:00:28

TSR Signing Reports: 151  
R4 - Rush: Three Day

Works closely with Cordilleran. Charge Codes: AFE and JDE number needs to be in the project  
discription. JB. Methane is target of RSK175

Sample: L338076-01 Account: ENCRCO Received: 03/27/08 09:00 Due Date: 04/01/08 00:00 RPT Date: 04/01/08 15:40

Sample: L338076-02 Account: ENCRCO Received: 03/27/08 09:00 Due Date: 04/01/08 00:00 RPT Date: 04/01/08 15:40

Sample: L338076-03 Account: ENCRCO Received: 03/27/08 09:00 Due Date: 04/01/08 00:00 RPT Date: 04/01/08 15:40



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Tax I.D. 62-0814289

Est. 1970

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

Report Summary

Tuesday May 27, 2008

Report Number: L344768

Samples Received: 05/09/08

Client Project: JDE 8235.348

Description: NPR Soil Cutting Samples

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:

John D. Blackman, ESC Representative

*Laboratory Certification Numbers*

A2LA - 1461-01, AIHA - 09227, 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, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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6 Samples Reported: 05/27/08 13:43 Printed: 05/27/08 13:43

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## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 FRESH

Collected By : Dan Prokop  
Collection Date : 05/05/08 09:00

ESC Sample # : L344768-01

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	4.8	1.0	mg/kg	9056	05/10/08	1
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	48.			Calc.	05/15/08	1
Specific Conductance	14000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	310	20.	mg/kg	351.2	05/14/08	1
Mercury	0.028	0.020	mg/kg	7471	05/15/08	1
Aluminum	4800	5.0	mg/kg	6010B	05/13/08	1
Arsenic	2.6	1.0	mg/kg	6010B	05/13/08	1
Barium	5300	0.25	mg/kg	6010B	05/13/08	1
Boron	BDL	10.	mg/kg	6010B	05/13/08	1
Cadmium	0.52	0.25	mg/kg	6010B	05/13/08	1
Calcium	21000	25.	mg/kg	6010B	05/13/08	1
Chromium	7.8	0.50	mg/kg	6010B	05/13/08	1
Copper	9.4	1.0	mg/kg	6010B	05/13/08	1
Iron	6200	5.0	mg/kg	6010B	05/13/08	1
Lead	3.9	0.25	mg/kg	6010B	05/13/08	1
Magnesium	3600	5.0	mg/kg	6010B	05/13/08	1
Manganese	140	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	0.99	0.25	mg/kg	6010B	05/13/08	1
Nickel	7.3	1.0	mg/kg	6010B	05/13/08	1
Potassium	1100	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	2400	50.	mg/kg	6010B	05/17/08	1
Zinc	22.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.032	0.0025	mg/kg	8021/8015	05/13/08	5
Toluene	0.027	0.025	mg/kg	8021/8015	05/13/08	5
Ethylbenzene	0.0050	0.0025	mg/kg	8021/8015	05/13/08	5
Total Xylene	0.021	0.0075	mg/kg	8021/8015	05/13/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	94.3		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	98.0		% Rec.	8021/8015	05/13/08	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/14/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	100.		% Rec.	3546/DRO	05/14/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:43

L344768-01 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P

L344768-01 (PH) - 11.9@24.3c



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Tax I.D. 62-0814289

Est. 1970

## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 SOL

Collected By : Dan Prokop  
Collection Date : 05/05/08 09:15

ESC Sample # : L344768-02

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	2.1	1.0	mg/kg	9056	05/10/08	1
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	34.			Calc.	05/15/08	1
Specific Conductance	18000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	560	20.	mg/kg	351.2	05/14/08	1
Mercury	0.033	0.020	mg/kg	7471	05/15/08	1
Aluminum	8000	5.0	mg/kg	6010B	05/13/08	1
Arsenic	5.3	1.0	mg/kg	6010B	05/13/08	1
Barium	3100	0.25	mg/kg	6010B	05/13/08	1
Boron	10.	10.	mg/kg	6010B	05/13/08	1
Cadmium	1.5	0.25	mg/kg	6010B	05/13/08	1
Calcium	48000	25.	mg/kg	6010B	05/13/08	1
Chromium	12.	0.50	mg/kg	6010B	05/13/08	1
Copper	21.	1.0	mg/kg	6010B	05/13/08	1
Iron	11000	5.0	mg/kg	6010B	05/13/08	1
Lead	9.1	0.25	mg/kg	6010B	05/13/08	1
Magnesium	5800	5.0	mg/kg	6010B	05/13/08	1
Manganese	270	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	2.1	0.25	mg/kg	6010B	05/13/08	1
Nickel	15.	1.0	mg/kg	6010B	05/13/08	1
Potassium	2000	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	4400	50.	mg/kg	6010B	05/17/08	1
Zinc	48.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.0054	0.0025	mg/kg	8021/8015	05/14/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/14/08	5
Ethylbenzene	0.0026	0.0025	mg/kg	8021/8015	05/14/08	5
Total Xylene	0.011	0.0075	mg/kg	8021/8015	05/14/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	93.2		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	98.6		% Rec.	8021/8015	05/14/08	5
TPH (GC/FID) High Fraction	100	4.0	mg/kg	3546/DRO	05/14/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	61.8		% Rec.	3546/DRO	05/14/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:44

L344768-02 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P

L344768-02 (PH) - 12.2@23.4c



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Est. 1970

## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 FRESH 2 TO 1

Collected By : Dan Prokop  
Collection Date : 05/05/08 09:30

ESC Sample # : L344768-03

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	BDL	5.0	mg/kg	9056	05/10/08	5
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	21.			Calc.	05/15/08	1
Specific Conductance	27000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	460	20.	mg/kg	351.2	05/14/08	1
Mercury	0.031	0.020	mg/kg	7471	05/15/08	1
Aluminum	4600	5.0	mg/kg	6010B	05/13/08	1
Arsenic	2.8	1.0	mg/kg	6010B	05/13/08	1
Barium	100	0.25	mg/kg	6010B	05/13/08	1
Boron	10.	10.	mg/kg	6010B	05/13/08	1
Cadmium	0.58	0.25	mg/kg	6010B	05/13/08	1
Calcium	59000	250	mg/kg	6010B	05/13/08	10
Chromium	7.0	0.50	mg/kg	6010B	05/13/08	1
Copper	10.	1.0	mg/kg	6010B	05/13/08	1
Iron	6300	5.0	mg/kg	6010B	05/13/08	1
Lead	BDL	2.5	mg/kg	6010B	05/13/08	10
Magnesium	3200	5.0	mg/kg	6010B	05/13/08	1
Manganese	140	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	0.97	0.25	mg/kg	6010B	05/13/08	1
Nickel	8.4	1.0	mg/kg	6010B	05/13/08	1
Potassium	1100	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	43000	250	mg/kg	6010B	05/17/08	5
Zinc	25.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.0052	0.0025	mg/kg	8021/8015	05/14/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/14/08	5
Ethylbenzene	0.0026	0.0025	mg/kg	8021/8015	05/14/08	5
Total Xylene	0.012	0.0075	mg/kg	8021/8015	05/14/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	93.6		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	98.7		% Rec.	8021/8015	05/14/08	5
TPH (GC/FID) High Fraction	26.	4.0	mg/kg	3546/DRO	05/14/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	86.1		% Rec.	3546/DRO	05/14/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:44

