Encana Oil & Gas (USA) Inc.
370 - 17 Street, Suite 1700
Denver, CO 80202

C28 696 (Location: 335200)
Pit (Facility: 425557)
Encana Oil & Gas (USA) Inc. (Operator: 100185)

REPORT OF WORK COMPLETED

- Form 27 (Doc: 2232902) (Rem: 7748)

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Notice of Intent and Status Update) to document pit closure efforts on a well pad in the North Parachute area of operation in Garfield County.

Initial pit closure and characterization efforts were carried out in October, 2009. The pit was drained, and the liner and above liner solids were removed for offsite disposal. Below-liner soil conditions were characterized with a 5-point composite sample of the pit bottom submitted to the laboratory for analysis. Sample results identified concentrations/levels above the allowable limits in COGCC Table 910-1 for TPH, PAH, SAR, pH, and arsenic.

A track-hoe was used to remove visually stained soils from the pit bottom, and a composite sample was collected to characterize the pit bottom. This process was repeated until pit bottom clearance was achieved on October 28, 2009. A composite sample of the pit bottom stockpile was also collected for lab analysis.

The stockpiled material had concentrations above COGCC Table 910-1 allowable limits for Benzene, PAH, SAR, pH, and arsenic. The stockpile was returned to the pit excavation and backfilled to grade to support interim reclaim.

Analytical results are provided in the attached summary table and laboratory reports.

NOTICE OF INTENT

During a records review in support of final closure of this project, the burial of material with organic (benzene and PAH) exceedences was discovered. An in-situ characterization and remediation system install with a track-mounted soil auger is scheduled to begin on March 26, 2015.

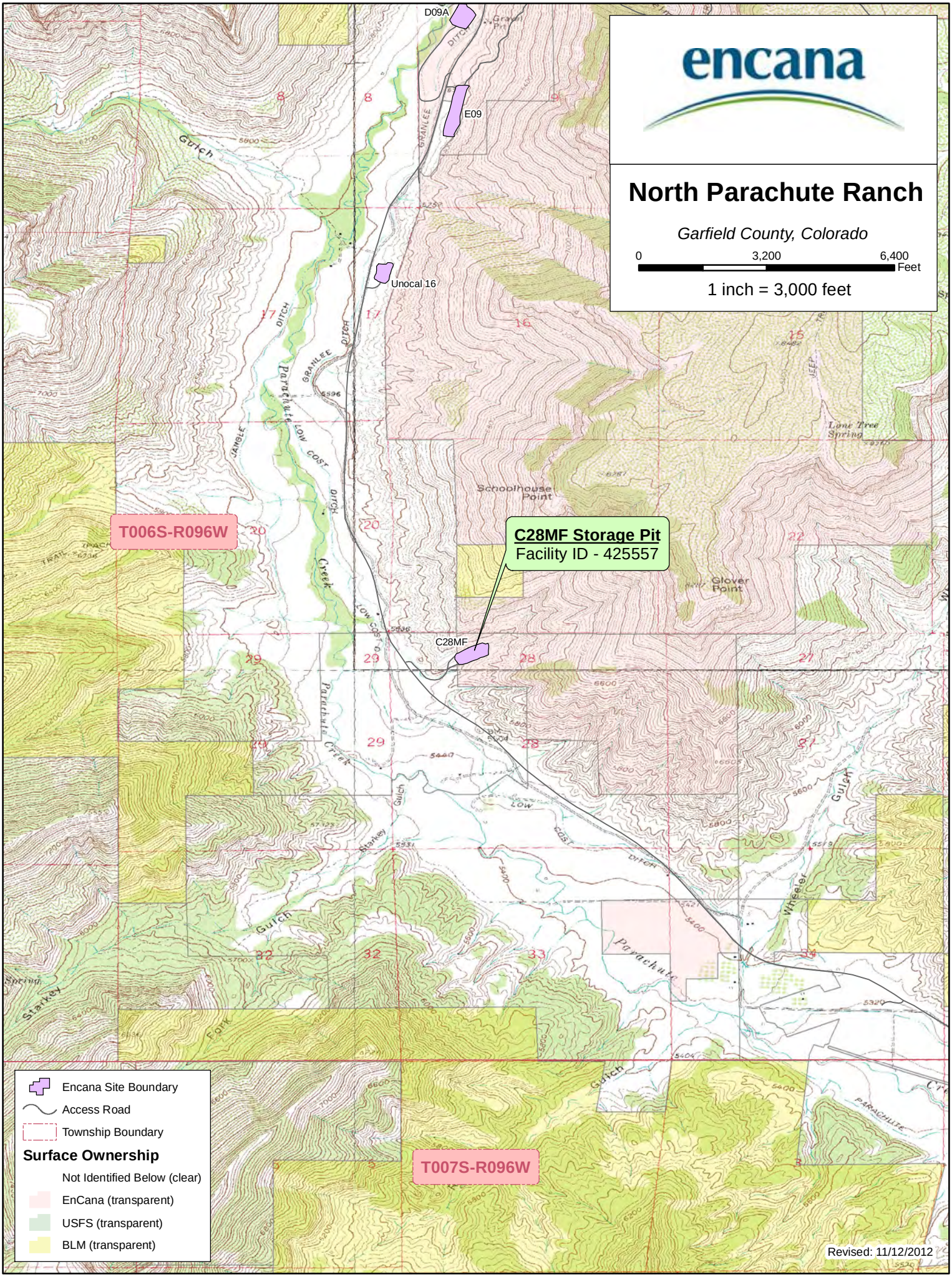
An environmental contractor will provide onsite support of in-situ characterization efforts. A hydrocarbon field test kit will be utilized to during drilling activities to guide sample collection for laboratory analysis and remediation system (well) installation.

If active remediation is required on this location: vent turbines will be installed on the top of well installations; pilot testing will be conducted to determine remediation system configuration; and the location will receive monthly operations and maintenance (O&M) visits to monitor remediation system function during the life of the project.

A Notification of Completion for this project will be submitted when clearance samples are received following a characterization event.

ATTACHMENTS

1. Topographic Location Map
2. Laboratory Results Summary Table
3. Laboratory Reports


encana
North Parachute Ranch
Garfield County, Colorado
0
3,200
6,400
Feet
1 inch = 3,000 feet
D09A
E09
Unocal 16
C28MF Storage Pit
Facility ID - 425557
C28MF
T006S-R096W
T007S-R096W
Encana Site Boundary
Access Road
Township Boundary
Surface Ownership
Not Identified Below (clear)
EnCana (transparent)
USFS (transparent)
BLM (transparent)
Revised: 11/12/2012

encana natural gas

Laboratory Results Summary Table

03/25/2015

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

				Organic Compounds in Soil (mg/kg [ppm])																						Inorganics in Soil			Metals in Soil (mg/kg [ppm])											
			Allowable Concentration -->	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
Location	Sample Date:	Sample Matrix	Matrix Notes	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	Napthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
C28MF	10/15/09	Pit	pit bottom	74.7	10.4	64.3	0.001	ND	ND	ND	ND	0.025	**0.271**	**0.567**	0.11	**0.14**	0.329	**0.0525**	0.286	38.2	0.11	0.017	0.209	2.51	**35.5**	**9.1**	**5.7**		0.22	10.7	1.5	13.3	11.4	0.11	17.4	0.14	0.22	56
C28MF	10/19/09	Pit	pit bottom	**896.3**	17.3	**879**	ND	0.0028	ND	ND	ND	0.013	0.123	0.195	0.04	**0.0548**	0.156	**0.0313**	0.174	0.137	0.058	0.355	0.0679	2.53	**29.6**	8.9	**5.7**		0.97	15.4	1.3	15.3	12.2	0.037	17.6	0.15	0.21	61.9
C28MF	10/28/09	Pit	pit bottom	13.45	2.05	11.4	0.001	0.0012	ND	ND	ND	0.004	0.0193	0.0335	0.01	0.0061	0.0167	ND	0.04	ND	ND	0.016	0.0093	1.71	**30.5**	**9.4**	**4**		0.06	14.6	1.2	9.6	10.3	0.0007	18.6	0.15	0.21	68.9
C28MF	10/28/09	Pit	pit spoil	420	144	276	**0.393**	0.686	0.244	3.98	ND	0.007	0.0791	0.127	0.03	**0.0394**	0.1	0.0139	0.11	0.024	0.034	0.034	0.0464	2.19	**35.4**	8.1	**7.1**		0.4	16.3	1.3	16.9	12.9	0.054	19.9	0.15	0.24	67.3

Encana Oil and Gas (USA) Inc.
Environmental Compliance Group
Parachute Field Office
143 Diamond Avenue
Parachute, CO 81635

Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

10/22/09

Technical Report for

ENCANA

C28MF Pit Clearance

Accutest Job Number: T39898

Sampling Date: 10/15/09

Report to:

EnCana
2717 Co. Rd. 215
Parachute, CO 81635
christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **62**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

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)

Sections: 1 2 3 4 5 6 7 8 9 10

Table of Contents

Sample Summary

ENCANA

Job No: T39898

C28MF Pit Clearance

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T39898-1	10/15/09	08:30	DP	10/16/09	SO	Soil	C28MF-PIT-101509
T39898-1A	10/15/09	08:30	DP	10/16/09	SO	Soil	C28MF-PIT-101509
T39898-1B	10/15/09	08:30	DP	10/16/09	SO	Soil	C28MF-PIT-101509
T39898-1C	10/15/09	08:30	DP	10/16/09	SO	Soil	C28MF-PIT-101509

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA **Job No** T39898

Site: C28MF Pit Clearance **Report Date** 10/22/2009 3:12:27 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 10/15/2009 and were received at Accutest on 10/16/2009 properly preserved, at 8.4 Deg. C and intact. These Samples received an Accutest job number of T39898. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** VZ2636

- All samples were analyzed within the recommended method holding time.
- Sample(s) T39421-2MS, T39421-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Probable cause due to matrix interference.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP13272

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T39942-1MS, T39942-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for 2-Methylnaphthalene, Naphthalene are outside control limits. Probable cause due to matrix interference.
- Sample(s) T39898-1 have surrogates outside control limits. Probable cause due to matrix interference.
- T39898-1: Internal standards are not within the advisory limits due to matrix interference. Confirmed by reanalysis.

Volatiles by GC By Method SW846 8015

Matrix SO **Batch ID:** GEE2465

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015 M

Matrix SO **Batch ID:** OP13274

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP10495

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39898-1AMS, T39898-1AMSD, T39898-1ASDL, T39898-1ADUP were used as the QC samples for metals.
- Blank Spike Recovery(s) for Boron are outside control limits.
- RPD(s) for Duplicate for Boron are outside control limits for sample MP10495-D1. RPD acceptable due to low duplicate and sample concentrations.
- MP10495-B1 for Boron: Outside laboratory control limits, biased high.

Matrix	AQ	Batch ID:	MP10496

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39898-1CDUP were used as the QC samples for metals.

Matrix	SO	Batch ID:	MP10479

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39519-15DUP, T39519-15MS, T39519-15MSD, T39519-15SDL, T39519-15DUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Silver are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Silver are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Duplicate for Selenium, Silver are outside control limits for sample MP10479-D1. RPD acceptable due to low duplicate and sample concentrations.
- RPD(s) for Serial Dilution for Arsenic, Selenium, Lead, Zinc are outside control limits for sample MP10479-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP10479-SD1 for Lead: Serial dilution indicates possible matrix interference.
- MP10479-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Matrix	SO	Batch ID:	MP10484

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39896-1DUP, T39896-1MSD, T39896-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- T39898-1B: True Total Barium.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP10488

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39898-1MS, T39898-1MSD, T39898-1DUP were used as the QC samples for metals.
- Matrix Spike Duplicate Recovery(s) for Mercury are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP10488-D1. High RPD due to possible sample nonhomogeneity.

Wet Chemistry By Method EPA 120.1

Matrix	AQ	Batch ID:	GN18431

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39876-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	MP10496

- T39898-1C for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM 2540 G

Matrix	SO	Batch ID:	GN18348

- Sample(s) T39879-1DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix	SO	Batch ID:	GN18402

- All method blanks for this batch meet method specific criteria.
- Sample(s) T39876-1DUP, T39876-1MS were used as the QC samples for Chromium, Hexavalent.
- The following samples were run outside of holding time for method SW846 3060/7196A: T39898-1

Wet Chemistry By Method SW846 6010/7196A M

Matrix	SO	Batch ID:	R19437

- The following samples were run outside of holding time for method SW846 6010/7196A M: T39898-1
- T39898-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN18392

- Sample(s) T39876-2DUP were used as the QC samples for pH.
- The following samples were run outside of holding time for method SW846 9045C: T39898-1

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
Method:	SW846 8260B	**Percent Solids:**	91.4
Project:	C28MF Pit Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z0053069.D	1	10/20/09	JL	n/a	n/a	VZ2636
Run #2							

	Initial Weight	Final Volume
Run #1	5.27 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.0	5.2	0.73	ug/kg	J
108-88-3	Toluene	ND	5.2	0.99	ug/kg	
100-41-4	Ethylbenzene	ND	5.2	0.94	ug/kg	
1330-20-7	Xylene (total)	ND	16	2.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-121%
2037-26-5	Toluene-D8	107%		76-132%
460-00-4	4-Bromofluorobenzene	108%		73-165%
17060-07-0	1,2-Dichloroethane-D4	95%		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:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	91.4
Project:	C28MF Pit Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P06680.D	1	10/20/09	GJ	10/19/09	OP13272	EP325
Run #2 [a]	P06681.D	10	10/20/09	GJ	10/19/09	OP13272	EP325

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	7.2	1.2	ug/kg	
208-96-8	Acenaphthylene	ND	7.2	2.5	ug/kg	
120-12-7	Anthracene	25.4	7.2	1.4	ug/kg	
56-55-3	Benzo(a)anthracene	271	7.2	1.2	ug/kg	
50-32-8	Benzo(a)pyrene	140	7.2	3.9	ug/kg	
205-99-2	Benzo(b)fluoranthene	567 [b]	72	38	ug/kg	
191-24-2	Benzo(g,h,i)perylene	120	7.2	7.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	105	7.2	4.7	ug/kg	
218-01-9	Chrysene	329	7.2	1.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	52.5	7.2	7.0	ug/kg	
206-44-0	Fluoranthene	286	7.2	1.6	ug/kg	
86-73-7	Fluorene	38.2	7.2	2.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	110	7.2	5.4	ug/kg	
90-12-0	1-Methylnaphthalene	16.3	7.2	1.3	ug/kg	
91-57-6	2-Methylnaphthalene	18.4	7.2	1.2	ug/kg	
91-20-3	Naphthalene	17.3	7.2	1.1	ug/kg	
85-01-8	Phenanthrene	210	7.2	1.0	ug/kg	
129-00-0	Pyrene	209	7.2	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%	177% [c]	10-127%
321-60-8	2-Fluorobiphenyl	38%	78%	11-133%
1718-51-0	Terphenyl-d14	207% [d]	185%	15-187%

(a) Internal standards are not within the advisory limits due to matrix interference. Confirmed by reanalysis.
(b) Result is from Run# 2
(c) Outside control limits due to dilution.
(d) Outside control limits due to matrix interference. Confirmed by re-analysis.