L344768-03 (PH) - 11.5@25.2c

L344768-03 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P Sulfate interference



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Est. 1970

## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 FRESH 3 TO 1

Collected By : Dan Prokop  
Collection Date : 05/05/08 09:45

ESC Sample # : L344768-04

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	BDL	5.0	mg/kg	9056	05/10/08	5
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	21.			Calc.	05/15/08	1
Specific Conductance	27000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	360	20.	mg/kg	351.2	05/14/08	1
Mercury	0.029	0.020	mg/kg	7471	05/15/08	1
Aluminum	4200	5.0	mg/kg	6010B	05/13/08	1
Arsenic	3.5	1.0	mg/kg	6010B	05/13/08	1
Barium	150	0.25	mg/kg	6010B	05/13/08	1
Boron	BDL	50.	mg/kg	6010B	05/14/08	5
Cadmium	0.77	0.25	mg/kg	6010B	05/13/08	1
Calcium	64000	120	mg/kg	6010B	05/13/08	5
Chromium	7.3	0.50	mg/kg	6010B	05/13/08	1
Copper	10.	1.0	mg/kg	6010B	05/13/08	1
Iron	6100	5.0	mg/kg	6010B	05/13/08	1
Lead	BDL	1.2	mg/kg	6010B	05/13/08	5
Magnesium	2600	5.0	mg/kg	6010B	05/13/08	1
Manganese	130	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	1.1	0.25	mg/kg	6010B	05/13/08	1
Nickel	7.6	1.0	mg/kg	6010B	05/13/08	1
Potassium	990	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	42000	250	mg/kg	6010B	05/17/08	5
Zinc	23.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.0086	0.0025	mg/kg	8021/8015	05/14/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/14/08	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/14/08	5
Total Xylene	0.011	0.0075	mg/kg	8021/8015	05/14/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	93.1		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	98.0		% Rec.	8021/8015	05/14/08	5
TPH (GC/FID) High Fraction	34.	4.0	mg/kg	3546/DRO	05/14/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	76.8		% Rec.	3546/DRO	05/14/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:44

L344768-04 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P Sulfate interference  
L344768-04 (PH) - 11.5@25.6c



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## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 SOL 2 TO 1

Collected By : Dan Prokop  
Collection Date : 05/05/08 10:00

ESC Sample # : L344768-05

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	BDL	1.0	mg/kg	9056	05/10/08	1
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	15.			Calc.	05/15/08	1
Specific Conductance	32000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	340	20.	mg/kg	351.2	05/14/08	1
Mercury	0.031	0.020	mg/kg	7471	05/15/08	1
Aluminum	6000	5.0	mg/kg	6010B	05/13/08	1
Arsenic	4.2	1.0	mg/kg	6010B	05/13/08	1
Barium	97.	0.25	mg/kg	6010B	05/13/08	1
Boron	BDL	50.	mg/kg	6010B	05/14/08	5
Cadmium	1.4	0.25	mg/kg	6010B	05/13/08	1
Calcium	110000	250	mg/kg	6010B	05/13/08	10
Chromium	7.7	0.50	mg/kg	6010B	05/13/08	1
Copper	14.	1.0	mg/kg	6010B	05/13/08	1
Iron	7900	5.0	mg/kg	6010B	05/13/08	1
Lead	BDL	2.5	mg/kg	6010B	05/13/08	10
Magnesium	4000	5.0	mg/kg	6010B	05/13/08	1
Manganese	170	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	1.3	0.25	mg/kg	6010B	05/13/08	1
Nickel	10.	1.0	mg/kg	6010B	05/13/08	1
Potassium	1500	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	83000	250	mg/kg	6010B	05/17/08	5
Zinc	40.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.0029	0.0025	mg/kg	8021/8015	05/14/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/14/08	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/14/08	5
Total Xylene	0.0091	0.0075	mg/kg	8021/8015	05/14/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.7		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	97.8		% Rec.	8021/8015	05/14/08	5
TPH (GC/FID) High Fraction	120	4.0	mg/kg	3546/DRO	05/16/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	47.7		% Rec.	3546/DRO	05/16/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:44

L344768-05 (DRO) - Previous run also had low IS/SURR recovery. Matrix effect.

L344768-05 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P

L344768-05 (PH) - 11.9@25.1c





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## REPORT OF ANALYSIS

Dan Prokop  
Encana  
2717 Co. Rd. 215  
Parachute, CO 81635

May 27, 2008

Date Received : May 09, 2008  
Description : NPR Soil Cutting Samples

Sample ID : E-19 SOL 3 TO 1

Collected By : Dan Prokop  
Collection Date : 05/05/08 10:15

ESC Sample # : L344768-06

Site ID :

Project # : JDE 8235.348

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phosphate as P	BDL	10.	mg/kg	9056	05/10/08	10
pH	12.		su	9045D	05/10/08	1
Sodium Adsorption Ratio	19.			Calc.	05/15/08	1
Specific Conductance	34000		umhos/cm	9050AMod	05/16/08	1
Kjeldahl Nitrogen, TKN	470	20.	mg/kg	351.2	05/14/08	1
Mercury	0.029	0.020	mg/kg	7471	05/15/08	1
Aluminum	7100	5.0	mg/kg	6010B	05/13/08	1
Arsenic	4.3	1.0	mg/kg	6010B	05/13/08	1
Barium	250	0.25	mg/kg	6010B	05/13/08	1
Boron	BDL	50.	mg/kg	6010B	05/14/08	5
Cadmium	1.3	0.25	mg/kg	6010B	05/13/08	1
Calcium	81000	120	mg/kg	6010B	05/13/08	5
Chromium	10.	0.50	mg/kg	6010B	05/13/08	1
Copper	17.	1.0	mg/kg	6010B	05/13/08	1
Iron	10000	5.0	mg/kg	6010B	05/13/08	1
Lead	5.0	1.2	mg/kg	6010B	05/13/08	5
Magnesium	5700	5.0	mg/kg	6010B	05/13/08	1
Manganese	250	0.50	mg/kg	6010B	05/13/08	1
Molybdenum	1.3	0.25	mg/kg	6010B	05/13/08	1
Nickel	14.	1.0	mg/kg	6010B	05/13/08	1
Potassium	1800	25.	mg/kg	6010B	05/13/08	1
Selenium	BDL	10.	mg/kg	6010B	05/13/08	10
Silver	BDL	0.50	mg/kg	6010B	05/13/08	1
Sulfur	60000	250	mg/kg	6010B	05/17/08	5
Zinc	44.	1.5	mg/kg	6010B	05/13/08	1
Benzene	0.0050	0.0025	mg/kg	8021/8015	05/14/08	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/14/08	5
Ethylbenzene	0.0026	0.0025	mg/kg	8021/8015	05/14/08	5
Total Xylene	0.010	0.0075	mg/kg	8021/8015	05/14/08	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/14/08	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	05/14/08	5
a,a,a-Trifluorotoluene(PID)	98.1		% Rec.	8021/8015	05/14/08	5
TPH (GC/FID) High Fraction	120	4.0	mg/kg	3546/DRO	05/16/08	1
Surrogate Recovery (50-150)						
o-Terphenyl	47.0		% Rec.	3546/DRO	05/16/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/27/08 13:43 Printed: 05/27/08 13:44

L344768-06 (PH) - 12.1@24.7c

L344768-06 (DRO) - Previous run also had low IS/SURR recovery. Matrix effect.