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:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
Method:	SW846 8015	**Percent Solids:**	91.4
Project:	C28MF Pit Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE048630.D	1	10/19/09	FI	n/a	n/a	GEE2465
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.18 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	10.4	5.8	0.35	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	116%		46-127%
98-08-8	aaa-Trifluorotoluene	108%		44-120%

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:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	91.4
Project:	C28MF Pit Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC215903.D	5	10/21/09	SS	10/19/09	OP13274	GCC983
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	64.3	45	15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		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: C28MF-PIT-101509
Lab Sample ID: T39898-1
Matrix: SO - Soil
Project: C28MF Pit Clearance

Date Sampled: 10/15/09
Date Received: 10/16/09
Percent Solids: 91.4

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.7	0.59	0.12	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Cadmium	0.22 B	0.30	0.059	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Chromium	12.2	0.59	0.041	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Copper	13.3	1.5	0.077	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Lead	11.4	0.59	0.24	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Mercury	0.11	0.018	0.00070	mg/kg	1	10/20/09	10/20/09	TW	SW846 7471A [2]	SW846 7471A [4]
Nickel	17.4	2.4	0.077	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Selenium	0.14 U	0.59	0.14	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Silver	0.22 B	0.59	0.047	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]
Zinc	56.0	1.2	0.24	mg/kg	1	10/16/09	10/17/09	NS	SW846 6010B [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA4343
(2) Instrument QC Batch: MA4347
(3) Prep QC Batch: MP10479
(4) Prep QC Batch: MP10488

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
		Percent Solids:	91.4
Project:	C28MF Pit Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.5 B	2.0	mg/kg	1	10/22/09 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	10.7	2.6	mg/kg	1	10/22/09 11:00	KD	SW846 6010/7196A M
Solids, Percent	91.4		%	1	10/16/09	AA	SM 2540 G
Specific Conductivity	2510	1.0	umhos/cm	1	10/22/09 13:00	KD	EPA 120.1
pH	9.1		su	1	10/20/09 14:10	EV	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1A	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
		Percent Solids:	91.4
Project:	C28MF Pit Clearance		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Boron	0.721	0.20	0.0042	mg/l	1	10/21/09	10/21/09	NS	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA4349
(2) Prep QC Batch: MP10495

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1B	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
		Percent Solids:	91.4
Project:	C28MF Pit Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	4510	52	0.16	mg/kg	5	10/19/09	10/20/09	NS	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA4345
(2) Prep QC Batch: MP10484

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1C	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
		Percent Solids:	91.4
Project:	C28MF Pit Clearance		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	493	25	0.18	mg/l	5	10/21/09	10/21/09	NS	SW846 6010B [1]	SW846 3050B [2]
Magnesium	14.1 B	25	0.039	mg/l	5	10/21/09	10/21/09	NS	SW846 6010B [1]	SW846 3050B [2]
Sodium	2930	130	3.4	mg/l	25	10/21/09	10/21/09	NS	SW846 6010B [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA4349
(2) Prep QC Batch: MP10496

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101509		
Lab Sample ID:	T39898-1C	**Date Sampled:**	10/15/09
Matrix:	SO - Soil	**Date Received:**	10/16/09
		Percent Solids:	91.4
Project:	C28MF Pit Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	35.5		ratio	1	10/21/09 15:32	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T39898

Client / Reporting Information

Company Name	Project Name / No.
EnCana Oil & Gas (USA) Inc.	C28MF Pit Clearance
Project Contact / E-Mail	**Bill to** / Invoice Attn.
Chris Hines christopher.hines@encana.com	Chris Hines
Address	**Address**
2717 County Road 215, Suite 100	
City / State / Zip	**City** / State / Zip
Parachute, CO 81635	
Phone No. / Fax No.	**Phone No.** / Fax No.
970.285.2653	
Samplers's Name	**Client Purchase Order #**
Dan Prokop	

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	H2SO4	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	see attached	LAB USE ONLY
	C28MF - Pit - 101509	10/15/2009	8:30	SO	2									X	

Turnaround Time (Business days)

- [ ] 14 Day *STANDARD*
- [ ] 5 Day *RUSH*
- [X] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results & Standard QC

Comments / Remarks

Client Needs Units In:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10/15/09 1600	1	2	10-16-9 953	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

T39898: Chain of Custody

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

CONTAMINANT OF CONCERN	CONCENTRATIONS[1]	ANALYTICAL METHOD (SW846)
Organic Compounds in Soil		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg[2]	8260B
Toluene	85 mg/kg[2]	8260B
Ethylbenzene	100 mg/kg[2]	8260B
Xylenes (total	175 mg/kg[2]	8260B
Acenaphthene	1,000 mg/kg[2]	8270C
Anthracene	1,000 mg/kg[2]	8270C
Benzo(A)anthracene	0.22 mg/kg[2]	8270C
Benzo(B)fluoranthene	0.22 mg/kg[2]	8270C
Benzo(K)fluoranthene	2.2 mg/kg[2]	8270C
Benzo(A)pyrene	0.022 mg/kg[2]	8270C
Chrysene	22 mg/kg[2]	8270C
Dibenzo(A,H)anthracene	0.022 mg/kg[2]	8270C
Fluoranthene	1,000 mg/kg[2]	8270C
Fluorene	1,000 mg/kg[2]	8270C
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg[2]	8270C
Napthalene	23 mg/kg[2]	8270C
Pyrene	1,000 mg/kg[2]	8270C
Inorganics in Soils		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12[5]	LADNR29B
pH	6-9	9045C
Metals in Soils		
Arsenic	0.39 mg/kg[2]	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg[2]	6010B
Boron (Hot Water Soluble)	2 mg/l[3]	6010B
Cadmium	70 mg/kg[3,6]	6010B
Chromium (III)	120,000 mg/kg[2]	6010B
Chromium (VI)	23 mg/kg[2,6]	6010B
Copper	3,100 mg/kg[2]	6010B
Lead (inorganic)	400 mg/kg[2]	6010B
Mercury	23 mg/kg[2]	6010B
Nickel (soluble salts)	1,600 mg/kg[2,6]	6010B
Selenium	390 mg/kg[2,6]	6010B
Silver	390 mg/kg[2]	6010BB
Zinc	23,000 mg/kg[2,6]	6010B
Liquid Hydrocarbons in Soils and Ground Water		
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 by laboratories that maintain state or national accreditation programs.
[1] COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

T39898: Chain of Custody
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SAMPLE INSPECTION FORM

Accutest Job Number: T39898 Client: Encana Oil & Gas (USA) Date/Time Received: 10-16-9 0930

# of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 8.4 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: ~~FEDEX~~ UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: _____

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [x] Temperature criteria not met
- [ ] 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

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] 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:
Melted ice

TECHNICIAN SIGNATURE/DATE: _____

INFORMATION AND SAMPLE LABELING VERIFIED BY: EC 10.16.9

CORRECTIVE ACTIONS

Client Representative Notified: Chris Hein **Date:** 10-16-9

By Accutest Representative: Sylvia Green **Via:** Phone Email

Client Instructions:

Proceed w/ analysis per Chris Hein 10/19/9

SG

i:\mwalker\form\samplemanagement

T39898: Chain of Custody
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SAMPLE RECEIPT LOG

JOB #: T39898 DATE/TIME RECEIVED: 10/16/09 0930

CLIENT: Encana Oil & Gas (USA) INITIALS: EC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	MF C28-Pit 10/15/09	—	S	LCG	1	2cc	Ø 2 3 4 5 6 7 8	<2 >12
"	"	"	"	"	"	2	VR	Ø 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
				10/16/09				1 2 3 4 5 6 7 8	<2 >12
			FF					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

Rev 8/13/01 ewp

T39898: Chain of Custody

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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

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2636-MB	Z0053059.D	1	10/20/09	JL	n/a	n/a	VZ2636

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

T39898-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-121%
2037-26-5	Toluene-D8	115%	76-132%
460-00-4	4-Bromofluorobenzene	91%	73-165%
17060-07-0	1,2-Dichloroethane-D4	97%	57-122%

Blank Spike Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2636-BS	Z0053057.D	1	10/20/09	JL	n/a	n/a	VZ2636

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

T39898-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.9	98	70-114
100-41-4	Ethylbenzene	50	51.7	103	60-119
108-88-3	Toluene	50	52.8	106	68-115
1330-20-7	Xylene (total)	150	159	106	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	70-121%
2037-26-5	Toluene-D8	104%	76-132%
460-00-4	4-Bromofluorobenzene	98%	73-165%
17060-07-0	1,2-Dichloroethane-D4	88%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T39421-2MS	Z0053064.D	1	10/20/09	JL	n/a	n/a	VZ2636
T39421-2MSD	Z0053065.D	1	10/20/09	JL	n/a	n/a	VZ2636
T39421-2	Z0053063.D	1	10/20/09	JL	n/a	n/a	VZ2636

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

T39898-1

CAS No.	Compound	T39421-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		4200	2860	68*	3220	77	12	70-114/38
100-41-4	Ethylbenzene	ND		4200	2870	68	3210	76	11	60-119/40
108-88-3	Toluene	ND		4200	3080	73	3380	80	9	68-115/38
1330-20-7	Xylene (total)	ND		12600	9090	72	10000	79	10	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T39421-2	Limits
1868-53-7	Dibromofluoromethane	97%	97%	99%	70-121%
2037-26-5	Toluene-D8	108%	105%	110%	76-132%
460-00-4	4-Bromofluorobenzene	97%	99%	95%	73-165%
17060-07-0	1,2-Dichloroethane-D4	87%	88%	95%	57-122%

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13272-MB	P06673.D	1	10/20/09	GJ	10/19/09	OP13272	EP325

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T39898-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	104%	10-127%
321-60-8	2-Fluorobiphenyl	80%	11-133%
1718-51-0	Terphenyl-d14	116%	15-187%

Blank Spike Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13272-BS	P06674.D	1	10/20/09	GJ	10/19/09	OP13272	EP325

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T39898-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	124	74	18-118
208-96-8	Acenaphthylene	167	125	75	35-125
120-12-7	Anthracene	167	132	79	24-116
56-55-3	Benzo(a)anthracene	167	162	97	32-132
50-32-8	Benzo(a)pyrene	167	149	89	36-130
205-99-2	Benzo(b)fluoranthene	167	174	104	35-134
191-24-2	Benzo(g,h,i)perylene	167	174	104	18-149
207-08-9	Benzo(k)fluoranthene	167	171	103	30-131
218-01-9	Chrysene	167	160	96	37-124
53-70-3	Dibenzo(a,h)anthracene	167	185	111	23-150
206-44-0	Fluoranthene	167	164	98	28-118
86-73-7	Fluorene	167	130	78	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	181	109	18-150
90-12-0	1-Methylnaphthalene	167	120	72	10-128
91-57-6	2-Methylnaphthalene	167	99.1	59	28-113
91-20-3	Naphthalene	167	111	67	31-106
85-01-8	Phenanthrene	167	128	77	37-112
129-00-0	Pyrene	167	167	100	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	75%	10-127%
321-60-8	2-Fluorobiphenyl	77%	11-133%
1718-51-0	Terphenyl-d14	116%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13272-MS	P06676.D	1	10/20/09	GJ	10/19/09	OP13272	EP325
OP13272-MSD	P06677.D	1	10/20/09	GJ	10/19/09	OP13272	EP325
T39942-1	P06675.D	1	10/20/09	GJ	10/19/09	OP13272	EP325

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T39898-1

CAS No.	Compound	T39942-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		188	76.0	40	57.9	31	27	10-153/80
208-96-8	Acenaphthylene	ND		188	66.8	36	50.9	27	27	10-144/71
120-12-7	Anthracene	ND		188	182	97	151	81	19	10-176/57
56-55-3	Benzo(a)anthracene	ND		188	200	106	172	92	15	10-174/73
50-32-8	Benzo(a)pyrene	ND		188	187	100	149	80	23	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		188	253	135	219	117	14	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		188	120	64	111	60	8	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		188	195	104	165	88	17	10-170/94
218-01-9	Chrysene	5.5	J	188	183	95	156	81	16	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		188	140	75	127	68	10	10-192/74
206-44-0	Fluoranthene	ND		188	218	116	185	99	16	10-141/73
86-73-7	Fluorene	ND		188	56.0	30	45.4	24	21	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		188	134	71	118	63	13	10-150/73
90-12-0	1-Methylnaphthalene	4.6	J	188	252	132	189	99	29	10-154/82
91-57-6	2-Methylnaphthalene	18.6		188	378	191*	279	140	30	10-171/75
91-20-3	Naphthalene	6.5	J	188	325	170*	246	128	28	10-138/82
85-01-8	Phenanthrene	4.5	J	188	185	96	159	83	15	10-191/77
129-00-0	Pyrene	ND		188	250	133	194	104	25	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T39942-1	Limits
4165-60-0	Nitrobenzene-d5	93%	85%	118%	10-127%
321-60-8	2-Fluorobiphenyl	32%	25%	61%	11-133%
1718-51-0	Terphenyl-d14	155%	131%	142%	15-187%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2465-MB	EE048624.D	1	10/19/09	FI	n/a	n/a	GEE2465

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

T39898-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	100%	46-127%
98-08-8	aaa-Trifluorotoluene	109%	44-120%

Blank Spike/Blank Spike Duplicate Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2465-BS	EE048620.D	1	10/19/09	FI	n/a	n/a	GEE2465
GEE2465-BSD	EE048621.D	1	10/19/09	FI	n/a	n/a	GEE2465

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

T39898-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.4	0.378	95	0.349	87	8	78-115/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	101%	98%	46-127%
98-08-8	aaa-Trifluorotoluene	114%	109%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13274-MB	CC215893.D	1	10/21/09	SS	10/19/09	OP13274	GCC983

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

T39898-1

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	81%	33-115%

Blank Spike/Blank Spike Duplicate Summary

Job Number: T39898
Account: ENCACOP ENCANA
Project: C28MF Pit Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13274-BS	CC215894.D	1	10/21/09	SS	10/21/09	OP13274	GCC983
OP13274-BSD	CC215895.D	1	10/21/09	SS	10/21/09	OP13274	GCC983

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

T39898-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	32.9	25.4	77	24.9	76	2	45-107/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	88%	87%	33-115%

Metals Analysis

QC Data Summaries

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10479
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/16/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.045	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.026	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.035	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.022	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.018	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	-0.077	<0.50
Silver	0.50	.043	.04	-0.013	<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	0.48	<1.0

Associated samples MP10479: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10479
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/16/09					10/16/09	
Metal	T39519-15 Original	DUP	RPD	QC Limits	T39519-15 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	2.7	2.6	3.8	0-20	2.7	27.9	28.1	89.7	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium	0.19	0.18	5.4	0-20	0.19	26.0	28.1	91.9	80-120
Calcium									
Chromium	7.4	7.4	0.0	0-20	7.4	33.3	28.1	92.2	80-120
Cobalt									
Copper	6.1	6.2	1.6	0-20	6.1	33.1	28.1	96.2	80-120
Iron									
Lead	17.2	16.5	4.2	0-20	17.2	44.0	28.1	95.4	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	5.1	5.2	1.9	0-20	5.1	31.1	28.1	92.6	80-120
Potassium									
Selenium	0.32	0.0	200.0(a)	0-20	0.32	24.2	28.1	85.0	80-120
Silver	0.0	0.062	200.0(a)	0-20	0.0	36.6	28.1	130.3N	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	24.2	23.1	4.7	0-20	24.2	50.4	28.1	93.3	80-120

Associated samples MP10479: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10479
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/16/09

Metal	T39519-15 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	2.7	27.4	27.5	89.9	1.8	20
Barium	anr					
Beryllium						
Boron						
Cadmium	0.19	25.8	27.5	93.2	0.8	20
Calcium						
Chromium	7.4	33.1	27.5	93.6	0.6	20
Cobalt						
Copper	6.1	33.3	27.5	99.0	0.6	20
Iron						
Lead	17.2	42.4	27.5	91.7	3.7	20
Magnesium						
Manganese						
Molybdenum						
Nickel	5.1	31.1	27.5	94.7	0.0	20
Potassium						
Selenium	0.32	24.2	27.5	86.9	0.0	20
Silver	0.0	36.8	27.5	134.0N	0.5	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	24.2	49.7	27.5	92.8	1.4	20

Associated samples MP10479: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10479
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/16/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	145	158	91.8	82-118
Barium	anr			
Beryllium				
Boron				
Cadmium	166	187	88.8	82-118
Calcium				
Chromium	79.9	89.5	89.3	79-121
Cobalt				
Copper	120	129	93.0	84-117
Iron				
Lead	153	172	89.0	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	90.7	99	91.6	81-119
Potassium				
Selenium	130	148	87.8	78-121
Silver	61.4	66	93.0	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	344	394	87.3	80-119

Associated samples MP10479: T39898-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10479
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/16/09

Metal	T39519-15 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	38.7	43.4	12.2 (a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	2.66	2.70	1.5	0-10
Calcium				
Chromium	104	110	5.3	0-10
Cobalt				
Copper	86.9	87.2	0.4	0-10
Iron				
Lead	243	269	10.7*(b)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	72.3	76.3	5.5	0-10
Potassium				
Selenium	4.53	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	343	392	14.4*(b)	0-10

Associated samples MP10479: T39898-1

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).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10484
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/09

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	0.17	<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 MP10484: T39898-1B

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10484
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/19/09					10/19/09	
Metal	T39896-1 Original	DUP	RPD	QC Limits	T39896-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	9670	7780	2.7	0-20	9670	8110	19.4	619.2(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 MP10484: T39898-1B

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10484 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/19/09

Metal	T39896-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	9670	7910	19.4	-411.9(a	2.5	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 MP10484: T39898-1B

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10484
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	20.4	20	102.0	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 MP10484: T39898-1B

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10484
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/19/09

Metal	T39896-1 Original	SDL 10:50%DIF	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	165000	178000 8.2	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 MP10484: T39898-1B

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10488
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/20/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0016	<0.017

Associated samples MP10488: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10488
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date:			10/20/09					10/20/09	
Metal	T39898-1 Original	DUP	RPD	QC Limits	T39898-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.11	0.031	112.1*(a	0-20	0.11	0.33	0.271	81.2	75-125

Associated samples MP10488: T39898-1

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) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10488
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/20/09

Metal	T39898-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.11	0.30	0.258	73.7N	9.5	

Associated samples MP10488: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10488
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/20/09

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	9.0	7.34	122.6	72-128

Associated samples MP10488: T39898-1

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10495
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/21/09

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	58.1	<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 MP10495: T39898-1A

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10495
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/21/09 10/21/09

Metal	T39898-1A Original	DUP	RPD	QC Limits	T39898-1A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	721	570	23.4 (a)	0-20	721	2820	1000	108.4	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 MP10495: T39898-1A

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10495
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/21/09

Metal	T39898-1A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	721	2880	1000	109.8	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 MP10495: T39898-1A

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10495
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/21/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2460	1000	122.8*(a	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 MP10495: T39898-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Outside laboratory control limits, biased high.

SERIAL DILUTION RESULTS SUMMARY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10495
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/21/09

Metal	T39898-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	361	343	5.0	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 MP10495: T39898-1A

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10496
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/21/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	92.7	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	22.9	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	203	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10496: T39898-1C

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

QC Batch ID: MP10496
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/21/09

Metal	T39898-1C Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	493000	445000	10.2	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	14100	13100	7.4	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	2820000	2690000	4.7	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10496: T39898-1C

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

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: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18402	2.0	<2.0	mg/kg	40	40.3	100.8	80-120%
Specific Conductivity	GN18431	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN18402: T39898-1
Batch GN18431: T39898-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18402	T39876-1	mg/kg	<2.0	<2.0	2.1	0-20%
Solids, Percent	GN18348	T39879-1	%	88.7	88.5	0.2	0-5%
Specific Conductivity	GN18431	T39876-1	umhos/cm	1890	1890	0.0	0-20%
pH	GN18392	T39876-2	su	9.4	9.4	0.0	0-20%

Associated Samples:
Batch GN18348: T39898-1
Batch GN18392: T39898-1
Batch GN18402: T39898-1
Batch GN18431: T39898-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T39898
Account: ENCACOP - ENCANA
Project: C28MF Pit Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18402	T39876-1	mg/kg	<2.0	40	39.5	97.5	75-125%

Associated Samples:
Batch GN18402: T39898-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Technical Report for

ENCANA

EnCana Oil & Gas (USA) Inc.

C28MF Pit Clearance

Accutest Job Number: T40356

Sampling Date: 10/19/09

Report to:

EnCana
2717 Co. Rd. 215
Parachute, CO 81635
brett.middleton@encana.com; christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **64**

ACCREDITED IN ACCORDANCE WITH nelac

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)

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Sections: 1 2 3 4 5 6 7 8 9 10

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Sample Summary

ENCANA

Job No: T40356

EnCana Oil & Gas (USA) Inc.
Project No: C28MF Pit Clearance

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T40356-1	10/19/09	15:00	BM	10/22/09	SO	Soil	C28MF-PIT-101909
T40356-1A	10/19/09	15:00	BM	10/22/09	SO	Soil	C28MF-PIT-101909
T40356-1B	10/19/09	15:00	BM	10/22/09	SO	Soil	C28MF-PIT-101909
T40356-1C	10/19/09	15:00	BM	10/22/09	SO	Soil	C28MF-PIT-101909

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA **Job No** T40356

Site: EnCana Oil & Gas (USA) Inc. **Report Date** 11/5/2009 5:18:43 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 10/19/2009 and were received at Accutest on 10/22/2009 properly preserved, at 2.6 Deg. C and intact. These Samples received an Accutest job number of T40356. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** VX330

- All samples were analyzed within the recommended method holding time.
- Sample(s) T40438-1MS, T40438-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP13382

- All samples were analyzed within the recommended method holding time.
- Sample(s) T41328-1MS, T41328-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- T40356-1: Internal standards are not within the advisory limits due to matrix interference. Confirmed by reanalysis.
- T40356-1: Internal standards are not within the advisory limits due to matrix interference.

Volatiles by GC By Method SW846 8015

Matrix SO **Batch ID:** GEE2474

- All samples were analyzed within the recommended method holding time.
- Sample(s) T40398-1MS, T40398-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015 M

Matrix SO **Batch ID:** OP13313

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T40106-1MS, T40106-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for TPH (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for MSD for TPH (C10-C28) are outside control limits for sample OP13313-MSD. Probable cause due to sample homogeneity.
- Sample(s) OP13313-MSD have surrogates outside control limits. Probable cause due to matrix interference.

Metals By Method SW846 6010B

Matrix AQ **Batch ID:** MP10526

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39878-4AMSD, T39878-4ADUP, T39878-4ASDL, T39878-4AMS were used as the QC samples for metals.
- RPD(s) for Duplicate for Boron are outside control limits for sample MP10526-D1. High RPD due to possible matrix interference.
- RPD(s) for Serial Dilution for Boron are outside control limits for sample MP10526-SD1. Probable cause due to sample homogeneity.
- MP10526-SD1 for Boron: Serial dilution indicates possible matrix interference.
- MP10526-MS for Boron: Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Matrix AQ **Batch ID:** MP10545

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1CDUP were used as the QC samples for metals.

Matrix SO **Batch ID:** MP10525

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39942-1BDUP, T39942-1BMSD, T39942-1BSDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Barium are outside control limits for sample MP10525-SD1. Probable cause due to sample homogeneity.
- MP10525-SD1 for Barium: Serial dilution indicates possible matrix interference.

Matrix SO **Batch ID:** MP10531

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39940-1DUP, T39940-1MS, T39940-1MSD, T39940-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Silver are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Silver are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Serial Dilution for Cadmium, Silver, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP10531-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP10531-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- MP10531-SD1 for Lead: Serial dilution indicates possible matrix interference.
- MP10531-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP10531-SD1 for Nickel: Serial dilution indicates possible matrix interference.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP10557

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39940-1MS, T39940-1MSD, T39940-1DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP10557-D1. High RPD due to possible sample nonhomogeneity.

Wet Chemistry By Method EPA 120.1

Matrix	AQ	Batch ID:	GN18499

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	MP10545

- T40356-1C for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM 2540 G

Matrix	SO	Batch ID:	GN18439

- Sample(s) T40117-1DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix	SO	Batch ID:	GN18489

- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1DUP, T40355-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M

Matrix	SO	Batch ID:	R19511

- T40356-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN18501

- Sample(s) T40688-2DUP were used as the QC samples for pH.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
Method:	SW846 8260B	**Percent Solids:**	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0056447.D	1	10/26/09	JL	n/a	n/a	VX330
Run #2							

	Initial Weight	Final Volume
Run #1	5.10 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.3	0.74	ug/kg	
108-88-3	Toluene	2.8	5.3	1.0	ug/kg	J
100-41-4	Ethylbenzene	ND	5.3	0.96	ug/kg	
1330-20-7	Xylene (total)	ND	16	2.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		70-121%
2037-26-5	Toluene-D8	95%		76-132%
460-00-4	4-Bromofluorobenzene	120%		73-165%
17060-07-0	1,2-Dichloroethane-D4	75%		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:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P07044.D	1	11/04/09	GJ	10/27/09	OP13331	EP339
Run #2 [b]	P07033.D	10	11/04/09	GJ	10/27/09	OP13331	EP339

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	7.2	1.2	ug/kg	
208-96-8	Acenaphthylene	ND	7.2	2.5	ug/kg	
120-12-7	Anthracene	12.9	7.2	1.4	ug/kg	
56-55-3	Benzo(a)anthracene	123	7.2	1.2	ug/kg	
50-32-8	Benzo(a)pyrene	54.8	7.2	3.9	ug/kg	
205-99-2	Benzo(b)fluoranthene	195	7.2	3.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	68.4	7.2	7.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	43.1	7.2	4.7	ug/kg	
218-01-9	Chrysene	156	7.2	1.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	31.3	7.2	7.0	ug/kg	
206-44-0	Fluoranthene	174	7.2	1.6	ug/kg	
86-73-7	Fluorene	137	7.2	2.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	57.6	7.2	5.4	ug/kg	
90-12-0	1-Methylnaphthalene	ND	7.2	1.3	ug/kg	
91-57-6	2-Methylnaphthalene	ND	7.2	1.2	ug/kg	
91-20-3	Naphthalene	355	7.2	1.1	ug/kg	
85-01-8	Phenanthrene	99.8	7.2	1.0	ug/kg	
129-00-0	Pyrene	67.9	7.2	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	116%	85%	10-127%
321-60-8	2-Fluorobiphenyl	60%	114%	11-133%
1718-51-0	Terphenyl-d14	106%	96%	15-187%

(a) Internal standards are not within the advisory limits due to matrix interference. Confirmed by reanalysis.
(b) Internal standards are not within the advisory limits due to matrix interference.