L344768-06 (ANIONS BY IC) - Phosphorus, Total reported as Phosphate as P Sulfate interference

Attachment A  
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L344768-01	Selenium	0
	Ethylbenzene	J6
	Total Xylene	J6
	TPH (GC/FID) Low Fraction	J6
	TPH (GC/FID) High Fraction	J3
L344768-02	Selenium	0
L344768-03	Lead	0
	Selenium	0
	Phosphate as P	0
	TPH (GC/FID) High Fraction	J3
L344768-04	Lead	0
	Selenium	0
	Phosphate as P	0
	TPH (GC/FID) High Fraction	J3
L344768-05	Lead	0
	Selenium	0
	o-Terphenyl	J2
L344768-06	Selenium	0
	Phosphate as P	0
	o-Terphenyl	J2

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
O	(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  
05/27/08 at 13:44:04

TSR Signing Reports: 151  
R5 - Desired TAT

Works closely with Cordilleran.Charge Codes: AFE - 4021929; JDE - 8715.692. Put AFE or JDE  
after sample ids. 10/4/07 JB.

Sample: L344768-01 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43  
Sample: L344768-02 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43  
Sample: L344768-03 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43  
Sample: L344768-04 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43  
Sample: L344768-05 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43  
Sample: L344768-06 Account: ENCRCO Received: 05/09/08 09:00 Due Date: 05/30/08 00:00 RPT Date: 05/27/08 13:43



08/11/09

## Technical Report for

**EnCana**

**Site Clearance**

**Accutest Job Number: T33244**

**Sampling Date: 07/14/09**

### Report to:

**EnCana**  
**2717 Co. Rd. 215**  
**Parachute, CO 81635**  
**brett.middleton@encana.com; christopher.hines@encana.com**  
**ATTN: Brett Middleton**

**Total number of pages in report: 66**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

**Paul Canevaro**  
**Laboratory Director**

**Client Service contact: Sylvia Garza 713-271-4700**

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

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Sample Summary

EnCana

Job No: T33244

Site Clearance

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
T33244-1	07/14/09	11:50	DP	07/15/09	SO	Soil	A28PITBOTTOM-071409
T33244-2	07/14/09	12:30	DP	07/15/09	SO	Soil	E19CUTTINGS-071409
T33244-2A	07/14/09	12:30	DP	07/15/09	AQ	Water Extract	E19CUTTINGS-071409
T33244-2B	07/14/09	12:30	DP	07/15/09	SO	Soil	E19CUTTINGS-071409
T33244-3	07/14/09	13:15	DP	07/15/09	SO	Soil	E19BACKGROUND-071409
T33244-3A	07/14/09	13:15	DP	07/15/09	AQ	Water Extract	E19BACKGROUND-071409
T33244-3B	07/14/09	13:15	DP	07/15/09	SO	Soil	E19BACKGROUND-071409

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

## Report of Analysis



Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-1	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.8
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	88.8		%	1	07/16/09	EV	SM 2540B M

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** E19CUTTINGS-071409**Lab Sample ID:** T33244-2**Date Sampled:** 07/14/09**Matrix:** SO - Soil**Date Received:** 07/15/09**Method:** SW846 8260B**Percent Solids:** 76.2**Project:** Site Clearance

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0018883.D	1	07/17/09	JL	n/a	n/a	VM761
Run #2							

	Initial Weight	Final Volume
Run #1	5.11 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	6.4	1.8	ug/kg	
108-88-3	Toluene	ND	6.4	1.6	ug/kg	
100-41-4	Ethylbenzene	ND	6.4	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	19	4.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-121%
2037-26-5	Toluene-D8	111%		76-132%
460-00-4	4-Bromofluorobenzene	118%		73-165%
17060-07-0	1,2-Dichloroethane-D4	101%		57-122%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: E19CUTTINGS-071409

Lab Sample ID: T33244-2

Date Sampled: 07/14/09

Matrix: SO - Soil

Date Received: 07/15/09

Method: SW846 8270C SW846 3550B

Percent Solids: 76.2

Project: Site Clearance

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H34201.D	1	07/22/09	SC	07/21/09	OP12544	EH1853
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	220	60	ug/kg	
208-96-8	Acenaphthylene	ND	220	51	ug/kg	
120-12-7	Anthracene	ND	220	42	ug/kg	
56-55-3	Benzo(a)anthracene	ND	220	83	ug/kg	
50-32-8	Benzo(a)pyrene	ND	220	34	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	220	53	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	220	51	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	220	40	ug/kg	
218-01-9	Chrysene	ND	220	47	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	220	110	ug/kg	
206-44-0	Fluoranthene	ND	220	45	ug/kg	
86-73-7	Fluorene	ND	220	59	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	220	78	ug/kg	
90-12-0	1-Methylnaphthalene	ND	220	51	ug/kg	
91-57-6	2-Methylnaphthalene	ND	220	68	ug/kg	
91-20-3	Naphthalene	ND	220	43	ug/kg	
85-01-8	Phenanthrene	ND	220	58	ug/kg	
129-00-0	Pyrene	ND	220	42	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		26-124%
4165-62-2	Phenol-d5	47%		19-106%
118-79-6	2,4,6-Tribromophenol	93%		18-129%
4165-60-0	Nitrobenzene-d5	51%		18-104%
321-60-8	2-Fluorobiphenyl	61%		21-114%
1718-51-0	Terphenyl-d14	145%		24-149%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	E19CUTTINGS-071409	
<b>Lab Sample ID:</b>	T33244-2	<b>Date Sampled:</b> 07/14/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 07/15/09
<b>Method:</b>	SW846 8015	<b>Percent Solids:</b> 76.2
<b>Project:</b>	Site Clearance	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE046019.D	1	07/16/09	FI	n/a	n/a	GEE2332
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.17 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	7.9	0.55	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		46-127%
98-08-8	aaa-Trifluorotoluene	105%		44-120%