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:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
Method:	SW846 8015	**Percent Solids:**	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE048881.D	1	10/27/09	FI	n/a	n/a	GEE2474
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.22 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	17.3	5.6	0.34	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	106%		46-127%
98-08-8	aaa-Trifluorotoluene	112%		44-120%

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:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC216162.D	5	11/01/09	SS	10/22/09	OP13313	GCC994
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	879	44	15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	104%		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: C28MF-PIT-101909
Lab Sample ID: T40356-1
Matrix: SO - Soil
Project: EnCana Oil & Gas (USA) Inc.

Date Sampled: 10/19/09
Date Received: 10/22/09
Percent Solids: 92.2

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.7	0.58	0.12	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Cadmium	0.97	0.29	0.058	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Chromium	16.7	0.58	0.040	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Copper	15.3	1.4	0.075	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Lead	12.2	0.58	0.23	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Mercury	0.037	0.016	0.00063	mg/kg	1	10/30/09	10/30/09	TW	SW846 7471A [2]	SW846 7471A [4]
Nickel	17.6	2.3	0.075	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Selenium	0.15 B	0.58	0.14	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Silver	0.21 B	0.58	0.046	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]
Zinc	61.9	1.2	0.23	mg/kg	1	10/27/09	10/28/09	NS	SW846 6010B [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA4359
(2) Instrument QC Batch: MA4364
(3) Prep QC Batch: MP10531
(4) Prep QC Batch: MP10557

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
		Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.3 B	2.0	mg/kg	1	10/29/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	15.4	2.6	mg/kg	1	10/29/09 12:00	KD	SW846 6010/7196A M
Solids, Percent	92.2		%	1	10/23/09	AA	SM 2540 G
Specific Conductivity	2530	1.0	umhos/cm	1	10/29/09 15:00	KD	EPA 120.1
pH	8.9		su	1	10/29/09 11:00	EV	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1A	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
		Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Boron	0.880	0.20	0.0042	mg/l	1	10/26/09	10/28/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4359
(2) Prep QC Batch: MP10526

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1B	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
		Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	3520	100	0.31	mg/kg	10	10/27/09	10/28/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4360
(2) Prep QC Batch: MP10525

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID: C28MF-PIT-101909
Lab Sample ID: T40356-1C
Matrix: SO - Soil
Project: EnCana Oil & Gas (USA) Inc.

Date Sampled: 10/19/09
Date Received: 10/22/09
Percent Solids: 92.2

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	431	25	0.18	mg/l	5	10/28/09	10/29/09	NS	SW846 6010B [1]	LADNR 29B [2]
Magnesium	15.3 B	25	0.039	mg/l	5	10/28/09	10/29/09	NS	SW846 6010B [1]	LADNR 29B [2]
Sodium	2300	130	3.4	mg/l	25	10/28/09	10/30/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4362
(2) Prep QC Batch: MP10545

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-101909		
Lab Sample ID:	T40356-1C	**Date Sampled:**	10/19/09
Matrix:	SO - Soil	**Date Received:**	10/22/09
		Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	29.6		ratio	1	10/30/09 08:54	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T40356

Client / Reporting Information

Company Name: EnCana Oil & Gas (USA) Inc.

Project Contact: Chris Hines — E-Mail: christopher.hines@encana.com

Address: 2717 County Road 215, Suite 100

City: Parachute — State: CO — Zip: 81635

Phone No.: 970.285.2653 — Fax No.:

Samplers's Name: Brett Middleton

Project Information

Project Name / No.: C28MF Pit Clearance

Bill to: Chris Hines — Invoice Attn.:

Address:

City — State — Zip

Phone No. — Fax No.

Client Purchase Order #

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	H2SO4	HNO3	ENCORE	NaHSO4	MEOH	NONE	see attached	LAB USE ONLY
	C28MF - Pit - 101909	10/19/2009	15:00	SO	6								X	

Turnaround Time (Business days)

- [X] 14 Day *STANDARD*
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results & Standard QC

Comments / Remarks

Client Needs Units In:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10/21/09	###### 1600	1 FED-EX	2 FED-EX	10/22/09 9:30	2 T Clarnet
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

T40356: Chain of Custody

Page 1 of 4

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

CONTAMINANT OF CONCERN	CONCENTRATIONS[1]	ANALYTICAL METHOD (SW846)
Organic Compounds in Soil		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg[2]	8260B
Toluene	85 mg/kg[2]	8260B
Ethylbenzene	100 mg/kg[2]	8260B
Xylenes (total	175 mg/kg[2]	8260B
Acenaphthene	1,000 mg/kg[2]	8270C
Anthracene	1,000 mg/kg[2]	8270C
Benzo(A)anthracene	0.22 mg/kg[2]	8270C
Benzo(B)fluoranthene	0.22 mg/kg[2]	8270C
Benzo(K)fluoranthene	2.2 mg/kg[2]	8270C
Benzo(A)pyrene	0.022 mg/kg[2]	8270C
Chrysene	22 mg/kg[2]	8270C
Dibenzo(A,H)anthracene	0.022 mg/kg[2]	8270C
Fluoranthene	1,000 mg/kg[2]	8270C
Fluorene	1,000 mg/kg[2]	8270C
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg[2]	8270C
Napthalene	23 mg/kg[2]	8270C
Pyrene	1,000 mg/kg[2]	8270C
Inorganics in Soils		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12[5]	LADNR29B
pH	6-9	9045C
Metals in Soils		
Arsenic	0.39 mg/kg[2]	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg[2]	6010B
Boron (Hot Water Soluble)	2 mg/l[3]	6010B
Cadmium	70 mg/kg[3,6]	6010B
Chromium (III)	120,000 mg/kg[2]	6010B
Chromium (VI)	23 mg/kg[2,6]	6010B
Copper	3,100 mg/kg[3]	6010B
Lead (inorganic)	400 mg/kg[2]	6010B
Mercury	23 mg/kg[2]	6010B
Nickel (soluble salts)	1,600 mg/kg[2,6]	6010B
Selenium	390 mg/kg[2,6]	6010B
Silver	390 mg/kg[2]	6010BB
Zinc	23,000 mg/kg[2,6]	6010B
Liquid Hydrocarbons in Soils and Ground Water		
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 by laboratories that maintain state or national accreditation programs.
[1] COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

T40356: Chain of Custody
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SAMPLE INSPECTION FORM

Accutest Job Number: T40356 Client: ENCANA OIL & GAS Date/Time Received: 10/22/09 9:30

# of Coolers Received: 1 Thermometer #: IR1 Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 2.6 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: 8706 6705 6339

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] 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

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [X] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] 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: ID on Bottle DOESN'T match C.O.C (Time)

TECHNICIAN SIGNATURE/DATE: TClark 10/22/09

INFORMATION AND SAMPLE LABELING VERIFIED BY: QC 10-22-09

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: Sylvia Garza **Via:** Phone Email

Client Instructions: ID shortened - okay?

i:\mwalker\form\samplemanagement

SAMPLE RECEIPT LOG

JOB #: T40356 DATE/TIME RECEIVED: 10/22/09 9:30

CLIENT: ENCANA OIL & GAS INITIALS: TC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	C 28 MF-Pit 101909	10/19/09 —	SOLID	8 oz	1	2DD	① 2 3 4 5 6 7 8	<2 >12
↓	↓	↓	↓	↓	↓	2	↓	① 2 3 4 5 6 7 8	<2 >12
						3		① 2 3 4 5 6 7 8	<2 >12
						4		① 2 3 4 5 6 7 8	<2 >12
						5	↓	① 2 3 4 5 6 7 8	<2 >12
						6	VR	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
				10/22/09				1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
			TC					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

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T40356: Chain of Custody
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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

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX330-MB	X0056433.D	1	10/26/09	JL	n/a	n/a	VX330

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

T40356-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	70-121%
2037-26-5	Toluene-D8	97%	76-132%
460-00-4	4-Bromofluorobenzene	94%	73-165%
17060-07-0	1,2-Dichloroethane-D4	93%	57-122%

Blank Spike Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX330-BS	X0056431.D	1	10/26/09	JL	n/a	n/a	VX330

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

T40356-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	43.7	87	70-114
100-41-4	Ethylbenzene	50	47.9	96	60-119
108-88-3	Toluene	50	47.7	95	68-115
1330-20-7	Xylene (total)	150	148	99	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	93%	70-121%
2037-26-5	Toluene-D8	104%	76-132%
460-00-4	4-Bromofluorobenzene	89%	73-165%
17060-07-0	1,2-Dichloroethane-D4	88%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40438-1MS	X0056440.D	2	10/26/09	JL	n/a	n/a	VX330
T40438-1MSD	X0056441.D	2	10/26/09	JL	n/a	n/a	VX330
T40438-1	X0056436.D	1	10/26/09	JL	n/a	n/a	VX330
T40438-1	X0056439.D	2	10/26/09	JL	n/a	n/a	VX330

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

T40356-1

CAS No.	Compound	T40438-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	310 U		6110	4790	78	4660	76	3	70-114/38
100-41-4	Ethylbenzene	11900 [a]		6110	17500	92	16400	74	6	60-119/40
108-88-3	Toluene	9250		6110	14500	86	13700	73	6	68-115/38
1330-20-7	Xylene (total)	52500 [a]		18300	69600	93	65700	72	6	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T40438-1	T40438-1	Limits
1868-53-7	Dibromofluoromethane	90%	88%	87%	87%	70-121%
2037-26-5	Toluene-D8	98%	96%	93%	94%	76-132%
460-00-4	4-Bromofluorobenzene	94%	90%	96%	90%	73-165%
17060-07-0	1,2-Dichloroethane-D4	72%	71%	76%	70%	57-122%

(a) Result is from Run #2.

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13331-MB	H35629.D	1	10/27/09	SC	10/27/09	OP13331	EH1922

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40356-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	126%	10-127%
321-60-8	2-Fluorobiphenyl	90%	11-133%
1718-51-0	Terphenyl-d14	87%	15-187%

Blank Spike Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13331-BS	H35630.D	1	10/27/09	SC	10/27/09	OP13331	EH1922

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40356-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	137	82	18-118
208-96-8	Acenaphthylene	167	90.4	54	35-125
120-12-7	Anthracene	167	143	86	24-116
56-55-3	Benzo(a)anthracene	167	105	63	32-132
50-32-8	Benzo(a)pyrene	167	124	74	36-130
205-99-2	Benzo(b)fluoranthene	167	177	106	35-134
191-24-2	Benzo(g,h,i)perylene	167	136	82	18-149
207-08-9	Benzo(k)fluoranthene	167	148	89	30-131
218-01-9	Chrysene	167	153	92	37-124
53-70-3	Dibenzo(a,h)anthracene	167	134	80	23-150
206-44-0	Fluoranthene	167	153	92	28-118
86-73-7	Fluorene	167	118	71	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	144	86	18-150
90-12-0	1-Methylnaphthalene	167	129	77	10-128
91-57-6	2-Methylnaphthalene	167	126	76	28-113
91-20-3	Naphthalene	167	145	87	31-106
85-01-8	Phenanthrene	167	138	83	37-112
129-00-0	Pyrene	167	120	72	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	126%	10-127%
321-60-8	2-Fluorobiphenyl	99%	11-133%
1718-51-0	Terphenyl-d14	91%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13331-MS	H35648.D	1	10/27/09	SC	10/27/09	OP13331	EH1922
OP13331-MSD	H35649.D	1	10/27/09	SC	10/27/09	OP13331	EH1922
T40398-3 [a]	H35638.D	1	10/27/09	SC	10/27/09	OP13331	EH1922
T40398-3 [a]	H35639.D	5	10/27/09	SC	10/27/09	OP13331	EH1922

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40356-1

CAS No.	Compound	T40398-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	18.8		205	265	120	249	112	6	10-153/80
208-96-8	Acenaphthylene	ND		205	122	60	121	59	1	10-144/71
120-12-7	Anthracene	85.4		205	429	168	395	151	8	10-176/57
56-55-3	Benzo(a)anthracene	665 [c]		205	1060	193* [b]	1130	227* [b]	6	10-174/73
50-32-8	Benzo(a)pyrene	563 [c]		205	859	144	838	134	2	10-182/74
205-99-2	Benzo(b)fluoranthene	1120 [c]		205	2150	502* [b]	2250	551* [b]	5	10-188/86
191-24-2	Benzo(g,h,i)perylene	613 [c]		205	1130	252* [b]	1080	228* [b]	5	10-150/62
207-08-9	Benzo(k)fluoranthene	224		205	447	109	346	60	25	10-170/94
218-01-9	Chrysene	249		205	555	149	559	151	1	10-165/73
53-70-3	Dibenzo(a,h)anthracene	86.4		205	419	162	418	162	0	10-192/74
206-44-0	Fluoranthene	1290 [c]		205	2590	634* [b]	2420	551* [b]	7	10-141/73
86-73-7	Fluorene	37.8		205	193	76	202	80	5	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	343		205	890	267*	882	263*	1	10-150/73
90-12-0	1-Methylnaphthalene	8.8		205	229	107	222	104	3	10-154/82
91-57-6	2-Methylnaphthalene	12.2		205	230	106	218	100	5	10-171/75
91-20-3	Naphthalene	10.1		205	249	117	236	110	5	10-138/82
85-01-8	Phenanthrene	374		205	1140	374*	1190	398*	4	10-191/77
129-00-0	Pyrene	646 [c]		205	1520	426* [b]	1660	495* [b]	9	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T40398-3	T40398-3	Limits
4165-60-0	Nitrobenzene-d5	131%*	127%	98%	93%	10-127%
321-60-8	2-Fluorobiphenyl	88%	89%	66%	67%	11-133%
1718-51-0	Terphenyl-d14	133%	152%	95%	131%	15-187%

(a) Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Result is from Run #2.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2474-MB	EE048858.D	1	10/26/09	FI	n/a	n/a	GEE2474

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

T40356-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.10	0.0060	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	68%	46-127%
98-08-8	aaa-Trifluorotoluene	111%	44-120%

Blank Spike Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2474-BS	EE048853.D	1	10/26/09	FI	n/a	n/a	GEE2474

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

T40356-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.351	88	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	83%	46-127%
98-08-8	aaa-Trifluorotoluene	118%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40398-1MS	EE048885.D	1	10/27/09	FI	n/a	n/a	GEE2474
T40398-1MSD	EE048886.D	1	10/27/09	FI	n/a	n/a	GEE2474
T40398-1	EE048868.D	1	10/26/09	FI	n/a	n/a	GEE2474

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

T40356-1

CAS No.	Compound	T40398-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		99.9	97.9	98	93.3	93	5	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T40398-1	Limits
460-00-4	4-Bromofluorobenzene	92%	89%	68%	46-127%
98-08-8	aaa-Trifluorotoluene	116%	118%	113%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-MB	CC216076.D	1	10/29/09	SS	10/22/09	OP13313	GCC991

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

T40356-1

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	70%	33-115%

Blank Spike Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-BS	CC216077.D	1	10/29/09	SS	10/22/09	OP13313	GCC991

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

T40356-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	32.9	14.7	45	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	34%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40356
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-MS	CC216078.D	5	10/29/09	SS	10/22/09	OP13313	GCC991
OP13313-MSD	CC216079.D	1	10/29/09	SS	10/22/09	OP13313	GCC991
T40106-1	CC216083.D	50	10/29/09	SS	10/23/09	OP13313	GCC991

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

T40356-1

CAS No.	Compound	T40106-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	3510		34.4	4600	3169* [a]	417	-9130*	[a]167*	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T40106-1	Limits
84-15-1	o-Terphenyl	68%	0%*	0%* [b]	33-115%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Outside control limits due to dilution.

Metals Analysis

QC Data Summaries

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/27/09

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	0.12	<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 MP10525: T40356-1B

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/27/09					10/27/09	
Metal	T39942-1B Original	DUP	RPD	QC Limits	T39942-1B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	395	393	0.5	0-20	395	367	21	-133.1(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 MP10525: T40356-1B

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/27/09

Metal	T39942-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	395	408	22.1	58.9 (a)	10.6	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 MP10525: T40356-1B

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/27/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	19.1	20	95.5	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 MP10525: T40356-1B

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/27/09

Metal	T39942-1B Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	6950	8330	19.8*(a)	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 MP10525: T40356-1B

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/26/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1	-8.5	<100
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35		
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8		
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130		
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10526: T40356-1A

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:			10/26/09					10/26/09	
Metal	T39878-4A Original	DUP	RPD	QC Limits	T39878-4A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	461	260	55.8*(a)	0-20	461	1130	100	89.5 (b)	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 MP10526: T40356-1A

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) High RPD due to possible matrix interference.
(b) 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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526 Methods: SW846 6010B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/26/09

Metal	T39878-4A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	461	1090	100	85.9 (a)	3.6	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10526: T40356-1A

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/26/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1050	100	105.5	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 MP10526: T40356-1A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/26/09

Metal	T39878-4A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	231	192	16.8*(a)	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 MP10526: T40356-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/27/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.035	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0050	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.0030	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.0010	<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	-0.0050	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.017	<0.50
Silver	0.50	.043	.04	0.0010	<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	-0.00050	<1.0

Associated samples MP10531: T40356-1

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/27/09					10/27/09	
Metal	T39940-1 Original	DUP	RPD	QC Limits	T39940-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	4.5	4.5	0.0	0-20	4.5	27.3	25.2	90.3	80-120
Barium	anr								
Beryllium	anr								
Boron									
Cadmium	0.25	0.24	4.1	0-20	0.25	21.9	25.2	85.8	80-120
Calcium									
Chromium	16.2	15.9	1.9	0-20	16.2	39.3	25.2	91.5	80-120
Cobalt									
Copper	21.4	22.4	4.6	0-20	21.4	47.0	25.2	101.4	80-120
Iron									
Lead	13.6	14.5	6.4	0-20	13.6	36.2	25.2	89.5	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	11.3	11.7	3.5	0-20	11.3	34.6	25.2	92.3	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	21.9	25.2	86.8	80-120
Silver	0.12	0.12	0.0	0-20	0.12	13.3	25.2	52.2N	80-120
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	56.3	57.6	2.3	0-20	56.3	85.3	25.2	114.9	80-120

Associated samples MP10531: T40356-1

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10531 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/27/09

Metal	T39940-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	4.5	27.3	25.3	90.0	0.0	20
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	0.25	22.1	25.3	86.2	0.9	20
Calcium						
Chromium	16.2	39.1	25.3	90.3	0.5	20
Cobalt						
Copper	21.4	48.9	25.3	108.5	4.0	20
Iron						
Lead	13.6	37.2	25.3	93.1	2.7	20
Magnesium						
Manganese						
Molybdenum						
Nickel	11.3	34.3	25.3	90.7	0.9	20
Potassium						
Selenium	0.0	22.0	25.3	86.8	0.5	20
Silver	0.12	13.5	25.3	52.8N	1.5	20
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	56.3	83.1	25.3	105.7	2.6	20

Associated samples MP10531: T40356-1

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/27/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	148	158	93.7	82-118
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	167	187	89.3	82-118
Calcium				
Chromium	83.6	89.5	93.4	79-121
Cobalt				
Copper	130	129	100.8	84-117
Iron				
Lead	175	172	101.7	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	91.2	99	92.1	81-119
Potassium				
Selenium	134	148	90.5	78-121
Silver	62.2	66	94.2	66-134
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	351	394	89.1	80-119

Associated samples MP10531: T40356-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10531
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/27/09

Metal	T39940-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	67.2	73.2	8.9	0-10
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	3.68	2.67	27.4 (a)	0-10
Calcium				
Chromium	240	283	17.9*(b)	0-10
Cobalt				
Copper	316	345	9.1	0-10
Iron				
Lead	201	239	18.9*(b)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	167	198	18.9*(b)	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	1.76	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	834	995	19.3*(b)	0-10

Associated samples MP10531: T40356-1

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).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10545
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/28/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	138	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	44.1	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	312	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10545: T40356-1C

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10545
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/28/09

Metal	T40355-1C Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	155000	134000	14.5	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	28700	31900	10.6	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	2000000	1980000	1.0	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10545: T40356-1C

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10557
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/30/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0024	<0.017

Associated samples MP10557: T40356-1

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10557
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/30/09 10/30/09

Metal	T39940-1 Original	DUP	RPD	QC Limits	T39940-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.041	0.065	45.3*(a)	0-20	0.041	0.35	0.259	119.3	75-125

Associated samples MP10557: T40356-1

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) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10557 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/30/09

Metal	T39940-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.041	0.36	0.266	119.9	2.8	

Associated samples MP10557: T40356-1

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10557
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/30/09

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	8.8	7.34	119.9	72-128

Associated samples MP10557: T40356-1

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

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: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18489	2.0	<2.0	mg/kg	40	39.5	98.7	80-120%
Specific Conductivity	GN18499	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN18489: T40356-1
Batch GN18499: T40356-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18489	T40355-1	mg/kg	1.6 B	<2.0	8.5	0-20%
Solids, Percent	GN18439	T40117-1	%	79.8	78.9	1.1	0-5%
Specific Conductivity	GN18499	T40355-1	umhos/cm	1730	1730	0.1	0-20%
pH	GN18501	T40688-2	su	8.3	8.3	0.0	0-20%

Associated Samples:
Batch GN18439: T40356-1
Batch GN18489: T40356-1
Batch GN18499: T40356-1
Batch GN18501: T40356-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40356
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18489	T40355-1	mg/kg	1.6 B	40	36.4	86.9	75-125%

Associated Samples:
Batch GN18489: T40356-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

11/06/09

Technical Report for

ENCANA

C28MF Pit Bottom

Accutest Job Number: T40779

Sampling Date: 10/28/09

Report to:

EnCana
2717 Co. Rd. 215
Parachute, CO 81635
christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **65**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

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)

Sections: 1 2 3 4 5 6 7 8 9 10

Table of Contents

Accutest Laboratories

Sample Summary

ENCANA

Job No: T40779

C28MF Pit Bottom

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T40779-1	10/28/09	10:15	CH	10/29/09	SO	Soil	C28MF-PIT-102809
T40779-1A	10/28/09	10:15	CH	10/29/09	SO	Soil	C28MF-PIT-102809
T40779-1B	10/28/09	10:15	CH	10/29/09	SO	Soil	C28MF-PIT-102809
T40779-1C	10/28/09	10:15	CH	10/29/09	SO	Soil	C28MF-PIT-102809

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA **Job No** T40779

Site: C28MF Pit Bottom **Report Date** 11/5/2009 5:22:39 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 10/28/2009 and were received at Accutest on 10/29/2009 properly preserved, at 3.8 Deg. C and intact. These Samples received an Accutest job number of T40779. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** VX342

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40688-1MS, T40688-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Benzene, Ethylbenzene, Toluene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Benzene, Ethylbenzene, Toluene, Xylene (total) are outside control limits. Probable cause due to matrix interference.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP13348

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T40779-1MS, T40779-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015

Matrix SO **Batch ID:** GEE2481

- All samples were analyzed within the recommended method holding time.
- Sample(s) T40689-2MS, T40689-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015 M

Matrix SO **Batch ID:** OP13391

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T41328-1MS, T41328-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for TPH (C10-C28) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for TPH (C10-C28) are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for TPH (C10-C28) are outside control limits for sample OP13391-MSD. Probable cause due to sample homogeneity.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP10570

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39947-3ADUP, T39947-3AMS, T39947-3AMSD, T39947-3ASDL were used as the QC samples for metals.

Matrix	AQ	Batch ID:	MP10587

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T37853-2CDUP, T37853-2CSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Sodium are outside control limits for sample MP10587-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix	SO	Batch ID:	MP10560

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40398-3RDUP, T40398-3RMS, T40398-3RMSD, T40398-3RSDL, T40398-3RDUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Arsenic, Chromium, Silver are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Chromium, Silver are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Copper, Lead, Nickel, Zinc are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Duplicate for Copper are outside control limits for sample MP10560-D1. High RPD due to possible sample nonhomogeneity.
- RPD(s) for MSD for Arsenic, Copper, Lead, Nickel, Zinc are outside control limits for sample MP10560-S2. High RPD due to possible matrix interference.
- RPD(s) for Serial Dilution for Cadmium, Silver, Zinc are outside control limits for sample MP10560-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix	SO	Batch ID:	MP10569

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40780-1BDUP, T40780-1BMSD, T40780-1BSDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP10588

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40779-1MS, T40779-1MSD, T40779-1DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP10588-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method EPA 120.1

Matrix	AQ	Batch ID:	GN18585

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40688-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	MP10587

- T40779-1C for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM 2540 G

Matrix	SO	Batch ID:	GN18510

- Sample(s) T40779-1DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix	SO	Batch ID:	GN18581

- All method blanks for this batch meet method specific criteria.
- Sample(s) T40779-1DUP, T40779-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M

Matrix	SO	Batch ID:	R19569

- T40779-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN18576

- Sample(s) T40465-1DUP were used as the QC samples for pH.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8260B	**Percent Solids:**	87.1
Project:	C28MF Pit Bottom		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0056759.D	1	11/04/09	JL	n/a	n/a	VX342
Run #2							

	Initial Weight	Final Volume
Run #1	5.93 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.99	4.8	0.68	ug/kg	J
108-88-3	Toluene	1.2	4.8	0.92	ug/kg	J
100-41-4	Ethylbenzene	ND	4.8	0.87	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		70-121%
2037-26-5	Toluene-D8	104%		76-132%
460-00-4	4-Bromofluorobenzene	99%		73-165%
17060-07-0	1,2-Dichloroethane-D4	99%		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:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	87.1
Project:	C28MF Pit Bottom		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H35696.D	1	10/29/09	SC	10/29/09	OP13348	EH1924
Run #2							

	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	7.6	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	7.6	2.7	ug/kg	
120-12-7	Anthracene	4.1	7.6	1.4	ug/kg	J
56-55-3	Benzo(a)anthracene	19.3	7.6	1.2	ug/kg	
50-32-8	Benzo(a)pyrene	6.1	7.6	4.1	ug/kg	J
205-99-2	Benzo(b)fluoranthene	33.5	7.6	4.0	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	7.6	7.6	ug/kg	
207-08-9	Benzo(k)fluoranthene	7.8	7.6	4.9	ug/kg	
218-01-9	Chrysene	16.7	7.6	1.9	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	7.6	7.3	ug/kg	
206-44-0	Fluoranthene	40.4	7.6	1.7	ug/kg	
86-73-7	Fluorene	ND	7.6	2.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	7.6	5.7	ug/kg	
90-12-0	1-Methylnaphthalene	7.5	7.6	1.4	ug/kg	J
91-57-6	2-Methylnaphthalene	15.7	7.6	1.3	ug/kg	
91-20-3	Naphthalene	15.8	7.6	1.2	ug/kg	
85-01-8	Phenanthrene	25.4	7.6	1.1	ug/kg	
129-00-0	Pyrene	9.3	7.6	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	118%		10-127%
321-60-8	2-Fluorobiphenyl	61%		11-133%
1718-51-0	Terphenyl-d14	57%		15-187%

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:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8015	**Percent Solids:**	87.1
Project:	C28MF Pit Bottom		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE049005.D	1	10/30/09	FI	n/a	n/a	GEE2481
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.42 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	2.05	6.0	0.36	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		46-127%
98-08-8	aaa-Trifluorotoluene	103%		44-120%

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: C28MF-PIT-102809
Lab Sample ID: T40779-1
Matrix: SO - Soil
Method: SW846 8015 M SW846 3550B
Project: C28MF Pit Bottom