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID: E19CUTTINGS-071409

Lab Sample ID: T33244-2

Date Sampled: 07/14/09

Matrix: SO - Soil

Date Received: 07/15/09

Percent Solids: 76.2

Project: Site Clearance

## SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.8	0.79	0.16	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Cadmium	0.83	0.39	0.079	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Chromium	25.9	3.9	0.28	mg/kg	5	07/24/09	07/27/09	NS	SW846 6010B <sup>3</sup>
Copper	139	2.0	0.10	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Lead	13.1	3.9	1.6	mg/kg	5	07/24/09	07/27/09	NS	SW846 6010B <sup>3</sup>
Mercury	0.020	0.020	0.00078	mg/kg	1	07/26/09	07/26/09	NS	SW846 7471A <sup>1</sup>
Nickel	17.9	3.1	0.10	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Selenium	1.6	0.79	0.19	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Silver	0.28 B	0.79	0.063	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>
Zinc	152	1.6	0.31	mg/kg	1	07/24/09	07/25/09	NS	SW846 6010B <sup>2</sup>

(1) Instrument QC Batch: MA4188

(2) Instrument QC Batch: MA4189

(3) Instrument QC Batch: MA4192

(4) Prep QC Batch: MP9915

(5) Prep QC Batch: MP9921

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	E19CUTTINGS-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-2	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.2
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	39.4	2.0	mg/kg	1	07/24/09 11:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	U	5.9	mg/kg	1	07/27/09 17:47	NS	SW846 6010/7196A M
Sodium Adsorption Ratio	13.4	0.40	ratio	1	07/29/09	TW	LADNR29B
Solids, Percent	76.2		%	1	07/16/09	EV	SM 2540B M
Specific Conductivity	7360	1.0	umhos/cm	1	07/24/09 15:30	KD	EPA 120.1
pH	7.2		su	1	07/22/09	MC	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	E19CUTTINGS-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-2A	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	76.2
<b>Project:</b>	Site Clearance		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	1340	200	4.2	ug/l	1	07/30/09	07/30/09 NS	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA4199  
(2) Prep QC Batch: MP9927  
  
(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



Report of Analysis

<b>Client Sample ID:</b>	E19CUTTINGS-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-2B	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.2
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	10900	320	0.96	mg/kg	25	07/28/09	07/28/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4192  
(2) Prep QC Batch: MP9926

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	94.9
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Site Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0018882.D	1	07/17/09	JL	n/a	n/a	VM761
Run #2							

	Initial Weight	Final Volume
Run #1	5.33 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.9	1.4	ug/kg	
108-88-3	Toluene	ND	4.9	1.2	ug/kg	
100-41-4	Ethylbenzene	ND	4.9	1.2	ug/kg	
1330-20-7	Xylene (total)	ND	15	3.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-121%
2037-26-5	Toluene-D8	110%		76-132%
460-00-4	4-Bromofluorobenzene	114%		73-165%
17060-07-0	1,2-Dichloroethane-D4	116%		57-122%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: E19BACKGROUND-071409

Lab Sample ID: T33244-3

Date Sampled: 07/14/09

Matrix: SO - Soil

Date Received: 07/15/09

Method: SW846 8270C SW846 3550B

Percent Solids: 94.9

Project: Site Clearance

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H34198.D	1	07/22/09	SC	07/21/09	OP12544	EH1853
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	180	48	ug/kg	
208-96-8	Acenaphthylene	ND	180	41	ug/kg	
120-12-7	Anthracene	ND	180	34	ug/kg	
56-55-3	Benzo(a)anthracene	ND	180	67	ug/kg	
50-32-8	Benzo(a)pyrene	ND	180	28	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	180	43	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	180	41	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	180	33	ug/kg	
218-01-9	Chrysene	ND	180	38	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	180	93	ug/kg	
206-44-0	Fluoranthene	ND	180	36	ug/kg	
86-73-7	Fluorene	ND	180	48	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	180	63	ug/kg	
90-12-0	1-Methylnaphthalene	ND	180	41	ug/kg	
91-57-6	2-Methylnaphthalene	ND	180	55	ug/kg	
91-20-3	Naphthalene	ND	180	35	ug/kg	
85-01-8	Phenanthrene	ND	180	47	ug/kg	
129-00-0	Pyrene	ND	180	34	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		26-124%
4165-62-2	Phenol-d5	32%		19-106%
118-79-6	2,4,6-Tribromophenol	83%		18-129%
4165-60-0	Nitrobenzene-d5	38%		18-104%
321-60-8	2-Fluorobiphenyl	39%		21-114%
1718-51-0	Terphenyl-d14	133%		24-149%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	94.9
<b>Method:</b>	SW846 8015		
<b>Project:</b>	Site Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE046018.D	1	07/16/09	FI	n/a	n/a	GEE2332
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.30 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.2	0.37	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%		46-127%
98-08-8	aaa-Trifluorotoluene	109%		44-120%

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409			<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3			<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	94.9
<b>Method:</b>	SW846 8015 M SW846 3550B				
<b>Project:</b>	Site Clearance				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF191045.D	1	07/23/09	FO	07/21/09	OP12545	GIF852
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	16.4	8.6	2.8	mg/kg	
	TPH (> C28-C35)	28.6	8.6	2.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		33-115%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** E19BACKGROUND-071409**Lab Sample ID:** T33244-3**Date Sampled:** 07/14/09**Matrix:** SO - Soil**Date Received:** 07/15/09**Percent Solids:** 94.9**Project:** Site Clearance

## SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.6	0.61	0.12	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium	0.95	0.31	0.061	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Chromium	27.5	3.1	0.21	mg/kg	5	07/24/09	07/27/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>4</sup>
Copper	22.8	1.5	0.079	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Lead	16.9	3.1	1.2	mg/kg	5	07/24/09	07/27/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>4</sup>
Mercury	0.015 B	0.017	0.00066	mg/kg	1	07/26/09	07/26/09 NS	SW846 7471A <sup>1</sup>	SW846 7471A <sup>5</sup>
Nickel	18.8	2.4	0.079	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Selenium	1.0	0.61	0.15	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Silver	0.28 B	0.61	0.049	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Zinc	68.3	1.2	0.24	mg/kg	1	07/24/09	07/25/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>

(1) Instrument QC Batch: MA4188

(2) Instrument QC Batch: MA4189

(3) Instrument QC Batch: MA4192

(4) Prep QC Batch: MP9915

(5) Prep QC Batch: MP9921

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	94.9
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.5	2.0	mg/kg	1	07/24/09 11:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	23.0	5.1	mg/kg	1	07/27/09 17:53	NS	SW846 6010/7196A M
Sodium Adsorption Ratio	0.78	0.40	ratio	1	07/29/09	TW	LADNR29B
Solids, Percent	94.9		%	1	07/16/09	EV	SM 2540B M
Specific Conductivity	134	1.0	umhos/cm	1	07/24/09 15:30	KD	EPA 120.1
pH	8.8		su	1	07/22/09	MC	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3A	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	94.9
<b>Project:</b>	Site Clearance		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	3960	200	4.2	ug/l	1	07/30/09	07/31/09 NS	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