Date Sampled: 10/28/09
Date Received: 10/29/09
Percent Solids: 87.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC216253.D	1	11/04/09	SS	11/03/09	OP13391	GCC997
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	11.4	9.5	3.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	66%		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: C28MF-PIT-102809
Lab Sample ID: T40779-1
Matrix: SO - Soil
Project: C28MF Pit Bottom

Date Sampled: 10/28/09
Date Received: 10/29/09
Percent Solids: 87.1

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	0.61	0.12	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Cadmium	0.061 U	0.30	0.061	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Chromium	15.8	0.61	0.042	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Copper	9.6	1.5	0.079	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Lead	10.3	0.61	0.24	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Mercury	0.00066 U	0.017	0.00066	mg/kg	1	11/04/09	11/04/09	TW	SW846 7471A [2]	SW846 7471A [4]
Nickel	18.6	2.4	0.079	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Selenium	0.15 U	0.61	0.15	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Silver	0.21 B	0.61	0.048	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]
Zinc	68.9	1.2	0.24	mg/kg	1	10/30/09	10/30/09	NS	SW846 6010B [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA4365
(2) Instrument QC Batch: MA4374
(3) Prep QC Batch: MP10560
(4) Prep QC Batch: MP10588

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.1
Project:	C28MF Pit Bottom		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.2 B	2.0	mg/kg	1	11/04/09 08:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	14.6	2.6	mg/kg	1	11/04/09 08:00	KD	SW846 6010/7196A M
Solids, Percent	87.1		%	1	10/29/09	EV	SM 2540 G
Specific Conductivity	1710	1.0	umhos/cm	1	11/04/09 14:00	KD	EPA 120.1
pH	9.4		su	1	11/03/09 14:40	EV	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1A	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.1
Project:	C28MF Pit Bottom		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Boron	0.491	0.20	0.0042	mg/l	1	11/02/09	11/03/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4371
(2) Prep QC Batch: MP10570

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1B	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.1
Project:	C28MF Pit Bottom		

Total True Barium Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	2610	57	0.17	mg/kg	5	11/02/09	11/03/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4371
(2) Prep QC Batch: MP10569

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1C	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.1
Project:	C28MF Pit Bottom		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	464	25	0.18	mg/l	5	11/04/09	11/04/09	NS	SW846 6010B [1]	LADNR 29B [2]
Magnesium	9.81 B	25	0.039	mg/l	5	11/04/09	11/04/09	NS	SW846 6010B [1]	LADNR 29B [2]
Sodium	2430	130	3.4	mg/l	25	11/04/09	11/04/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4373
(2) Prep QC Batch: MP10587

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	C28MF-PIT-102809		
Lab Sample ID:	T40779-1C	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.1
Project:	C28MF Pit Bottom		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	30.5		ratio	1	11/04/09 16:55	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T40779

Client / Reporting Information

Company Name: EnCana Oil & Gas (USA) Inc.

Project Contact: Chris Hines — E-Mail: christopher.hines@encana.com

Address: 2717 County Road 215, Suite 100

City: Parachute, State: CO, Zip: 81635

Phone No.: 970.285.2653 — Fax No.:

Samplers's Name: Chris Hines

Project Information

Project Name / No.: C28MF Pit Bottom

Bill to: Chris Hines — Invoice Attn.:

Address:

City — State — Zip

Phone No. — Fax No.

Client Purchase Order #

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	see attached	LAB USE ONLY
	C28MF - Pit - 102809	10/28/2009	10:15	SO	3									X	

Turnaround Time (Business days)

- [ ] 14 Day *STANDARD* — Approved By:/ Date:
- [ ] 5 Day *RUSH*
- [X] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results & Standard QC

Comments / Remarks

Client Needs Units In:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10-28-09	15:00	1	2 Fed Ex	10/29/09 0930	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 3.8

T40779: Chain of Custody
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Table 1:
Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS[1]	ANALYTICAL METHOD (SW846)
Organic Compounds in Soil		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg[2]	8260B
Toluene	85 mg/kg[2]	8260B
Ethylbenzene	100 mg/kg[2]	8260B
Xylenes (total	175 mg/kg[2]	8260B
Acenaphthene	1,000 mg/kg[2]	8270C
Anthracene	1,000 mg/kg[2]	8270C
Benzo(A)anthracene	0.22 mg/kg[2]	8270C
Benzo(B)fluoranthene	0.22 mg/kg[2]	8270C
Benzo(K)fluoranthene	2.2 mg/kg[2]	8270C
Benzo(A)pyrene	0.022 mg/kg[2]	8270C
Chrysene	22 mg/kg[2]	8270C
Dibenzo(A,H)anthracene	0.022 mg/kg[2]	8270C
Fluoranthene	1,000 mg/kg[2]	8270C
Fluorene	1,000 mg/kg[2]	8270C
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg[2]	8270C
Napthalene	23 mg/kg[2]	8270C
Pyrene	1,000 mg/kg[2]	8270C
Inorganics in Soils		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12[5]	LADNR29B
pH	6-9	9045C
Metals in Soils		
Arsenic	0.39 mg/kg[2]	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg[2]	6010B
Boron (Hot Water Soluble)	2 mg/l[3]	6010B
Cadmium	70 mg/kg[3,5]	6010B
Chromium (III)	120,000 mg/kg[2]	6010B
Chromium (VI)	23 mg/kg[2,5]	6010B
Copper	3,100 mg/kg[2]	6010B
Lead (inorganic)	400 mg/kg[2]	6010B
Mercury	23 mg/kg[2]	6010B
Nickel (soluble salts)	1,600 mg/kg[2,6]	6010B
Selenium	390 mg/kg[2,6]	6010B
Silver	390 mg/kg[2]	6010BB
Zinc	23,000 mg/kg[2,6]	6010B
Liquid Hydrocarbons in Soils and Ground Water		
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 by laboratories that maintain state or national accreditation programs.
[1] COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

SAMPLE INSPECTION FORM

Accutest Job Number: T40779 Client: Enfana Oil & Gas (USA) Date/Time Received: 10/29/09 0930

# of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: 3.8

Cooler Temps: #1: 3.8 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: _____

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] 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

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] 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] 10/29/09 0930

INFORMATION AND SAMPLE LABELING VERIFIED BY: _____

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

I:\mwalker\form\samplemanagement

SAMPLE RECEIPT LOG

JOB #: T40779 DATE/TIME RECEIVED: 10/29/09 0930

CLIENT: EnCana Oil & Gas INITIALS: FF

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	C28MF - PIT - 102809	— 1015	S	16 oz	1-2	2EE	(1) 2 3 4 5 6 7 8	<2 >12
"	"	"	"	"	"	3	VR	(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
			FF 10/29/09					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

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

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T40779: Chain of Custody
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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

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX342-MB	X0056748.D	1	11/04/09	JL	n/a	n/a	VX342

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

T40779-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	113%	70-121%
2037-26-5	Toluene-D8	99%	76-132%
460-00-4	4-Bromofluorobenzene	94%	73-165%
17060-07-0	1,2-Dichloroethane-D4	95%	57-122%

Blank Spike Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX342-BS	X0056746.D	1	11/04/09	JL	n/a	n/a	VX342

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

T40779-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.8	92	70-114
100-41-4	Ethylbenzene	50	43.3	87	60-119
108-88-3	Toluene	50	43.2	86	68-115
1330-20-7	Xylene (total)	150	132	88	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	111%	70-121%
2037-26-5	Toluene-D8	101%	76-132%
460-00-4	4-Bromofluorobenzene	89%	73-165%
17060-07-0	1,2-Dichloroethane-D4	89%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40688-1MS	X0056750.D	1	11/04/09	JL	n/a	n/a	VX342
T40688-1MSD	X0056751.D	1	11/04/09	JL	n/a	n/a	VX342
T40688-1	X0056749.D	1	11/04/09	JL	n/a	n/a	VX342

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

T40779-1

CAS No.	Compound	T40688-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		48.4	33.6	69*	35.5	69*	5	70-114/38
100-41-4	Ethylbenzene	ND		48.4	21.1	44*	23.7	46*	12	60-119/40
108-88-3	Toluene	ND		48.4	28.1	58*	30.6	60*	9	68-115/38
1330-20-7	Xylene (total)	ND		145	35.9	25*	40.0	26*	11	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T40688-1	Limits
1868-53-7	Dibromofluoromethane	110%	109%	111%	70-121%
2037-26-5	Toluene-D8	110%	110%	104%	76-132%
460-00-4	4-Bromofluorobenzene	107%	109%	106%	73-165%
17060-07-0	1,2-Dichloroethane-D4	97%	90%	94%	57-122%

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13348-MB	H35693.D	1	10/29/09	SC	10/29/09	OP13348	EH1924

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40779-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	124%	10-127%
321-60-8	2-Fluorobiphenyl	72%	11-133%
1718-51-0	Terphenyl-d14	80%	15-187%

Blank Spike Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13348-BS	H35694.D	1	10/29/09	SC	10/29/09	OP13348	EH1924

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40779-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	139	83	18-118
208-96-8	Acenaphthylene	167	93.7	56	35-125
120-12-7	Anthracene	167	144	86	24-116
56-55-3	Benzo(a)anthracene	167	172	103	32-132
50-32-8	Benzo(a)pyrene	167	126	76	36-130
205-99-2	Benzo(b)fluoranthene	167	136	82	35-134
191-24-2	Benzo(g,h,i)perylene	167	94.1	56	18-149
207-08-9	Benzo(k)fluoranthene	167	182	109	30-131
218-01-9	Chrysene	167	121	73	37-124
53-70-3	Dibenzo(a,h)anthracene	167	99.5	60	23-150
206-44-0	Fluoranthene	167	147	88	28-118
86-73-7	Fluorene	167	87.1	52	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	102	61	18-150
90-12-0	1-Methylnaphthalene	167	150	90	10-128
91-57-6	2-Methylnaphthalene	167	135	81	28-113
91-20-3	Naphthalene	167	160	96	31-106
85-01-8	Phenanthrene	167	138	83	37-112
129-00-0	Pyrene	167	160	96	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	92%	10-127%
321-60-8	2-Fluorobiphenyl	58%	11-133%
1718-51-0	Terphenyl-d14	84%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13348-MS	H35697.D	1	10/29/09	SC	10/29/09	OP13348	EH1924
OP13348-MSD	H35698.D	1	10/29/09	SC	10/29/09	OP13348	EH1924
T40779-1	H35696.D	1	10/29/09	SC	10/29/09	OP13348	EH1924

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40779-1

CAS No.	Compound	T40779-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		187	87.3	47	90.3	48	3	10-153/80
208-96-8	Acenaphthylene	ND		187	42.7	23	36.7	19	15	10-144/71
120-12-7	Anthracene	4.1	J	187	145	75	147	75	1	10-176/57
56-55-3	Benzo(a)anthracene	19.3		187	198	96	213	102	7	10-174/73
50-32-8	Benzo(a)pyrene	6.1	J	187	148	76	150	76	1	10-182/74
205-99-2	Benzo(b)fluoranthene	33.5		187	219	99	215	96	2	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		187	93.5	50	111	59	17	10-150/62
207-08-9	Benzo(k)fluoranthene	7.8		187	204	105	199	101	2	10-170/94
218-01-9	Chrysene	16.7		187	148	70	144	67	3	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		187	83.4	45	96.1	51	14	10-192/74
206-44-0	Fluoranthene	40.4		187	239	106	239	105	0	10-141/73
86-73-7	Fluorene	ND		187	56.9	30	46.5	25	20	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		187	88.9	48	102	54	14	10-150/73
90-12-0	1-Methylnaphthalene	7.5	J	187	97.9	48	103	50	5	10-154/82
91-57-6	2-Methylnaphthalene	15.7		187	106	48	113	51	6	10-171/75
91-20-3	Naphthalene	15.8		187	79.0	34	81.1	34	3	10-138/82
85-01-8	Phenanthrene	25.4		187	160	72	160	71	0	10-191/77
129-00-0	Pyrene	9.3		187	148	74	167	83	12	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T40779-1	Limits
4165-60-0	Nitrobenzene-d5	88%	88%	118%	10-127%
321-60-8	2-Fluorobiphenyl	29%	29%	61%	11-133%
1718-51-0	Terphenyl-d14	69%	68%	57%	15-187%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2481-MB	EE048990.D	1	10/30/09	FI	n/a	n/a	GEE2481

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

T40779-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	110%	46-127%
98-08-8	aaa-Trifluorotoluene	102%	44-120%

Blank Spike Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2481-BS	EE048986.D	1	10/30/09	FI	n/a	n/a	GEE2481

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

T40779-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.369	92	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	111%	46-127%
98-08-8	aaa-Trifluorotoluene	104%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40689-2MS	EE049006.D	1	10/30/09	FI	n/a	n/a	GEE2481
T40689-2MSD	EE049007.D	1	10/30/09	FI	n/a	n/a	GEE2481
T40689-2	EE049004.D	1	10/30/09	FI	n/a	n/a	GEE2481

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

T40779-1

CAS No.	Compound	T40689-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		26.5	25.7	97	25.1	95	2	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T40689-2	Limits
460-00-4	4-Bromofluorobenzene	103%	105%	104%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	106%	106%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13391-MB	CC216248.D	1	11/04/09	SS	11/04/09	OP13391	GCC997

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

T40779-1

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	55%	33-115%

Blank Spike Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13391-BS	CC216249.D	1	11/04/09	SS	11/04/09	OP13391	GCC997

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

T40779-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	18.0	54	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	50%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40779
Account: ENCACOP ENCANA
Project: C28MF Pit Bottom

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13391-MS	CC216251.D	1	11/04/09	SS	11/04/09	OP13391	GCC997
OP13391-MSD	CC216252.D	1	11/04/09	SS	11/04/09	OP13391	GCC997
T41328-1	CC216255.D	1	11/04/09	SS	11/03/09	OP13391	GCC997

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

T40779-1

CAS No.	Compound	T41328-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	35.9		40.7	23.2	-31*	33.9	-5*	37*	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T41328-1	Limits
84-15-1	o-Terphenyl	44%	57%	63%	33-115%