- (1) Instrument QC Batch: MA4199  
(2) Prep QC Batch: MP9927

(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



Report of Analysis

<b>Client Sample ID:</b>	E19BACKGROUND-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-3B	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	94.9
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium <sup>a</sup>	275	100	0.30	mg/kg	10	07/26/09	07/27/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

- (1) Instrument QC Batch: MA4192  
(2) Prep QC Batch: MP9926  
  
(a) Prep by LA DNR 29 B

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



# CHAIN OF CUSTODY

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

Client / Reporting Information		Project Information		FED-EX Tracking #		Bottle Order Control #	
Company Name <b>EnCana Oil &amp; Gas (USA) Inc.</b>		Project Name / No. <b>Site Clearance</b>		Accutest Quote #		Accutest Job # <b>T33244</b>	
Project Contact <b>Chris Hines</b> E-Mail: <b>christopher.hines@encana.com</b>		Bill to Invoice Attn.					
Address <b>2717 County Road 215, Suite 100</b>		Address					
City <b>Parachute, CO 81635</b>		City					
State <b>CO</b>		State					
Zip <b>81635</b>		Zip					
Phone No. <b>970-285-2739</b>		Phone No.					
Fax No.		Fax No.					
Samplers Name <b>Dan Prokop</b>		Client Purchase Order #					
Accutest Sample #		Field ID / Point of Collection					
		Collection					
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		Matrix					
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**Table 1:**  
Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS <sup>1</sup>	ANALYTICAL METHOD (SW846)
<b>Organic Compounds in Soil</b>		
TPH (total volatile and extractable petroleum hydrocarbons)	1,500 mg/kg	8015
Benzene	0.17 mg/kg <sup>2</sup>	8280B
Toluene	85 mg/kg <sup>2</sup>	8280B
Ethylbenzene	100 mg/kg <sup>2</sup>	8280B
Xylenes (total)	175 mg/kg <sup>2</sup>	8280B
Arenathene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benzo(a)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(b)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(k)fluoranthene	2.2 mg/kg <sup>2</sup>	8270C
Benzo(a)pyrene	0.022 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(a,h)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-c,d)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
<b>Inorganics in Soils</b>		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12 <sup>2</sup>	LA3462B8
pH	6-9	9245C
<b>Metals in Soils</b>		
Arsenic	0.39 mg/kg <sup>2</sup>	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>	6010B
Boron (Hot Water Soluble)	2 mg/l <sup>3</sup>	6010B
Cadmium	7.0 mg/kg <sup>2a</sup>	6010B
Chromium (III)	120,000 mg/kg <sup>2</sup>	6010B
Chromium (VI)	23 mg/kg <sup>2a</sup>	6010B
Copper	3,100 mg/kg <sup>2</sup>	6010B
Lead (inorganic)	400 mg/kg <sup>2</sup>	6010B
Mercury	23 mg/kg <sup>2</sup>	6010B
Nickel (soluble salts)	1,800 mg/kg <sup>2a</sup>	6010B
Selenium	390 mg/kg <sup>2a</sup>	6010B
Silver	390 mg/kg <sup>2</sup>	6010B
Zinc	23,000 mg/kg <sup>2a</sup>	6010B
<b>Liquid Hydrocarbons in Soils and Ground Water</b>		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW-846 analytical methods be used where possible and that analyses of samples be performed in accordance with the methods in the latest version of EPA SW-846.

<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

## 3.1 3

Airbill Numbers: \_\_\_\_\_

### TRIP BLANK INFORMATION

- |                          |                                    |
|--------------------------|------------------------------------|
| <input type="checkbox"/> | Custody seal missing or not intact |
| <input type="checkbox"/> | Temperature criteria not met       |
| <input type="checkbox"/> | Wet ice received in cooler         |

### CHAIN OF CUSTODY

- |  |                               |
|--|-------------------------------|
|  | Chain of Custody not received |
|  | Sample D/T unclear or missing |
|  | Analyses unclear or missing   |
|  | COC not properly executed     |

- |                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Sample containers received broken           |
| <input type="checkbox"/> | VOC vials have headspace                    |
| <input type="checkbox"/> | Sample labels missing or illegible          |
| <input type="checkbox"/> | ID on COC does not match label(s)           |
| <input type="checkbox"/> | D/T on COC does not match label(s)          |
| <input type="checkbox"/> | Sample/Bottles rec'd but no analysis on COC |
| <input type="checkbox"/> | Sample listed on COC, but not received      |
| <input type="checkbox"/> | Bottles missing for requested analysis      |
| <input type="checkbox"/> | Insufficient volume for analysis            |
| <input type="checkbox"/> | Sample received improperly preserved        |

- |  |                                    |
|--|------------------------------------|
|  | Trip Blank on COC but not received |
|  | Trip Blank received but not on COC |
|  | Trip Blank not intact              |
|  | Received Water Trip Blank          |
|  | Received Soil TB                   |

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: [Signature] 07/15/09

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 2/15/9

### CORRECTIVE ACTIONS

**Client Representative Notified:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**By Accutest Representative:** \_\_\_\_\_ **Via:** Phone \_\_\_\_\_ Email \_\_\_\_\_

**Client Instructions:**

i:\mwalker\form\samplemanagement

# SAMPLE RECEIPT LOG

JOB #: T33244 DATE/TIME RECEIVED: 07/15/09 09:15

CLIENT: En Cana INITIALS: EF

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	A28DIT BOTTOM - 071409	07/14/09	1150	S	16.02	1	VR	⊙ 2 3 4 5 6 7 8 <2 >12
						2-3	2H	⊙ 2 3 4 5 6 7 8 <2 >12	
	2	E19 CUTTINGS - 071409		1230		1	VR	⊙ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊙ 2 3 4 5 6 7 8 <2 >12	
	3	E10 BALK GROUND - 071409		1315		1	VR	⊙ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊙ 2 3 4 5 6 7 8 <2 >12	
<div>EF 07/15/09</div>									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
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									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other  
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer



## GC/MS Volatiles

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM761-MB	M0018880.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples:

Method: SW846 8260B

T33244-2, T33244-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	1.4	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.3	ug/kg	
108-88-3	Toluene	ND	5.0	1.3	ug/kg	
1330-20-7	Xylene (total)	ND	15	3.8	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	107% 70-121%
2037-26-5	Toluene-D8	100% 76-132%
460-00-4	4-Bromofluorobenzene	97% 73-165%
17060-07-0	1,2-Dichloroethane-D4	104% 57-122%



Blank Spike Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM761-BS	M0018878.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples: Method: SW846 8260B