Metals Analysis

QC Data Summaries

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10560
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/30/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.097	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0020	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.029	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.0015	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.0065	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.023	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.087	<0.50
Silver	0.50	.043	.04	-0.028	<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	-0.0025	<1.0

Associated samples MP10560: T40779-1

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10560
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/30/09					10/30/09	
Metal	T40398-3R Original	DUP	RPD	QC Limits	T40398-3R Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	31.1	31.7	1.9	0-20	31.1	81.9	28.5	178.6N	80-120
Barium	anr								
Beryllium									
Boron	anr								
Cadmium	1.3	1.3	0.0	0-20	1.3	28.3	28.5	94.9	80-120
Calcium									
Chromium	37.2	36.5	1.9	0-20	37.2	84.2	28.5	165.2N	80-120
Cobalt									
Copper	756	582	26.0*(a)	0-20	756	929	28.5	608.1(b)	80-120
Iron									
Lead	3810	4620	19.2	0-20	3810	7360	28.5	12477.5b	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	144	168	15.4	0-20	144	228	28.5	295.2(b)	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	26.8	28.5	94.2	80-120
Silver	4.2	3.9	7.4	0-20	4.2	22.8	28.5	65.4N	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	2180	2080	4.7	0-20	2180	2620	28.5	1546.5(b	80-120

Associated samples MP10560: T40779-1

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) High RPD due to possible sample nonhomogeneity.
(b) 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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10560
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/30/09

Metal	T40398-3R Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	31.1	62.2	26.9	115.6	27.3 (a)	20
Barium	anr					
Beryllium						
Boron	anr					
Cadmium	1.3	26.0	26.9	91.8	8.5	20
Calcium						
Chromium	37.2	71.1	26.9	126.0N	16.9	20
Cobalt						
Copper	756	708	26.9	-178.4(b	27.0 (c)	20
Iron						
Lead	3810	4660	26.9	3159.3(b	44.9 (c)	20
Magnesium						
Manganese						
Molybdenum						
Nickel	144	149	26.9	18.6 (b)	41.9 (c)	20
Potassium						
Selenium	0.0	24.5	26.9	91.1	9.0	20
Silver	4.2	19.3	26.9	56.1N	16.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	2180	2100	26.9	-297.3(b	22.0 (c)	20

Associated samples MP10560: T40779-1

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) High RPD due to possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(c) High RPD due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10560
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/30/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	142	158	89.9	82-118
Barium	anr			
Beryllium				
Boron	anr			
Cadmium	160	187	85.6	82-118
Calcium				
Chromium	80.9	89.5	90.4	79-121
Cobalt				
Copper	120	129	93.0	84-117
Iron				
Lead	151	172	87.8	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	88.9	99	89.8	81-119
Potassium				
Selenium	129	148	87.2	78-121
Silver	58.8	66	89.1	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	342	394	86.8	80-119

Associated samples MP10560: T40779-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10560
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/30/09

Metal	T40398-3R Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	475	452	4.8	0-10
Barium	anr			
Beryllium				
Boron	anr			
Cadmium	20.1	22.9	13.9 (a)	0-10
Calcium				
Chromium	568	569	0.1	0-10
Cobalt				
Copper	11500	11600	0.4	0-10
Iron				
Lead	58200	57900	0.5	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	2200	2200	0.2	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	64.2	56.3	12.3 (a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	33200	37000	11.2*(b)	0-10

Associated samples MP10560: T40779-1

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).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

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	0.15	<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 MP10569: T40779-1B

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			11/02/09					11/02/09	
Metal	T40780-1B Original	DUP	RPD	QC Limits	T40780-1B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	5250	5400	2.8	0-20	5250	5650	22.7	1762.9(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 MP10569: T40779-1B

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

Metal	T40780-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	5250	5430	22.6	795.2(a)	4.0	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 MP10569: T40779-1B

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	18.7	20	93.5	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 MP10569: T40779-1B

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T40780-1B Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	92600	99500	7.5	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 MP10569: T40779-1B

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

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	-43	<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 MP10570: T40779-1A

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09 11/02/09

Metal	T39947-3A Original	DUP	RPD	QC Limits	T39947-3A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	248	244	1.6	0-20	248	2170	1000	96.9	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 MP10570: T40779-1A

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T39947-3A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	248	2180	1000	99.0	0.5	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10570: T40779-1A

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2240	1000	111.9	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 MP10570: T40779-1A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T39947-3A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	124	120	3.4	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 MP10570: T40779-1A

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	127	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	15.9	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	-72	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10587: T40779-1C

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	T37853-2C Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	117000	108000	8.0	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	14200	8.1	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	7610	7240	5.0	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10587: T40779-1C

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	T37853-2C Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	117000	118000	0.7	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	15800	2.6	0-10
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	7610	8790	15.5 (a)	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10587: T40779-1C

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10588
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/04/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0064	<0.017

Associated samples MP10588: T40779-1

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10588
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/04/09 11/04/09

Metal	T40779-1 Original	DUP	RPD	QC Limits	T40779-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.0	0.010	200.0(a)	0-20	0.0	0.32	0.272	117.4	75-125

Associated samples MP10588: T40779-1

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10588
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/04/09

Metal	T40779-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.33	0.278	118.8	3.1	

Associated samples MP10588: T40779-1

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

QC Batch ID: MP10588
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/04/09

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	7.4	7.34	100.8	72-128

Associated samples MP10588: T40779-1

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

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: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18581	2.0	<2.0	mg/kg	40	39.1	97.9	80-120%
Specific Conductivity	GN18585	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN18581: T40779-1
Batch GN18585: T40779-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18581	T40779-1	mg/kg	1.2 B	<2.0	0.3	0-20%
Solids, Percent	GN18510	T40779-1	%	87.1	90.3	3.6	0-5%
Specific Conductivity	GN18585	T40688-1	umhos/cm	89.8	89.8	0.0	0-20%
pH	GN18576	T40465-1	su	7.8	7.8	0.0	0-20%

Associated Samples:
Batch GN18510: T40779-1
Batch GN18576: T40779-1
Batch GN18581: T40779-1
Batch GN18585: T40779-1
Batch MP10587: T40779-1C
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40779
Account: ENCACOP - ENCANA
Project: C28MF Pit Bottom

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18581	T40779-1	mg/kg	1.2 B	40	34.1	82.4	75-125%

Associated Samples:
Batch GN18581: T40779-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Technical Report for

ENCANA

C28MF Pit Spoil

C28MF

Accutest Job Number: T40780

Sampling Date: 10/28/09

Report to:

EnCana
2717 Co. Rd. 215
Parachute, CO 81635
christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **61**

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

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)

Sections: 1 2 3 4 5 6 7 8 9

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Sample Summary

ENCANA

Job No: T40780

C28MF Pit Spoil
Project No: C28MF

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T40780-1	10/28/09	10:45	CH	10/29/09	SO	Soil	C28MF - PIT SPOIL - 102809
T40780-1A	10/28/09	10:45	CH	10/29/09	SO	Soil	C28MF - PIT SPOIL - 102809
T40780-1B	10/28/09	10:45	CH	10/29/09	SO	Soil	C28MF - PIT SPOIL - 102809
T40780-1C	10/28/09	10:45	CH	10/29/09	SO	Soil	C28MF - PIT SPOIL - 102809

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

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8260B	**Percent Solids:**	87.9
Project:	C28MF Pit Spoil		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0022020.D	1	11/09/09	AH	n/a	n/a	VM888
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	393	310	43	ug/kg	
108-88-3	Toluene	686	310	59	ug/kg	
100-41-4	Ethylbenzene	244	310	56	ug/kg	J
1330-20-7	Xylene (total)	3980	930	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-121%
2037-26-5	Toluene-D8	115%		76-132%
460-00-4	4-Bromofluorobenzene	116%		73-165%
17060-07-0	1,2-Dichloroethane-D4	92%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	87.9
Project:	C28MF Pit Spoil		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P07172.D	1	11/10/09	GJ	11/09/09	OP13432	EP344
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	7.5	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	7.5	2.6	ug/kg	
120-12-7	Anthracene	6.7	7.5	1.4	ug/kg	J
56-55-3	Benzo(a)anthracene	79.1	7.5	1.2	ug/kg	
50-32-8	Benzo(a)pyrene	39.4	7.5	4.0	ug/kg	
205-99-2	Benzo(b)fluoranthene	127	7.5	4.0	ug/kg	
191-24-2	Benzo(g,h,i)perylene	41.1	7.5	7.5	ug/kg	
207-08-9	Benzo(k)fluoranthene	27.8	7.5	4.9	ug/kg	
218-01-9	Chrysene	100	7.5	1.9	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	13.9	7.5	7.3	ug/kg	
206-44-0	Fluoranthene	110	7.5	1.6	ug/kg	
86-73-7	Fluorene	24.0	7.5	2.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	33.7	7.5	5.6	ug/kg	
90-12-0	1-Methylnaphthalene	53.6	7.5	1.4	ug/kg	
91-57-6	2-Methylnaphthalene	39.7	7.5	1.3	ug/kg	
91-20-3	Naphthalene	33.5	7.5	1.2	ug/kg	
85-01-8	Phenanthrene	91.6	7.5	1.1	ug/kg	
129-00-0	Pyrene	46.4	7.5	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	97%		10-127%
321-60-8	2-Fluorobiphenyl	60%		11-133%
1718-51-0	Terphenyl-d14	97%		15-187%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8015	**Percent Solids:**	87.9
Project:	C28MF Pit Spoil		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE049163.D	10	11/05/09	FI	n/a	n/a	GEE2488
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)	144	62	3.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	116%		46-127%
98-08-8	aaa-Trifluorotoluene	108%		44-120%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	87.9
Project:	C28MF Pit Spoil		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF192436.D	10	11/10/09	SS	11/07/09	OP13424	GIF898
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	276	93	31	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	0% [a]		33-115%

(a) Outside control limits due to dilution.

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

Accutest Laboratories

Report of Analysis

Client Sample ID: C28MF - PIT SPOIL - 102809
Lab Sample ID: T40780-1
Matrix: SO - Soil
Project: C28MF Pit Spoil

Date Sampled: 10/28/09
Date Received: 10/29/09
Percent Solids: 87.9

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.1	0.61	0.12	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Cadmium	0.40	0.31	0.061	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Chromium	17.6	0.61	0.043	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Copper	16.9	1.5	0.080	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Lead	12.9	0.61	0.25	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Mercury	0.054	0.017	0.00066	mg/kg	1	11/11/09	11/11/09	TW	SW846 7471A [2]	SW846 7471A [4]
Nickel	19.9	2.5	0.080	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Selenium	0.15 U	0.61	0.15	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Silver	0.24 B	0.61	0.049	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]
Zinc	67.3	1.2	0.25	mg/kg	1	11/05/09	11/05/09	NS	SW846 6010B [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA4376
(2) Instrument QC Batch: MA4388
(3) Prep QC Batch: MP10597
(4) Prep QC Batch: MP10625

RL = Reporting Limit
MDL = Method Detection Limit

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.9
Project:	C28MF Pit Spoil		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.3 B	2.0	mg/kg	1	11/04/09 08:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	16.3	2.6	mg/kg	1	11/05/09 20:01	NS	SW846 6010/7196A M
Solids, Percent	87.9		%	1	11/04/09	AA	SM 2540 G
Specific Conductivity	2190	1.0	umhos/cm	1	11/04/09 14:00	KD	EPA 120.1
pH	8.1		su	1	11/10/09 13:00	EV	SW846 9045C

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

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1A	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.9
Project:	C28MF Pit Spoil		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Boron	1.05	0.20	0.0042	mg/l	1	11/02/09	11/03/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4371
(2) Prep QC Batch: MP10570

RL = Reporting Limit
MDL = Method Detection Limit

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1B	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.9
Project:	C28MF Pit Spoil		

Total True Barium Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	5250	57	0.17	mg/kg	5	11/02/09	11/03/09	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4371
(2) Prep QC Batch: MP10569

RL = Reporting Limit
MDL = Method Detection Limit

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

Accutest Laboratories

Report of Analysis

Client Sample ID: C28MF - PIT SPOIL - 102809
Lab Sample ID: T40780-1C
Matrix: SO - Soil
Project: C28MF Pit Spoil

Date Sampled: 10/28/09
Date Received: 10/29/09
Percent Solids: 87.9

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	608	25	0.18	mg/l	5	11/04/09	11/04/09	NS	SW846 6010B [1]	LADNR 29B [3]
Magnesium	13.6 B	25	0.039	mg/l	5	11/04/09	11/04/09	NS	SW846 6010B [1]	LADNR 29B [3]
Sodium	3230	130	3.4	mg/l	25	11/05/09	11/05/09	NS	SW846 6010B [2]	LADNR 29B [3]

(1) Instrument QC Batch: MA4373
(2) Instrument QC Batch: MA4376
(3) Prep QC Batch: MP10587

RL = Reporting Limit
MDL = Method Detection Limit

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	C28MF - PIT SPOIL - 102809		
Lab Sample ID:	T40780-1C	**Date Sampled:**	10/28/09
Matrix:	SO - Soil	**Date Received:**	10/29/09
		Percent Solids:	87.9
Project:	C28MF Pit Spoil		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	35.4		ratio	1	11/05/09 18:43	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T40780

Client / Reporting Information

Company Name	Project Name / No.
EnCana Oil & Gas (USA) Inc.	C28MF Pit Spoil
Project Contact / E-Mail	**Bill to** / Invoice Attn.
Chris Hines christopher.hines@encana.com	Chris Hines
Address	**Address**
2717 County Road 215, Suite 100	
City / State / Zip	**City** / State / Zip
Parachute, CO 81635	
Phone No. / Fax No.	**Phone No.** / Fax No.
970.285.2653	
Samplers's Name	**Client Purchase Order #**
Chris Hines	

Requested Analyses

see attached

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	H2SO4	NaOH	MEOH	NONE	see attached	LAB USE ONLY
	C28MF - Pit Spoil - 102809	10/28/2009	10:45	SO	3						X	