T33244-2, T33244-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	46.3	93	70-114
100-41-4	Ethylbenzene	50	41.3	83	60-119
108-88-3	Toluene	50	42.1	84	68-115
1330-20-7	Xylene (total)	150	125	83	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-121%
2037-26-5	Toluene-D8	100%	76-132%
460-00-4	4-Bromofluorobenzene	96%	73-165%
17060-07-0	1,2-Dichloroethane-D4	106%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T33284-1MS	M0018889.D	1	07/17/09	JL	n/a	n/a	VM761
T33284-1MSD	M0018890.D	1	07/17/09	JL	n/a	n/a	VM761
T33284-1	M0018888.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples:

Method: SW846 8260B

T33244-2, T33244-3

CAS No.	Compound	T33284-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		64.8	60.9	94	58.5	91	4	70-114/38
100-41-4	Ethylbenzene	ND		64.8	60.3	93	55.5	87	8	60-119/40
108-88-3	Toluene	ND		64.8	67.3	104	59.2	93	13	68-115/38
1330-20-7	Xylene (total)	ND		195	176	90	165	86	6	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T33284-1	Limits
1868-53-7	Dibromofluoromethane	106%	103%	105%	70-121%
2037-26-5	Toluene-D8	116%	106%	101%	76-132%
460-00-4	4-Bromofluorobenzene	131%	109%	102%	73-165%
17060-07-0	1,2-Dichloroethane-D4	109%	105%	110%	57-122%



## GC/MS Semi-volatiles

5

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12544-MB	P04889.D	1	07/21/09	GJ	07/21/09	OP12544	EP240

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-2, T33244-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	170	46	ug/kg	
208-96-8	Acenaphthylene	ND	170	39	ug/kg	
120-12-7	Anthracene	ND	170	32	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	64	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	41	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	39	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	31	ug/kg	
218-01-9	Chrysene	ND	170	36	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	88	ug/kg	
206-44-0	Fluoranthene	ND	170	34	ug/kg	
86-73-7	Fluorene	ND	170	45	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	60	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	52	ug/kg	
91-20-3	Naphthalene	ND	170	33	ug/kg	
85-01-8	Phenanthrene	ND	170	45	ug/kg	
129-00-0	Pyrene	ND	170	32	ug/kg	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	48% 26-124%
4165-62-2	Phenol-d5	52% 19-106%
118-79-6	2,4,6-Tribromophenol	61% 18-129%
4165-60-0	Nitrobenzene-d5	52% 18-104%
321-60-8	2-Fluorobiphenyl	60% 21-114%
1718-51-0	Terphenyl-d14	69% 24-149%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Semi-Volatile		0	ug/kg	

## Blank Spike Summary

Page 1 of 1

**Job Number:** T33244  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12544-BS	J12115.D	1	07/21/09	SC	07/21/09	OP12544	EJ559

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-2, T33244-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1650	1440	87	53-106
208-96-8	Acenaphthylene	1650	1440	87	61-121
120-12-7	Anthracene	1650	1500	91	66-105
56-55-3	Benzo(a)anthracene	1650	1500	91	62-113
50-32-8	Benzo(a)pyrene	1650	1420	86	61-118
205-99-2	Benzo(b)fluoranthene	1650	1460	88	67-110
191-24-2	Benzo(g,h,i)perylene	1650	1830	111	57-124
207-08-9	Benzo(k)fluoranthene	1650	1530	93	65-116
218-01-9	Chrysene	1650	1520	92	71-106
53-70-3	Dibenzo(a,h)anthracene	1650	1830	111	59-123
206-44-0	Fluoranthene	1650	1470	89	64-114
86-73-7	Fluorene	1650	1400	85	65-99
193-39-5	Indeno(1,2,3-cd)pyrene	1650	1810	109	51-133
90-12-0	1-Methylnaphthalene	1650	1370	83	56-94
91-57-6	2-Methylnaphthalene	1650	1430	86	48-101
91-20-3	Naphthalene	1650	1340	81	57-94
85-01-8	Phenanthrene	1650	1480	90	66-102
129-00-0	Pyrene	1650	1760	106	49-117

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	77%	26-124%
4165-62-2	Phenol-d5	85%	19-106%
118-79-6	2,4,6-Tribromophenol	97%	18-129%
4165-60-0	Nitrobenzene-d5	82%	18-104%
321-60-8	2-Fluorobiphenyl	84%	21-114%
1718-51-0	Terphenyl-d14	107%	24-149%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T33244  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12544-MS	P04892.D	1	07/21/09	GJ	07/21/09	OP12544	EP240
OP12544-MSD	P04893.D	1	07/21/09	GJ	07/21/09	OP12544	EP240
T33549-1	P04891.D	1	07/21/09	GJ	07/21/09	OP12544	EP240

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-2, T33244-3

CAS No.	Compound	T33549-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		2040	1650	81	1330	66	21	53-106/49
208-96-8	Acenaphthylene	ND		2040	1870	92	1510	75	21	61-121/49
120-12-7	Anthracene	ND		2040	1850	91	1790	88	3	66-105/40
56-55-3	Benzo(a)anthracene	ND		2040	1880	92	1840	91	2	62-113/43
50-32-8	Benzo(a)pyrene	ND		2040	1860	91	1820	90	2	61-118/44
205-99-2	Benzo(b)fluoranthene	ND		2040	1750	86	1720	85	2	67-110/42
191-24-2	Benzo(g,h,i)perylene	ND		2040	2220	109	2190	108	1	57-124/50
207-08-9	Benzo(k)fluoranthene	ND		2040	1810	89	1730	85	5	65-116/37
218-01-9	Chrysene	ND		2040	1930	95	1900	94	2	71-106/39
53-70-3	Dibenzo(a,h)anthracene	ND		2040	2180	107	2120	105	3	59-123/37
206-44-0	Fluoranthene	ND		2040	2020	99	2030	100	0	64-114/45
86-73-7	Fluorene	ND		2040	1700	83	1500	74	13	65-99/42
193-39-5	Indeno(1,2,3-cd)pyrene	ND		2040	2220	109	2180	108	2	51-133/55
90-12-0	1-Methylnaphthalene	ND		2040	1490	73	1130	56	27	56-94/49
91-57-6	2-Methylnaphthalene	ND		2040	1460	72	1110	55	27	48-101/48
91-20-3	Naphthalene	ND		2040	1470	72	1160	57	24	57-94/49
85-01-8	Phenanthrene	ND		2040	1840	90	1770	87	4	66-102/47
129-00-0	Pyrene	ND		2040	1620	80	1480	73	9	49-117/46

CAS No.	Surrogate Recoveries	MS	MSD	T33549-1	Limits
367-12-4	2-Fluorophenol	65%	50%	43%	26-124%
4165-62-2	Phenol-d5	66%	52%	47%	19-106%
118-79-6	2,4,6-Tribromophenol	83%	80%	55%	18-129%
4165-60-0	Nitrobenzene-d5	67%	54%	47%	18-104%
321-60-8	2-Fluorobiphenyl	75%	61%	54%	21-114%
1718-51-0	Terphenyl-d14	74%	69%	61%	24-149%



## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2332-MB	EE046003.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples:

Method: SW846 8015

T33244-2, T33244-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.35	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	95%	46-127%
98-08-8	aaa-Trifluorotoluene	105%	44-120%



Blank Spike Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2332-BS	EE045999.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples: Method: SW846 8015

T33244-2, T33244-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.388	97	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	94%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T33013-4MS	EE046010.D	1	07/16/09	FI	n/a	n/a	GEE2332
T33013-4MSD	EE046011.D	1	07/16/09	FI	n/a	n/a	GEE2332
T33013-4	EE046016.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples: Method: SW846 8015

T33244-2, T33244-3

CAS No.	Compound	T33013-4 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.858	J	20.9	28.5	133*	22.5	104	24*	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T33013-4	Limits
460-00-4	4-Bromofluorobenzene	100%	101%	94%	46-127%
98-08-8	aaa-Trifluorotoluene	98%	114%	105%	44-120%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-MB	IF191036.D	1	07/23/09	FO	07/21/09	OP12545	GIB852

The QC reported here applies to the following samples: Method: SW846 8015 M

T33244-2, T33244-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	
	TPH (> C28-C35)	ND	8.3	2.2	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	82% 33-115%

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Blank Spike Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-BS	IF191037.D	1	07/23/09	FO	07/21/09	OP12545	GIF852

The QC reported here applies to the following samples: Method: SW846 8015 M

T33244-2, T33244-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	29.2	88	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-MS	IF191038.D	1	07/23/09	FO	07/21/09	OP12545	GIB852
OP12545-MSD	IF191039.D	1	07/23/09	FO	07/21/09	OP12545	GIF852
T33244-2	IF191065.D	1	07/23/09	FO	07/21/09	OP12545	GIF852

The QC reported here applies to the following samples: Method: SW846 8015 M

T33244-2, T33244-3

CAS No.	Compound	T33244-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	89.1		43.4	145	129*	109	47	28	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T33244-2	Limits
84-15-1	o-Terphenyl	106%	87%	73%	33-115%



## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9915  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/24/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.027	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0040	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.040	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.11	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	-0.052	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.0075	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.069	<0.50
Silver	0.50	.043	.04	0.026	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.11	<1.0

Associated samples MP9915: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9915  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

07/24/09

07/24/09

	T30003-4R			QC	T30003-4R		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	6.0	5.4	10.5	0-20	6.0	30.4	24.9	97.9	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium	0.52	0.47	10.1	0-20	0.52	25.8	24.9	101.5	80-120
Calcium									
Chromium	10.8	10.8	0.0	0-20	10.8	36.3	24.9	102.3	80-120
Cobalt									
Copper	15.8	15.3	3.2	0-20	15.8	41.5	24.9	103.1	80-120
Iron									
Lead	87.2	76.9	12.6	0-20	87.2	108	24.9	83.5	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	10.2	10	2.0	0-20	10.2	35.6	24.9	101.9	80-120
Potassium									
Selenium	0.51	0.41	21.7 (a)	0-20	0.51	24.7	24.9	97.1	80-120
Silver	0.27	0.24	11.8	0-20	0.27	25.2	24.9	100.1	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	95.4	88.0	8.1	0-20	95.4	116	24.9	82.7	80-120

Associated samples MP9915: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9915  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/24/09

	T30003-4R		Spikelot		MSD	QC
Metal	Original	MSD	MPTW4	% Rec	RPD	Limit
Aluminum						
Antimony						
Arsenic	6.0	29.5	23.9	98.2	3.0	20
Barium	anr					
Beryllium						
Boron						
Cadmium	0.52	24.8	23.9	101.5	4.0	20
Calcium						
Chromium	10.8	35.1	23.9	101.6	3.4	20
Cobalt						
Copper	15.8	41.1	23.9	105.8	1.0	20
Iron						
Lead	87.2	106	23.9	78.6N	1.9	20
Magnesium						
Manganese						
Molybdenum						
Nickel	10.2	34.4	23.9	101.2	3.4	20
Potassium						
Selenium	0.51	23.6	23.9	96.5	4.6	20
Silver	0.27	24.3	23.9	100.5	3.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	95.4	113	23.9	73.6N	2.6	20

Associated samples MP9915: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9915  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/24/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	295	280	105.4	81-119
Barium	anr			
Beryllium				
Boron				
Cadmium	193	182	106.0	82-118
Calcium				
Chromium	155	142	109.2	81-120
Cobalt				
Copper	140	132	106.1	83-117
Iron				
Lead	77.5	72.2	107.3	82-118
Magnesium				
Manganese				
Molybdenum				
Nickel	169	155	109.0	83-117
Potassium				
Selenium	175	165	106.1	78-123
Silver	130	126	103.2	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	361	346	104.3	79-121

Associated samples MP9915: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9915  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/24/09

Metal	T30003-4R Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	100	104	3.8	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	8.58	7.89	8.0	0-10
Calcium				
Chromium	181	186	2.8	0-10
Cobalt				
Copper	262	248	5.6	0-10
Iron				
Lead	1450	1500	3.5	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	170	171	0.6	0-10
Potassium				
Selenium	8.55	0.00	100.0(a)	0-10
Silver	4.52	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1590	1680	5.8	0-10

Associated samples MP9915: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9921  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/26/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0053	<0.017

Associated samples MP9921: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9921  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/26/09

07/26/09

Metal	T33244-2		QC	T33244-2		Spikelot	QC	
	Original	DUP	RPD	Limits	Original MS	HGTXWS1	% Rec	Limits
Mercury	0.020	0.023	14.0	0-20	0.020 0.35	0.297	111.0	75-125

Associated samples MP9921: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9921  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/26/09

Metal	T33244-2 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.020	0.36	0.311	109.3	2.8	

Associated samples MP9921: T33244-2, T33244-3

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

Prep Date: 07/26/09

Metal	LCS Result	Spikelot HGTXWS1 % Rec	QC Limits
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Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.060	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP9926: T33244-2B, T33244-3B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

07/26/09

Metal	T33013-2B Original	DUP	RPD	QC Limits	T33013-2B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	165	165	0.0	0-20	165	194	20.9	138.5(a)	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9926: T33244-2B, T33244-3B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

Metal	T33013-2B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	165	185	20.9	95.6	4.7	20
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9926: T33244-2B, T33244-3B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

Prep Date: 07/26/09

Metal	LCS Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9926: T33244-2B, T33244-3B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/26/09

Metal	T33013-2B		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium	3120	3100	0.4	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9926: T33244-2B, T33244-3B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.4  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	400	33	34		
Antimony	10	4.5	6		
Arsenic	10	3.5	4		
Barium	400	.28	5.4		
Beryllium	10	.22	.4		
Boron	200	2.2	4.2	19.4	<200
Cadmium	8.0	.5	.6		
Calcium	10000	11	70		
Chromium	20	2.2	3.8		
Cobalt	100	1	1.6		
Copper	50	1.2	12		
Iron	200	26	26		
Lead	6.0	3.2	3.4		
Magnesium	10000	13	16		
Manganese	30	.4	15		
Molybdenum	20	1.9	2.6		
Nickel	80	1.9	6.4		
Potassium	10000	110	110		
Selenium	10	6.5	6.4		
Silver	20	1.7	1.6		
Sodium	10000	260	270		
Strontium	40	.34	.8		
Thallium	20	6.5	5.2		
Tin	40	3.6	5.8		
Titanium	40	.6	.6		
Vanadium	100	1.2	1.2		
Zinc	40	.98	8.2		

Associated samples MP9927: T33244-2A, T33244-3A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

07/30/09

07/30/09

Metal	T33013-3A			QC	T33013-3A		Spikelot		QC
	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	1840	1990	7.8	0-20	1840	3330	1550	78.1	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9927: T33244-2A, T33244-3A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	T33013-3A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	1840	3260	1560	74.0	2.1	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9927: T33244-2A, T33244-3A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2000	1600	99.8	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9927: T33244-2A, T33244-3A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.4.3  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	T33013-3A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	936	882	5.7	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9927: T33244-2A, T33244-3A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.4.4  
8



## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN17466	2.0	<2.0	mg/kg	40	41.6	103.9	80-120%
Sodium Adsorption Ratio	GN17525	0.40	1.2*(a)	ratio				
Specific Conductivity	GN17469	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN17466: T33244-2, T33244-3  
Batch GN17469: T33244-2, T33244-3  
Batch GN17525: T33244-2, T33244-3  
(\*) Outside of QC limits  
(a) The calculated Sodium Absorption Ratio in the method blank was above the method reporting limit. The concentration of sodium found in the sample was 10 times above the concentration found in the method blank.

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN17466	T33012-1	mg/kg	3.4	3.1	9.3	0-20%
Sodium Adsorption Ratio	GN17525	T33013-2	ratio	26.5	26.9	1.7	0-20%
Solids, Percent	GN17391	T32478-1	%	80.9	81.1	0.2	0-20%
Specific Conductivity	GN17469	T33012-1	umhos/cm	3190	3190	0.0	0-20%
pH	GN17446	T33244-2	su	7.2	7.2	0.0	0-20%

Associated Samples:

Batch GN17391: T33244-1, T33244-2, T33244-3

Batch GN17446: T33244-2, T33244-3

Batch GN17466: T33244-2, T33244-3

Batch GN17469: T33244-2, T33244-3

Batch GN17525: T33244-2, T33244-3

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN17466	T33012-1	mg/kg	3.4	40	41.6	95.6	75-125%

Associated Samples:

Batch GN17466: T33244-2, T33244-3

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



10/27/09

## Technical Report for

ENCANA

Site Clearance

Accutest Job Number: T33244C

Sampling Date: 07/14/09

Report to:

EnCana

christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **14**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

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Sample Summary

ENCANA

Job No: T33244C

Site Clearance

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
T33244-2C	07/14/09	12:30	DP	07/15/09	SO	Soil	E19CUTTINGS-071409

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

## Report of Analysis

Report of Analysis

<b>Client Sample ID:</b>	E19CUTTINGS-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-2C	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	76.2
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.0 B	2.0	mg/kg	1	09/17/09 11:00	KD	SW846 3060/7196A

RL = Reporting Limit



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



**Table 1:**  
Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS <sup>1</sup>	ANALYTICAL METHOD (SW846)
<b>Organic Compounds in Soil</b>		
TPH (total volatile and extractable petroleum hydrocarbons)	1,500 mg/kg	8015
Benzene	0.17 mg/kg <sup>2</sup>	8260B
Toluene	85 mg/kg <sup>2</sup>	8260B
Ethylbenzene	100 mg/kg <sup>2</sup>	8260B
Xylenes (total)	175 mg/kg <sup>2</sup>	8260B
Arenathene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benzo(a)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(b)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(k)fluoranthene	2.2 mg/kg <sup>2</sup>	8270C
Benzo(a)pyrene	0.022 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(a,h)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-c,d)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
<b>Inorganics in Soils</b>		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12 <sup>2</sup>	LA392/208
pH	6-9	9245C
<b>Metals in Soils</b>		
Arsenic	0.39 mg/kg <sup>2</sup>	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>	6010B
Boron (Hot Water Soluble)	2 mg/l <sup>3</sup>	6010B
Cadmium	7.0 mg/kg <sup>2a</sup>	6010B
Chromium (III)	120,000 mg/kg <sup>2</sup>	6010B
Chromium (VI)	23 mg/kg <sup>2a</sup>	6010B
Copper	3,100 mg/kg <sup>2</sup>	6010B
Lead (inorganic)	400 mg/kg <sup>2</sup>	6010B
Mercury	23 mg/kg <sup>2</sup>	6010B
Nickel (soluble salts)	1,800 mg/kg <sup>2a</sup>	6010B
Selenium	390 mg/kg <sup>2a</sup>	6010B
Silver	390 mg/kg <sup>2</sup>	6010B
Zinc	25,000 mg/kg <sup>2a</sup>	6010B
<b>Liquid Hydrocarbons in Soils and Ground Water</b>		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW-846 analytical methods be used where possible and that analyses of samples be performed in a laboratory that is certified to EPA Method 1631 for metals and EPA Method 8260 for organic compounds.  
<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

## 3.1 3

Airbill Numbers: \_\_\_\_\_

### TRIP BLANK INFORMATION

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 2159

**Client Instructions:**

9 of 14  
**ACCUTEST.**  
T33244G Laboratories

# SAMPLE RECEIPT LOG

JOB #: T33244 DATE/TIME RECEIVED: 07/15/09 09:15  
 CLIENT: En Cana INITIALS: FF

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	A28DIT BOTTOM - 071409	07/14/09	1150	S	16.02	1	VR	⊖ 2 3 4 5 6 7 8 <2 >12
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
	2	E19 CUTTINGS - 071409		1230		1	VR	⊖ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
	3	E10 BALK GROUND - 071409		1315		1	VR	⊖ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
FF 07/15/09									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other  
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer





## General Chemistry

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244C  
Account: ENCACOP - ENCANA  
Project: Site Clearance

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18014	2.0	<2.0	mg/kg	40	40.7	101.7	80-120%

Associated Samples:  
Batch GN18014: T33244-2C  
(\*) Outside of QC limits

4.1  
4

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244C  
Account: ENCACOP - ENCANA  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18014	T36911-1	mg/kg	1.2 B	<2.0	13.2	0-20%

Associated Samples:  
Batch GN18014: T33244-2C  
(\*) Outside of QC limits

4.2  
4

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244C  
Account: ENCACOP - ENCANA  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18014	T36911-1	mg/kg	1.2 B	40	43.9	106.9	75-125%

Associated Samples:

Batch GN18014: T33244-2C

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

4.3  
4