Turnaround Time (Business days)

- [X] 14 Day *STANDARD*
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

Client Needs Units In:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10-28-09	15:00	1	2 Fed Ex	10/29/09 0930	2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☑ Cooler Temp. 3.8

T40780: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T40780 Client: Encana Oil & Gas (USA) Date/Time Received: 10/29/09 0930

# of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 3.8 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: _____

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] 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

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] 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: _____ 10/29/09

INFORMATION AND SAMPLE LABELING VERIFIED BY: _____

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

I:\mwalker\forms\samplemanagement

T40780: Chain of Custody
Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T40780 DATE/TIME RECEIVED: 10/29/09 0930

CLIENT: EnCana Oil & Gas (USA) INITIALS: FF

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	C2BMF-SPOIL-102809	— 1045	S	16 oz	1-2	2EE	(1) 2 3 4 5 6 7 8	<2 >12
"	"	"	"	"	"	3	VR	(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
								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

FF 10/29/09

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

Rev 8/13/01 ewp

T40780: Chain of Custody
Page 3 of 3

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

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM888-MB	M0022012.D	1	11/09/09	AH	n/a	n/a	VM888

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

T40780-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	70-121%
2037-26-5	Toluene-D8	116%	76-132%
460-00-4	4-Bromofluorobenzene	111%	73-165%
17060-07-0	1,2-Dichloroethane-D4	94%	57-122%

Blank Spike Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM888-BS	M0022010.D	1	11/09/09	AH	n/a	n/a	VM888

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

T40780-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	42.5	85	70-114
100-41-4	Ethylbenzene	50	43.5	87	60-119
108-88-3	Toluene	50	44.2	88	68-115
1330-20-7	Xylene (total)	150	133	89	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	70-121%
2037-26-5	Toluene-D8	115%	76-132%
460-00-4	4-Bromofluorobenzene	112%	73-165%
17060-07-0	1,2-Dichloroethane-D4	96%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T41327-6MS	M0022018.D	1	11/09/09	AH	n/a	n/a	VM888
T41327-6MSD	M0022019.D	1	11/09/09	AH	n/a	n/a	VM888
T41327-6	M0022017.D	1	11/09/09	AH	n/a	n/a	VM888

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

T40780-1

CAS No.	Compound	T41327-6 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	583		4240	4560	94	4630	95	2	70-114/38
100-41-4	Ethylbenzene	354	J	4240	4350	94	4590	100	5	60-119/40
108-88-3	Toluene	4140		4240	8140	94	8440	101	4	68-115/38
1330-20-7	Xylene (total)	6760		12700	19300	99	19900	103	3	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T41327-6	Limits
1868-53-7	Dibromofluoromethane	100%	98%	106%	70-121%
2037-26-5	Toluene-D8	113%	113%	117%	76-132%
460-00-4	4-Bromofluorobenzene	110%	116%	114%	73-165%
17060-07-0	1,2-Dichloroethane-D4	95%	93%	97%	57-122%

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-MB	P07156.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40780-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	58%	10-127%
321-60-8	2-Fluorobiphenyl	36%	11-133%
1718-51-0	Terphenyl-d14	32%	15-187%

Blank Spike Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-BS	P07157.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40780-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	104	62	18-118
208-96-8	Acenaphthylene	167	118	71	35-125
120-12-7	Anthracene	167	146	88	24-116
56-55-3	Benzo(a)anthracene	167	150	90	32-132
50-32-8	Benzo(a)pyrene	167	131	79	36-130
205-99-2	Benzo(b)fluoranthene	167	140	84	35-134
191-24-2	Benzo(g,h,i)perylene	167	171	103	18-149
207-08-9	Benzo(k)fluoranthene	167	170	102	30-131
218-01-9	Chrysene	167	157	94	37-124
53-70-3	Dibenzo(a,h)anthracene	167	158	95	23-150
206-44-0	Fluoranthene	167	156	94	28-118
86-73-7	Fluorene	167	120	72	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	159	95	18-150
90-12-0	1-Methylnaphthalene	167	105	63	10-128
91-57-6	2-Methylnaphthalene	167	122	73	28-113
91-20-3	Naphthalene	167	116	70	31-106
85-01-8	Phenanthrene	167	146	88	37-112
129-00-0	Pyrene	167	156	94	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	90%	10-127%
321-60-8	2-Fluorobiphenyl	105%	11-133%
1718-51-0	Terphenyl-d14	104%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-MS	P07162.D	1	11/10/09	GJ	11/09/09	OP13432	EP344
OP13432-MSD	P07163.D	1	11/10/09	GJ	11/09/09	OP13432	EP344
T41708-1	P07161.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T40780-1

CAS No.	Compound	T41708-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		195	75.7	39	80.5	41	6	10-153/80
208-96-8	Acenaphthylene	ND		195	75.8	39	79.1	40	4	10-144/71
120-12-7	Anthracene	ND		195	136	70	156	80	14	10-176/57
56-55-3	Benzo(a)anthracene	ND		195	143	73	177	90	21	10-174/73
50-32-8	Benzo(a)pyrene	ND		195	123	63	154	79	22	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		195	148	76	190	97	25	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		195	141	72	165	84	16	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		195	141	72	176	90	22	10-170/94
218-01-9	Chrysene	ND		195	144	74	179	91	22	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		195	145	74	171	87	16	10-192/74
206-44-0	Fluoranthene	ND		195	138	71	180	92	26	10-141/73
86-73-7	Fluorene	ND		195	85.4	44	92.2	47	8	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		195	142	73	168	86	17	10-150/73
90-12-0	1-Methylnaphthalene	ND		195	68.2	35	71.7	37	5	10-154/82
91-57-6	2-Methylnaphthalene	10.3		195	102	47	102	47	0	10-171/75
91-20-3	Naphthalene	ND		195	84.6	43	94.1	48	11	10-138/82
85-01-8	Phenanthrene	1.4	J	195	134	68	158	80	16	10-191/77
129-00-0	Pyrene	ND		195	178	91	224	114	23	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T41708-1	Limits
4165-60-0	Nitrobenzene-d5	56%	53%	77%	10-127%
321-60-8	2-Fluorobiphenyl	56%	58%	59%	11-133%
1718-51-0	Terphenyl-d14	85%	122%	115%	15-187%

GC Volatiles

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QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2488-MB	EE049158.D	1	11/05/09	FI	n/a	n/a	GEE2488

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

T40780-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

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

Blank Spike Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2488-BS	EE049154.D	1	11/05/09	FI	n/a	n/a	GEE2488

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

T40780-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.341	85	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	97%	46-127%
98-08-8	aaa-Trifluorotoluene	107%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T41470-2MS	EE049164.D	1	11/05/09	FI	n/a	n/a	GEE2488
T41470-2MSD	EE049165.D	1	11/05/09	FI	n/a	n/a	GEE2488
T41470-2	EE049161.D	1	11/05/09	FI	n/a	n/a	GEE2488

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

T40780-1

CAS No.	Compound	T41470-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		26.7	25.0	94	23.8	89	5	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T41470-2	Limits
460-00-4	4-Bromofluorobenzene	104%	102%	99%	46-127%
98-08-8	aaa-Trifluorotoluene	110%	103%	106%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13424-MB	IF192417.D	1	11/10/09	SS	11/07/09	OP13424	GIB898

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

T40780-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.2	2.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	54%	33-115%

Blank Spike Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13424-BS	IF192409.D	1	11/10/09	SS	11/07/09	OP13424	GIB898

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

T40780-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	32.9	29.2	89	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	50%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40780
Account: ENCACOP ENCANA
Project: C28MF Pit Spoil

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13424-MS	IF192410.D	1	11/10/09	SS	11/07/09	OP13424	GIF898
OP13424-MSD	IF192411.D	1	11/10/09	SS	11/07/09	OP13424	GIB898
T41318-1	IF192412.D	1	11/10/09	SS	11/07/09	OP13424	GIF898

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

T40780-1

CAS No.	Compound	T41318-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	T41318-1	Limits
84-15-1	o-Terphenyl	47%	51%	55%	33-115%

Metals Analysis

QC Data Summaries

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

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	0.15	<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 MP10569: T40780-1B

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			11/02/09					11/02/09	
Metal	T40780-1B Original	DUP	RPD	QC Limits	T40780-1B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	5250	5400	2.8	0-20	5250	5650	22.7	1762.9(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 MP10569: T40780-1B

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

Metal	T40780-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	5250	5430	22.6	795.2(a)	4.0	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 MP10569: T40780-1B

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/02/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	18.7	20	93.5	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 MP10569: T40780-1B

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10569
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T40780-1B Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	92600	99500	7.5	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 MP10569: T40780-1B

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

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	-43	<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 MP10570: T40780-1A

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09 11/02/09

Metal	T39947-3A Original	DUP	RPD	QC Limits	T39947-3A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	248	244	1.6	0-20	248	2170	1000	96.9	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 MP10570: T40780-1A

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T39947-3A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	248	2180	1000	99.0	0.5	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10570: T40780-1A

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2240	1000	111.9	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 MP10570: T40780-1A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10570
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/02/09

Metal	T39947-3A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	124	120	3.4	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 MP10570: T40780-1A

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	127	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	15.9	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	-72	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10587: T40780-1C

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	T37853-2C Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	117000	108000	8.0	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	14200	8.1	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	7610	7240	5.0	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10587: T40780-1C

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10587
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/04/09

Metal	T37853-2C Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	117000	118000	0.7	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	15800	2.6	0-10
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	7610	8790	15.5 (a)	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10587: T40780-1C

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10597
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/05/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.025	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.018	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	0.014	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.055	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	0.0090	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.050	<0.50
Silver	0.50	.043	.04	-0.0040	<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	0.018	<1.0

Associated samples MP10597: T40780-1

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10597
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			11/05/09					11/05/09	
Metal	T39936-1A Original	DUP	RPD	QC Limits	T39936-1A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	2.5	2.5	0.0	0-20	2.5	17.7	22	69.0N	80-120
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	0.63	0.77	20.0	0-20	0.63	14.8	22	64.3N	80-120
Calcium									
Chromium	39.3	54.2	0.2	0-20	39.3	72.6	22	83.1	80-120
Cobalt									
Copper	18.6	18.8	1.1	0-20	18.6	36.0	22	79.0N	80-120
Iron									
Lead	2.1	3.7	11.4	0-20	2.1	23.4	22	91.3	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	19.2	19.5	1.6	0-20	19.2	32.8	22	61.8N	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	20.3	22	92.2	80-120
Silver	0.39	0.40	2.5	0-20	0.39	16.3	22	72.2N	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	6.5	5.6	14.9	0-20	6.5	22.5	22	72.6N	80-120

Associated samples MP10597: T40780-1

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10597
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/05/09

Metal	T39936-1A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	2.5	17.1	21.8	67.0N	3.4	20
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	0.63	14.0	21.8	61.4N	5.6	20
Calcium						
Chromium	39.3	71.5	21.8	79.0N	1.5	20
Cobalt						
Copper	18.6	35.5	21.8	77.6N	1.4	20
Iron						
Lead	2.1	23.0	21.8	90.4	1.7	20
Magnesium						
Manganese						
Molybdenum						
Nickel	19.2	32.0	21.8	58.8N	2.5	20
Potassium						
Selenium	0.0	20.2	21.8	92.7	0.5	20
Silver	0.39	15.8	21.8	70.7N	3.1	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	6.5	20.4	21.8	63.8N	9.8	20

Associated samples MP10597: T40780-1

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10597
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/05/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	146	158	92.4	82-118
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	186	187	99.5	82-118
Calcium				
Chromium	100	89.5	111.7	79-121
Cobalt				
Copper	131	129	101.6	84-117
Iron				
Lead	154	172	89.5	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	105	99	106.1	81-119
Potassium				
Selenium	140	148	94.6	78-121
Silver	59.2	66	89.7	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	376	394	95.4	80-119

Associated samples MP10597: T40780-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10597
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/05/09

Metal	T39936-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	43.2	58.1	34.4 (a)	0-10
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	10.9	7.68	29.7 (a)	0-10
Calcium				
Chromium	684	1020	7.3	0-10
Cobalt				
Copper	324	382	17.9*(b)	0-10
Iron				
Lead	37.4	82.0	41.7 (a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	334	476	42.5*(b)	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	6.82	8.67	27.1 (a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	113	155	38.0*(b)	0-10

Associated samples MP10597: T40780-1

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).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10625 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/11/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0011	<0.017

Associated samples MP10625: T40780-1

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10625
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/11/09 11/11/09

Metal	T41586-1 Original	DUP	RPD	QC Limits	T41586-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.044	0.024	58.8*(a)	0-20	0.044	0.33	0.302	94.6	75-125

Associated samples MP10625: T40780-1

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) High RPD due to possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10625
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/11/09

Metal	T41586-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.044	0.31	0.288	92.5	6.3	

Associated samples MP10625: T40780-1

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

QC Batch ID: MP10625
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/11/09

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	6.9	7.34	94.0	72-128

Associated samples MP10625: T40780-1

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

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: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18581	2.0	<2.0	mg/kg	40	39.1	97.9	80-120%
Specific Conductivity	GN18585	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN18581: T40780-1
Batch GN18585: T40780-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18581	T40779-1	mg/kg	1.2 B	<2.0	0.3	0-20%
Solids, Percent	GN18588	T40780-1	%	87.9	87.4	0.6	0-5%
Specific Conductivity	GN18585	T40688-1	umhos/cm	89.8	89.8	0.0	0-20%
pH	GN18662	T41789-14	su	6.5	6.5	0.0	0-20%

Associated Samples:
Batch GN18581: T40780-1
Batch GN18585: T40780-1
Batch GN18588: T40780-1
Batch GN18662: T40780-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T40780
Account: ENCACOP - ENCANA
Project: C28MF Pit Spoil

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18581	T40779-1	mg/kg	1.2 B	40	34.1	82.4	75-125%

Associated Samples:
Batch GN18581: T40780-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits