

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b)

RECEIVED
5/21/2011

1. OGCC Operator Number: 100185	4. Contact Name: Chris Hines	Complete the Attachment Checklist OGCC
2. Name of Operator: Encana Oil & Gas (USA) Inc.	Phone: (970) 285-2653	
3. Address: 2717 County Road 215 City: Parachute State: CO Zip: 81635	Fax: (970) 285-2705	
5. API Number: 05-	OGCC Facility ID Number: 334761 (Location ID)	Survey Plat
6. Well/Facility Name: ENYEART -67S95W	7. Well/Facility Number: 16NWNW	Directional Survey
8. Location (Ctr/Tr, Sec, Twp, Rng, Meridian): NWNW, Sec 16, T7S, R95W, 6th PM		Surface Equip Diagram
9. County: Garfield	10. Field Name: Parachute	Technical Info Page
11. Federal, Indian or State Lease Number: N/A		Other

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new perm.)	
Change of Surface Footage from Exterior Section Lines:	FNL/FSL <input type="checkbox"/> FEL/FWL <input type="checkbox"/>
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> attach directional survey
Bottomhole location Ctr/Tr, Sec, Twp, Rng, Mer	
Latitude	Distance to nearest property line
Longitude	Distance to nearest bldg, public rd, utility or RR
Ground Elevation	Distance to nearest lease line
	Is location in a High Density Area (rule 603b)? Yes/No <input type="checkbox"/>
	Distance to nearest well same formation
	Surface owner consultation date:
GPS DATA:	
Date of Measurement	PDOP Reading
	Instrument Operator's Name
<input type="checkbox"/> CHANGE SPACING UNIT	<input type="checkbox"/> Remove from surface bond
Formation	Signed surface use agreement attached
Formation Code	
Spacing order number	
Unit Acreage	
Unit configuration	
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):	<input type="checkbox"/> CHANGE WELL NAME
Effective Date:	From:
Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	To:
	Effective Date:
<input type="checkbox"/> ABANDONED LOCATION:	<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS
Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No	Date well shut in or temporarily abandoned:
Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No	Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No
Date Ready for inspection:	MIT required if shut in longer than two years. Date of last MIT
<input type="checkbox"/> SPUD DATE:	<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK	
Method used	*submit cbl and cement job summaries
Cementing tool setting/perf depth	
Cement volume	
Cement top	
Cement bottom	
Date	
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.	
Final reclamation will commence on approximately	
<input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Report of Work Done
Approximate Start Date:	Date Work Completed: July 2010
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)	
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: On-site disposal of cuttings
	<input checked="" type="checkbox"/> E&P Waste Disposal
	<input type="checkbox"/> Beneficial Reuse of E&P Waste
	<input type="checkbox"/> Status Update/Change of Remediation Plans for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Christopher C. Hines Date: 05-20-2011 Email: christopher.hines@encana.com
Print Name: Christopher C. Hines Title: Environmental Field Coordinator

COGCC Approved: Chris Camfield Title: FOR Date: 05/23/2011
CONDITIONS OF APPROVAL, IF ANY: Chris Camfield

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____ API Number: _____

2. Name of Operator: _____ OGCC Facility ID # _____

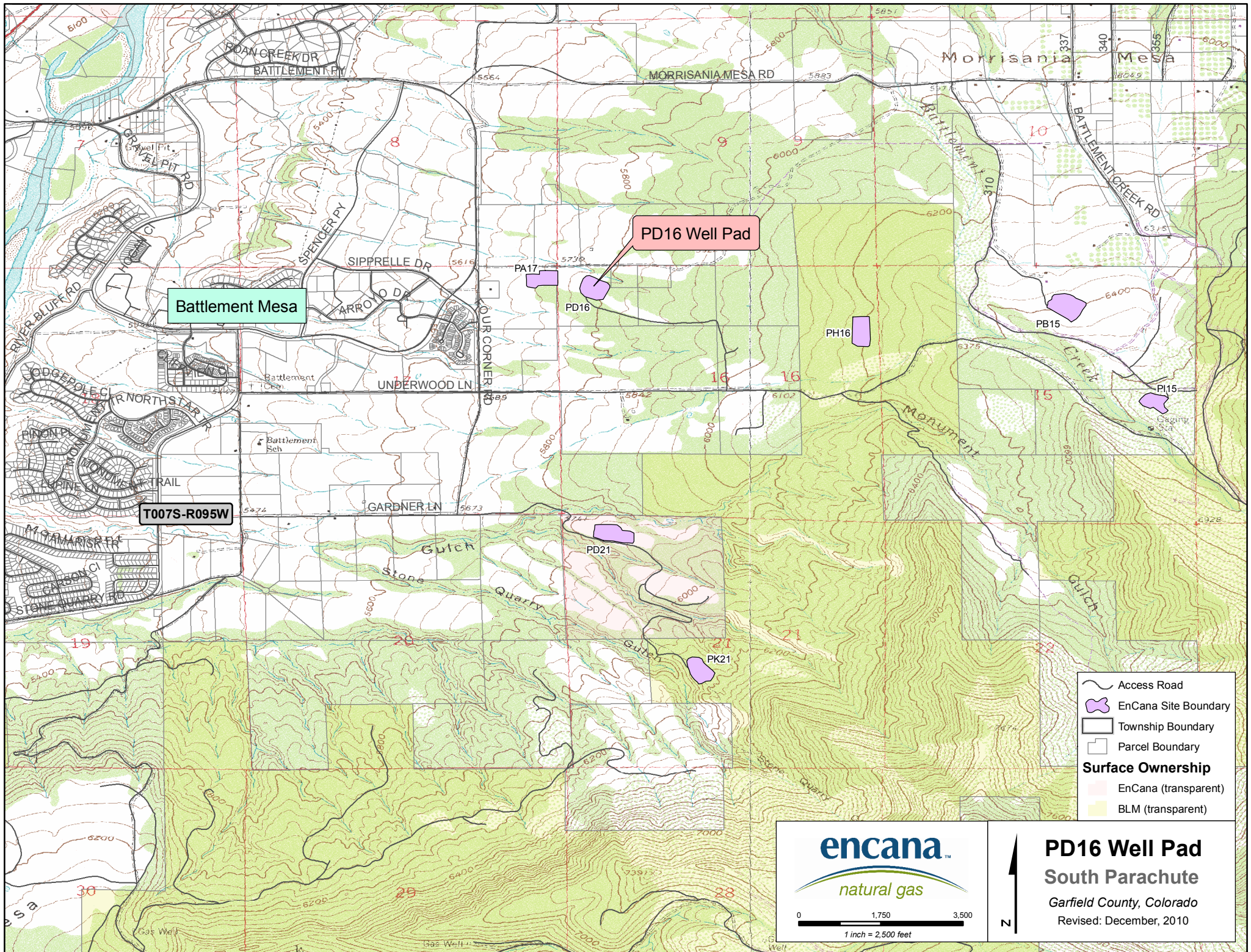
3. Well/Facility Name: _____ Well/Facility Number: _____



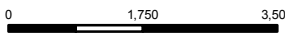
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____


This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS






1 inch = 2,500 feet



PD16 Well Pad
South Parachute
Garfield County, Colorado
Revised: December, 2010



Approximate Location of Cuttings Disposal

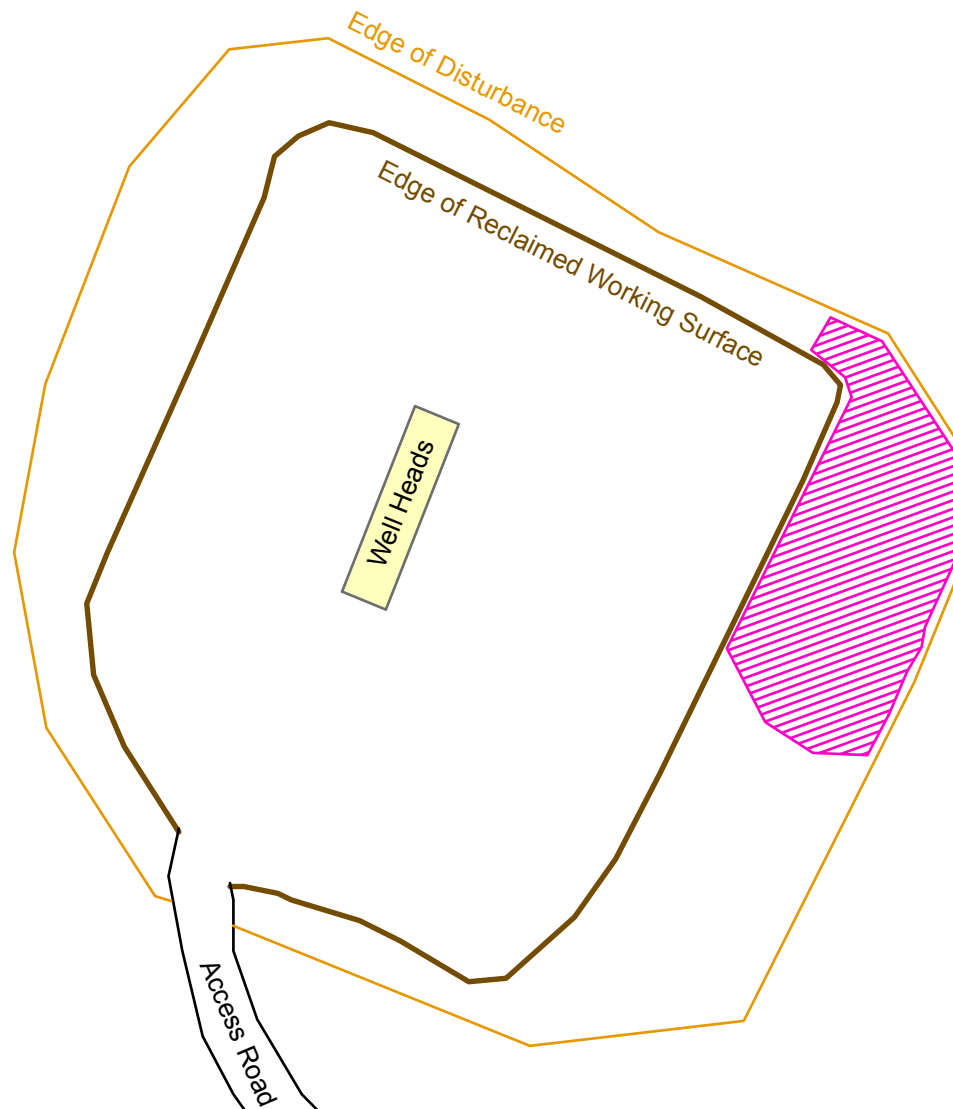


Figure 1 - PD16
Onsite Cuttings Disposal



0 50 100 150 200 250 Feet

1 inch = 100 feet

5/20/2011

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

[illegible]



02/18/10

Technical Report for

ENCANA

PD16 STS Sample

Accutest Job Number: T46794

Sampling Date: 02/01/10

Report to:

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

ATTN: Chris Hines

Total number of pages in report: 64



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)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

ENCANA

Job No: T46794

PD16 STS Sample

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T46794-1	02/01/10	11:00 AS	02/02/10	SO	Soil	PD16-STS-020110
T46794-1A	02/01/10	11:00 AS	02/02/10	SO	Soil	PD16-STS-020110
T46794-1B	02/01/10	11:00 AS	02/02/10	SO	Soil	PD16-STS-020110
T46794-1C	02/01/10	11:00 AS	02/02/10	SO	Soil	PD16-STS-020110

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA

Job No T46794

Site: PD16 STS Sample

Report Date 2/17/2010 4:50:01 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 02/01/2010 and were received at Accutest on 02/02/2010 properly preserved, at 5.2 Deg. C and intact. These Samples received an Accutest job number of T46794. 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: VY2415

- All samples were analyzed within the recommended method holding time.
- Sample(s) T47053-1MS, T47053-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Xylene (total) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP13985

- 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.
- Sample(s) T46794-1 have surrogates outside control limits. Probable cause due to matrix interference.
- T46794-1: Elevated reporting limits and internal standards are not within advisory limits due to matrix interference, final volume of 10ml. Confirmed by reanalysis.
- OP13985-BS for 2-Fluorobiphenyl: Recovery was adjusted for 10x spiking.
- OP13985-BS for Terphenyl-d14: Recovery was adjusted for 10x spiking.
- OP13985-BSD for 2-Fluorobiphenyl: Recovery was adjusted for 10x spiking.
- OP13985-BSD for Nitrobenzene-d5: Recovery was adjusted for 10x spiking.
- OP13985-BSD for Terphenyl-d14: Recovery was adjusted for 10x spiking.
- T46794-1 for 2-Fluorobiphenyl: Recovery was adjusted for 10x spiking.
- T46794-1 for Nitrobenzene-d5: Recovery was adjusted for 10x spiking.
- T46794-1 for Terphenyl-d14: Recovery was adjusted for 10x spiking.
- OP13985-BS for Nitrobenzene-d5: Recovery was adjusted for 10x spiking.
- OP13985-MB for Terphenyl-d14: Recovery was adjusted for 10x spiking.
- OP13985-MB for 2-Fluorobiphenyl: Recovery was adjusted for 10x spiking.
- OP13985-MB for Nitrobenzene-d5: Recovery was adjusted for 10x spiking.

Volatiles by GC By Method SW846 8015**Matrix** SO**Batch ID:** GEE2620

- All samples were analyzed within the recommended method holding time.
- Sample(s) T46997-9MS, T46997-9MSD 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:** OP13995

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T46630-2MS, T46630-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Duplicate Recovery(s) for TPH (C10-C28) are outside control limits. Probable cause due to matrix interference.
- 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.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP11081

- 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) T46794-1ADUP, T46794-1AMS, T46794-1AMSD, T46794-1ASDL were used as the QC samples for metals.

Matrix AQ

Batch ID: MP11110

- 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) T46794-1CDUP, T46794-1CSDL were used as the QC samples for metals.

Matrix SO

Batch ID: MP11082

- 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) T46794-1BDUP, T46794-1BMSD, T46794-1BSDL 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.

Matrix SO

Batch ID: MP11084

- 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) T46445-1ADUP, T46445-1AMS, T46445-1AMSD, T46445-1ASDL, T46445-1ADUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Arsenic, Cadmium, Chromium, Nickel, Selenium are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Arsenic, Cadmium, Selenium are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Duplicate for Lead, Selenium are outside control limits for sample MP11084-D1. High RPD due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Selenium, Arsenic, Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP11084-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP11084-D1 for Selenium: RPD acceptable due to low duplicate and sample concentrations.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP11064

- 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) T46598-2MS, T46598-2MSD, T46598-2DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP11064-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method EPA 120.1

Matrix AQ	Batch ID: GN20737
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T46794-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix SO	Batch ID: MP11110
------------------	--------------------------

- T46794-1C for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

Wet Chemistry By Method SM 2540 G

Matrix SO	Batch ID: GN20785
------------------	--------------------------

- Sample(s) T47043-2RDUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix SO	Batch ID: GN20701
------------------	--------------------------

- All method blanks for this batch meet method specific criteria.
- Sample(s) T46794-1DUP, T46794-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M

Matrix SO	Batch ID: R20894
------------------	-------------------------

- T46794-1 for Chromium, Trivalent: Calculated as: $(\text{Chromium}) - (\text{Chromium, Hexavalent})$

Wet Chemistry By Method SW846 9045C

Matrix SO	Batch ID: GN20629
------------------	--------------------------

- Sample(s) T46794-1DUP 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 Quality Objectives 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:	PD16-ST5-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Method:	SW846 8260B		
Project:	PD16 STS Sample		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0037755.D	1	02/10/10	JL	n/a	n/a	VY2415
Run #2							

	Initial Weight	Final Volume
Run #1	5.64 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	30.9	6.2	0.87	ug/kg	
108-88-3	Toluene	47.9	6.2	1.2	ug/kg	
100-41-4	Ethylbenzene	3.0	6.2	1.1	ug/kg	J
1330-20-7	Xylene (total)	43.4	19	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-121%
2037-26-5	Toluene-D8	122%		76-132%
460-00-4	4-Bromofluorobenzene	130%		73-165%
17060-07-0	1,2-Dichloroethane-D4	86%		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:	PD16-ST5-020110		
Lab Sample ID:	T46794-1	Date Sampled:	02/01/10
Matrix:	SO - Soil	Date Received:	02/02/10
Method:	SW846 8270C BY SIM SW846 3550B	Percent Solids:	71.6
Project:	PD16 STS Sample		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	H36911.D	1	02/08/10	SC	02/03/10	OP13985	EH1978
Run #2	H36912.D	10	02/08/10	SC	02/03/10	OP13985	EH1978

	Initial Weight	Final Volume
Run #1	30.5 g	10.0 ml
Run #2	30.5 g	10.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	92	15	ug/kg	
208-96-8	Acenaphthylene	ND	92	32	ug/kg	
120-12-7	Anthracene	ND	92	17	ug/kg	
56-55-3	Benzo(a)anthracene	37.4	92	15	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	92	49	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	92	49	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	92	92	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	92	60	ug/kg	
218-01-9	Chrysene	42.1	92	23	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	92	89	ug/kg	
206-44-0	Fluoranthene	71.6	92	20	ug/kg	J
86-73-7	Fluorene	ND	92	32	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	92	69	ug/kg	
90-12-0	1-Methylnaphthalene	309	92	17	ug/kg	
91-57-6	2-Methylnaphthalene	792	92	16	ug/kg	
91-20-3	Naphthalene	320	92	14	ug/kg	
85-01-8	Phenanthrene	125	92	13	ug/kg	
129-00-0	Pyrene	67.8	92	31	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66% ^c	0% ^b	10-127%
321-60-8	2-Fluorobiphenyl	96% ^c	0% ^b	11-133%
1718-51-0	Terphenyl-d14	54% ^c	0% ^b	15-187%

- (a) Elevated reporting limits and internal standards are not within advisory limits due to matrix interference, final volume of 10ml. Confirmed by reanalysis.
- (b) Outside control limits due to dilution.
- (c) Recovery was adjusted for 10x spiking.

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:	PD16-STS-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Method:	SW846 8015		
Project:	PD16 STS Sample		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE051762.D	1	02/10/10	FI	n/a	n/a	GEE2620
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.11 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	48.9	8.8	0.53	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	122%		46-127%
98-08-8	aaa-Trifluorotoluene	106%		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: PD16-ST5-020110**Lab Sample ID:** T46794-1**Date Sampled:** 02/01/10**Matrix:** SO - Soil**Date Received:** 02/02/10**Method:** SW846 8015 M SW846 3550B**Percent Solids:** 71.6**Project:** PD16 STS Sample

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC217657.D	1	02/05/10	EM	02/04/10	OP13995	GCC1047
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)	456	11	3.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	64%		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: PD16-STS-020110

Lab Sample ID: T46794-1

Matrix: SO - Soil

Date Sampled: 02/01/10

Date Received: 02/02/10

Percent Solids: 71.6

Project: PD16 STS Sample

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Arsenic	5.6	0.82	0.16	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Barium	5040	82	0.24	mg/kg	5	02/05/10	02/10/10	NS	SW846 6010B ³	SW846 3050B ⁵
Cadmium	0.082 U	0.41	0.082	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Chromium	21.1	0.82	0.057	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Copper	25.3	2.0	0.11	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Lead	13.8	0.82	0.33	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Mercury	0.029	0.022	0.00088	mg/kg	1	02/03/10	02/03/10	TW	SW846 7471A ¹	SW846 7471A ⁴
Nickel	15.5	3.3	0.11	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Selenium	0.73 B	0.82	0.20	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Silver	0.089 B	0.82	0.065	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵
Zinc	66.2	1.6	0.33	mg/kg	1	02/05/10	02/05/10	NS	SW846 6010B ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA4520

(2) Instrument QC Batch: MA4526

(3) Instrument QC Batch: MA4531

(4) Prep QC Batch: MP11064

(5) Prep QC Batch: MP11084

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:	PD16-ST5-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Project:	PD16 STS Sample		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.7 B	2.0	mg/kg	1	02/11/10 14:30	KD	SW846 3060/7196A
Chromium, Trivalent ^a	19.4	2.8	mg/kg	1	02/11/10 14:30	KD	SW846 6010/7196A M
Solids, Percent	71.6		%	1	02/14/10	MR	SM 2540 G
Specific Conductivity	870	1.0	umhos/cm	1	02/11/10 15:00	KD	EPA 120.1
pH	10.82		su	1	02/06/10 13:30	MC	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PD16-ST5-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1A	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Project:	PD16 STS Sample		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	0.890	0.20	0.0041	mg/l	1	02/05/10	02/05/10 NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4526
(2) Prep QC Batch: MP11081

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:	PD16-ST5-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1B	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Project:	PD16 STS Sample		

Total True Barium Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	9220	130	0.40	mg/kg	10	02/05/10	02/10/10 NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4531
(2) Prep QC Batch: MP11082

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:	PD16-STS-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1C	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Project:	PD16 STS Sample		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	1210	25	0.18	mg/l	5	02/10/10	02/10/10	NS	SW846 6010B ¹ LADNR 29B ³
Magnesium	20.5 B	25	0.039	mg/l	5	02/10/10	02/10/10	NS	SW846 6010B ¹ LADNR 29B ³
Sodium	2110	130	3.4	mg/l	25	02/10/10	02/12/10	NS	SW846 6010B ² LADNR 29B ³

- (1) Instrument QC Batch: MA4531
- (2) Instrument QC Batch: MA4534
- (3) Prep QC Batch: MP11110

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:	PD16-ST5-020110	Date Sampled:	02/01/10
Lab Sample ID:	T46794-1C	Date Received:	02/02/10
Matrix:	SO - Soil	Percent Solids:	71.6
Project:	PD16 STS Sample		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	16.5		ratio	1	02/12/10 02:04	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

SAMPLE INSPECTION FORM

Accutest Job Number: T46794 Client: EnCana Date/Time Received: 2/2/10 0930
 # of Coolers Received: 1 Thermometer #: 12-1 Temperature Adjustment Factor: +0.4
 Cooler Temps: #1: 5.2 #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 rec'd 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] 2/2/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: [Signature]

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

i:\mwalker\borris\samplemanagement

T46794: Chain of Custody

Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T46 799 DATE/TIME RECEIVED: 2/2/10 0930

CLIENT: England INITIALS: PF

[illegible]

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

T46794: Chain of Custody

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GC/MS 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

Page 1 of 1

Job Number: T46794

Account: ENCACOP ENCANA

Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2415-MB	Y0037749.D	1	02/10/10	JL	n/a	n/a	VY2415

The QC reported here applies to the following samples:

Method: SW846 8260B

T46794-1

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	110% 70-121%
2037-26-5	Toluene-D8	106% 76-132%
460-00-4	4-Bromofluorobenzene	92% 73-165%
17060-07-0	1,2-Dichloroethane-D4	92% 57-122%

Blank Spike Summary

Page 1 of 1

Job Number: T46794

Account: ENCACOP ENCANA

Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2415-BS	Y0037747.D	1	02/10/10	JL	n/a	n/a	VY2415

The QC reported here applies to the following samples:

Method: SW846 8260B

T46794-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.5	91	70-114
100-41-4	Ethylbenzene	50	42.7	85	60-119
108-88-3	Toluene	50	42.4	85	68-115
1330-20-7	Xylene (total)	150	135	90	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	70-121%
2037-26-5	Toluene-D8	105%	76-132%
460-00-4	4-Bromofluorobenzene	92%	73-165%
17060-07-0	1,2-Dichloroethane-D4	91%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T47053-1MS	Y0037758.D	10	02/10/10	JL	n/a	n/a	VY2415
T47053-1MSD	Y0037759.D	10	02/10/10	JL	n/a	n/a	VY2415
T47053-1	Y0037757.D	10	02/10/10	JL	n/a	n/a	VY2415

The QC reported here applies to the following samples:

Method: SW846 8260B

T46794-1

CAS No.	Compound	T47053-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		31600	27400	87	27600	87	1	70-114/38
100-41-4	Ethylbenzene	3840		31600	27500	75	28300	77	3	60-119/40
108-88-3	Toluene	17900		31600	42600	78	43600	81	2	68-115/38
1330-20-7	Xylene (total)	248000		94700	304000	59* a	321000	77	5	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T47053-1	Limits
1868-53-7	Dibromofluoromethane	107%	107%	107%	70-121%
2037-26-5	Toluene-D8	109%	110%	107%	76-132%
460-00-4	4-Bromofluorobenzene	116%	114%	119%	73-165%
17060-07-0	1,2-Dichloroethane-D4	90%	89%	89%	57-122%

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



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

Page 1 of 1

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13985-MB	H36855.D	1	02/04/10	SC	02/03/10	OP13985	EH1976

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T46794-1

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	64% ^a 10-127%
321-60-8	2-Fluorobiphenyl	36% ^a 11-133%
1718-51-0	Terphenyl-d14	104% ^a 15-187%

(a) Recovery was adjusted for 10x spiking.

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13985-BS ^a	H36853.D	1	02/04/10	SC	02/03/10	OP13985	EH1976
OP13985-BSD ^a	H36854.D	1	02/04/10	SC	02/03/10	OP13985	EH1976

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T46794-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	167	119	71	120	72	1	18-118/30
208-96-8	Acenaphthylene	167	74.9	45	75.8	45	1	35-125/30
120-12-7	Anthracene	167	117	70	113	68	3	24-116/30
56-55-3	Benzo(a)anthracene	167	126	76	123	74	2	32-132/30
50-32-8	Benzo(a)pyrene	167	115	69	115	69	0	36-130/30
205-99-2	Benzo(b)fluoranthene	167	127	76	130	78	2	35-134/30
191-24-2	Benzo(g,h,i)perylene	167	134	80	126	76	6	18-149/30
207-08-9	Benzo(k)fluoranthene	167	139	83	155	93	11	30-131/30
218-01-9	Chrysene	167	127	76	126	76	1	37-124/30
53-70-3	Dibenzo(a,h)anthracene	167	127	76	122	73	4	23-150/30
206-44-0	Fluoranthene	167	131	79	129	77	2	28-118/30
86-73-7	Fluorene	167	153	92	153	92	0	32-106/30
193-39-5	Indeno(1,2,3-cd)pyrene	167	131	79	125	75	5	18-150/30
90-12-0	1-Methylnaphthalene	167	70.8	42	67.8	41	4	10-128/30
91-57-6	2-Methylnaphthalene	167	111	67	117	70	5	28-113/30
91-20-3	Naphthalene	167	117	70	123	74	5	31-106/30
85-01-8	Phenanthrene	167	108	65	107	64	1	37-112/30
129-00-0	Pyrene	167	118	71	124	74	5	24-132/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	47% ^b	47% ^b	10-127%
321-60-8	2-Fluorobiphenyl	43% ^b	40% ^b	11-133%
1718-51-0	Terphenyl-d14	61% ^b	63% ^b	15-187%

(a) Recoveries were adjusted for 1:10 dilution of the 8270 spike amount.

(b) Recovery was adjusted for 10x spiking.



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: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2620-MB	EE051746.D	1	02/10/10	FI	n/a	n/a	GEE2620

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

T46794-1

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	93%	46-127%
98-08-8	aaa-Trifluorotoluene	104%	44-120%

Blank Spike Summary

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2620-BS	EE051741.D	1	02/10/10	FI	n/a	n/a	GEE2620

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

T46794-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.403	101	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	99%	46-127%
98-08-8	aaa-Trifluorotoluene	112%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T46997-9MS	EE051753.D	1	02/10/10	FI	n/a	n/a	GEE2620
T46997-9MSD	EE051754.D	1	02/10/10	FI	n/a	n/a	GEE2620
T46997-9	EE051749.D	1	02/10/10	FI	n/a	n/a	GEE2620

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

T46794-1

CAS No.	Compound	T46997-9 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	7.97		24.2	30.7	94	29.3	88	5	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T46997-9	Limits
460-00-4	4-Bromofluorobenzene	101%	102%	98%	46-127%
98-08-8	aaa-Trifluorotoluene	115%	111%	108%	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: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13995-MB	CC217639.D	1	02/04/10	EM	02/04/10	OP13995	GCC1047

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

T46794-1

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	41% 33-115%

Blank Spike Summary

Job Number: T46794
Account: ENCACOP ENCANA
Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13995-BS	CC217640.D	1	02/04/10	EM	02/04/10	OP13995	GCC1047

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

T46794-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	26.1	78	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	60%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T46794

Account: ENCACOP ENCANA

Project: PD16 STS Sample

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13995-MS	CC217641.D	1	02/04/10	EM	02/04/10	OP13995	GCC1047
OP13995-MSD	CC217642.D	1	02/04/10	EM	02/04/10	OP13995	GCC1047
T46630-2	CC217661.D	20	02/05/10	EM	02/04/10	OP13995	GCC1047

The QC reported here applies to the following samples:

Method: SW846 8015 M

T46794-1

CAS No.	Compound	T46630-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	745		42.6	143	-1412* ^a	146	-1390* ^a	2	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T46630-2	Limits
84-15-1	o-Terphenyl	58%	60%	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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11064
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/03/10

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

Associated samples MP11064: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11064
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/03/10 02/03/10

Metal	T46598-2 Original DUP		RPD	QC Limits	T46598-2 Original MS		Spikelot HGTXWS1 % Rec		QC Limits
Mercury	0.0	0.0068	200.0(a)	0-20	0.0	0.36	0.334	107.8	75-125

Associated samples MP11064: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11064
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/03/10

Metal	T46598-2 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	0.35	0.311	112.7	2.8	

Associated samples MP11064: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11064
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 02/03/10

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
Mercury	7.5	7.34	102.2 72-128

Associated samples MP11064: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11081
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

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	37.1	<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 MP11081: T46794-1A

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11081
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

02/05/10

02/05/10

Metal	T46794-1A		RPD	QC Limits	T46794-1A		Spikelot MPTW4	% Rec	QC Limits
	Original	DUP			Original	MS			
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	890	923	3.6	0-20	890	2740	1000	92.9	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 MP11081: T46794-1A

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11081
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

Metal	T46794-1A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	890	2640	1000	89.3	3.7	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP11081: T46794-1A

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11081
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1950	1000	97.4	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 MP11081: T46794-1A

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

9.2.3
9

SERIAL DILUTION RESULTS SUMMARY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11081
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

Metal	T46794-1A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	456	472	3.5	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 MP11081: T46794-1A

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11082
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

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	2.5	<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 MP11082: T46794-1B

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11082
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

02/05/10

Metal	T46794-1B		RPD	QC Limits	T46794-1B		Spikelot MPTW4	% Rec	QC Limits
	Original	DUP			Original	MS			
Aluminum									
Antimony									
Arsenic									
Barium	9220	9610	4.1	0-20	9220	9360	26.8	521.6(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 MP11082: T46794-1B

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11082
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

Metal	T46794-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	9220	8620	26	-2306.5a	8.2	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 MP11082: T46794-1B

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.

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

Associated samples MP11082: T46794-1B

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11082
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

Metal	T46794-1B		QC	
	Original	SDL 10:50%DIF	Limits	

Aluminum				
Antimony				
Arsenic				
Barium	139000	148000	6.0	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 MP11082: T46794-1B

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11084
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.076	<0.50
Barium	10	.007	.03	0.0025	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0030	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.014	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.049	<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	-0.062	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.059	<0.50
Silver	0.50	.043	.04	-0.0035	<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	0.032	<1.0

Associated samples MP11084: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11084
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

02/05/10

02/05/10

Metal	T46445-1A Original DUP		RPD	QC Limits	T46445-1A Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	7.4	8.6	15.0	0-20	7.4	29.3	30	73.1N	80-120
Barium	217	222	2.3	0-20	217	242	30	83.4	80-120
Beryllium									
Boron	anr								
Cadmium	0.0	0.0 (a)	NC	0-20	0.0	21.7	30	72.4N	80-120
Calcium									
Chromium	31.1	33.4	7.1	0-20	31.1	53.6	30	75.1N	80-120
Cobalt									
Copper	8.5	9.5	11.1	0-20	8.5	35.3	30	89.5	80-120
Iron									
Lead	12.8	23.3	58.2*(a)	0-20	12.8	44.9	30	107.1	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	14.4	15.9	9.9	0-20	14.4	38.2	30	79.4N	80-120
Potassium									
Selenium	0.39	0.60	42.4 (b)	0-20	0.39	21.0	30	68.8N	80-120
Silver	0.0	0.0	NC	0-20	0.0	25.0	30	83.4	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	43.1	45.1	4.5	0-20	43.1	67.9	30	82.8	80-120

Associated samples MP11084: T46794-1

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) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11084
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

Metal	T46445-1A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	7.4	27.8	28.9	70.7N	5.3	20
Barium	217	247	28.9	104.0	2.0	20
Beryllium						
Boron	anr					
Cadmium	0.0	21.7	28.9	75.2N	0.0	20
Calcium						
Chromium	31.1	54.5	28.9	81.1	1.7	20
Cobalt						
Copper	8.5	34.7	28.9	90.8	1.7	20
Iron						
Lead	12.8	40.1	28.9	94.6	11.3	20
Magnesium						
Manganese						
Molybdenum						
Nickel	14.4	37.6	28.9	80.4	1.6	20
Potassium						
Selenium	0.39	20.8	28.9	70.7N	1.0	20
Silver	0.0	24.9	28.9	86.3	0.4	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	43.1	69.5	28.9	91.5	2.3	20

Associated samples MP11084: T46794-1

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11084
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 02/05/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	147	158	93.0	82-118
Barium	343	348	98.6	81-119
Beryllium				
Boron	anr			
Cadmium	172	187	92.0	82-118
Calcium				
Chromium	87.9	89.5	98.2	79-121
Cobalt				
Copper	124	129	96.1	84-117
Iron				
Lead	153	172	89.0	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	92.6	99	93.5	81-119
Potassium				
Selenium	136	148	91.9	78-121
Silver	62.7	66	95.0	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	367	394	93.1	80-119

Associated samples MP11084: T46794-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11084
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/05/10

Metal	T46445-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	89.9	104	16.2*(a)	0-10
Barium	2650	3050	15.4*(a)	0-10
Beryllium				
Boron	anr			
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	379	443	16.9*(a)	0-10
Cobalt				
Copper	103	112	8.1	0-10
Iron				
Lead	155	190	21.9*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	176	201	14.3*(a)	0-10
Potassium				
Selenium	4.77	0.00	100.0(b)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	525	635	21.1*(a)	0-10

Associated samples MP11084: T46794-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11110
Matrix Type: AQUEOUS

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

Prep Date: 02/10/10

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	50.7	<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	12.6	<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	54.9	<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 MP11110: T46794-1C

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11110
Matrix Type: AQUEOUS

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

Prep Date: 02/10/10

Metal	T46794-1C		RPD	QC Limits
	Original	DUP		
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	1210000	1150000	5.1	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	20500	18700	9.2	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	2230000	2080000	1.4	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP11110: T46794-1C

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

9.5.2
9

SERIAL DILUTION RESULTS SUMMARY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

QC Batch ID: MP11110
Matrix Type: AQUEOUS

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

Prep Date: 02/10/10

Metal	T46794-1C			QC	
	Original	SDL	5:25 %DIF	Limits	
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	1210000	1140000	5.5	0-10	
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium	20500	21200	3.8	0-10	
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium	2230000	1930000	8.5	0-10	
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP11110: T46794-1C

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: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN20701	2.0	<2.0	mg/kg	40	37.5	93.8	80-120%
Specific Conductivity	GN20737	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN20701: T46794-1
Batch GN20737: T46794-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN20701	T46794-1	mg/kg	1.7 B	<2.0	11.3	0-20%
Solids, Percent	GN20785	T47043-2R	%	85.7	85.5	0.2	0-5%
Specific Conductivity	GN20737	T46794-1	umhos/cm	870	870	0.0	0-20%
pH	GN20629	T46794-1	su	10.82	10.89	0.6	0-20%

Associated Samples:

Batch GN20629: T46794-1

Batch GN20701: T46794-1

Batch GN20737: T46794-1

Batch GN20785: T46794-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T46794
Account: ENCACOP - ENCANA
Project: PD16 STS Sample

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN20701	T46794-1	mg/kg	1.7 B	40	37.8	90.1	75-125%

Associated Samples:

Batch GN20701: T46794-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

ANALYTICAL REPORT

Job Number: 280-1486-1

Job Description: PD16-Cuttings-031710

For:
EnCana Oil & Gas, Inc. (USA)
2717 County Road 215
Suite 100
Parachute, CO 81635
Attention: Chris Hines



Approved for release.
Lori A Parsons
Project Manager I
3/25/2010 7:40 PM

Lori A Parsons
Project Manager I
lori.parsons@testamericainc.com
03/25/2010

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com



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CASE NARRATIVE

Client: EnCana Oil & Gas, Inc. (USA)

Project: PD16-Cuttings-031710

Report Number: 280-1486-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The sample was received on 03/18/2010; the sample arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.8 degrees C.

GASOLINE RANGE ORGANICS (GRO)

Sample PD16-CUTTINGS-031710 (280-1486-1) was analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B - GRO. The sample was analyzed on 03/22/2010.

The sample exhibited a surrogate recovery below the control limits for a,a,a-trifluorotoluene due to matrix interference. The surrogate was in control in the Method Blank and LCS indicating the analytical system was within control. The laboratory also noted the sample had the surrogate peak split manually due to a component of the target analyte GRO co-eluting with the surrogate peak.

Gasoline Range Organics (GRO)-C6-C10 was detected in method blank MB 280-7961/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Also the detection in the sample was greater than 10Xs the detection in the Method Blank.

No other difficulties were encountered during the GRO analysis.

All other quality control parameters were within the acceptance limits.

DIESEL RANGE ORGANICS

Sample PD16-CUTTINGS-031710 (280-1486-1) was analyzed for diesel range organics in accordance with EPA SW-846 Method 8015B - DRO. The sample was prepared on 03/19/2010 and analyzed on 03/23/2010.

No difficulties were encountered during the DRO analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
280-1486-1	PD16-CUTTINGS-031710				
Gasoline Range Organics (GRO)-C6-C10		17 B	1.2	mg/Kg	8015B
C22-C36		30	12	mg/Kg	8015D
C10-C22		54	3.8	mg/Kg	8015D

METHOD SUMMARY

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Gasoline Range Organics - (GC)	TAL DEN	SW846 8015B	
Purge and Trap	TAL DEN		SW846 5030B
Diesel Range Organics (DRO)	TAL DEN	SW846 8015D	
Ultrasonic Extraction	TAL DEN		SW846 3550C

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Method	Analyst	Analyst ID
SW846 8015B	Ream, Brian E	BER
SW846 8015D	Pavlovich, Adam M	AMP

SAMPLE SUMMARY

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-1486-1	PD16-CUTTINGS-031710	Solid	03/17/2010 1110	03/18/2010 0900

SAMPLE RESULTS

Analytical Data

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Client Sample ID: PD16-CUTTINGS-031710

Lab Sample ID: 280-1486-1

Date Sampled: 03/17/2010 1110

Client Matrix: Solid

Date Received: 03/18/2010 0900

8015B Gasoline Range Organics - (GC)

Method:	8015B	Analysis Batch: 280-8218	Instrument ID:	GCV_L
Preparation:	5030B	Prep Batch: 280-7961	Initial Weight/Volume:	10.17 g
Dilution:	1.0		Final Weight/Volume:	500 mL
Date Analyzed:	03/22/2010 1313		Injection Volume:	5 mL
Date Prepared:	03/19/2010 1313		Result Type:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Gasoline Range Organics (GRO)-C6-C10		17	B	0.32	1.2

Surrogate	%Rec	Qualifier	Acceptance Limits
a,a,a-Trifluorotoluene	73	X	77 - 123

Analytical Data

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Client Sample ID: PD16-CUTTINGS-031710

Lab Sample ID: 280-1486-1

Date Sampled: 03/17/2010 1110

Client Matrix: Solid

Date Received: 03/18/2010 0900

8015D Diesel Range Organics (DRO)

Method:	8015D	Analysis Batch: 280-8322	Instrument ID:	GCS_U
Preparation:	3550C	Prep Batch: 280-7928	Initial Weight/Volume:	31.2 g
Dilution:	1.0		Final Weight/Volume:	1 mL
Date Analyzed:	03/23/2010 0043		Injection Volume:	1 uL
Date Prepared:	03/19/2010 1430		Result Type:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
C22-C36		30		3.8	12
C10-C22		54		0.96	3.8

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	75		49 - 115

DATA REPORTING QUALIFIERS

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Lab Section	Qualifier	Description
GC VOA	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits

QUALITY CONTROL RESULTS

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC VOA					
Prep Batch: 280-7961					
LCS 280-7961/2-A	Lab Control Sample	T	Solid	5030B	
LCSD 280-7961/3-A	Lab Control Sample Duplicate	T	Solid	5030B	
MB 280-7961/1-A	Method Blank	T	Solid	5030B	
280-1486-1	PD16-CUTTINGS-031710	T	Solid	5030B	
280-1486-B-2-B MS	Matrix Spike	T	Solid	5030B	
280-1486-B-2-C MSD	Matrix Spike Duplicate	T	Solid	5030B	
Analysis Batch:280-8218					
LCS 280-7961/2-A	Lab Control Sample	T	Solid	8015B	280-7961
LCSD 280-7961/3-A	Lab Control Sample Duplicate	T	Solid	8015B	280-7961
MB 280-7961/1-A	Method Blank	T	Solid	8015B	280-7961
280-1486-1	PD16-CUTTINGS-031710	T	Solid	8015B	280-7961
280-1486-B-2-B MS	Matrix Spike	T	Solid	8015B	280-7961
280-1486-B-2-C MSD	Matrix Spike Duplicate	T	Solid	8015B	280-7961
Report Basis					
T = Total					
GC Semi VOA					
Prep Batch: 280-7928					
LCS 280-7928/2-A	Lab Control Sample	T	Solid	3550C	
MB 280-7928/1-A	Method Blank	T	Solid	3550C	
280-1486-1	PD16-CUTTINGS-031710	T	Solid	3550C	
280-1508-A-15-B MS	Matrix Spike	T	Solid	3550C	
280-1508-A-15-C MSD	Matrix Spike Duplicate	T	Solid	3550C	
Analysis Batch:280-8322					
LCS 280-7928/2-A	Lab Control Sample	T	Solid	8015D	280-7928
MB 280-7928/1-A	Method Blank	T	Solid	8015D	280-7928
280-1486-1	PD16-CUTTINGS-031710	T	Solid	8015D	280-7928
280-1508-A-15-B MS	Matrix Spike	T	Solid	8015D	280-7928
280-1508-A-15-C MSD	Matrix Spike Duplicate	T	Solid	8015D	280-7928
Report Basis					
T = Total					

TestAmerica Denver

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Surrogate Recovery Report**8015B Gasoline Range Organics - (GC)****Client Matrix: Solid**

Lab Sample ID	Client Sample ID	TFT1 %Rec
280-1486-1	PD16-CUTTINGS-031 710	73X
MB 280-7961/1-A		102
LCS 280-7961/2-A		101
LCSD 280-7961/3-A		103
280-1486-B-2-B MS		77
280-1486-B-2-C MSD		80

Surrogate

Acceptance Limits

TFT = a,a,a-Trifluorotoluene

77-123

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Surrogate Recovery Report

8015D Diesel Range Organics (DRO)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	OTPH1 %Rec
280-1486-1	PD16-CUTTINGS-031 710	75
MB 280-7928/1-A		90
LCS 280-7928/2-A		66
280-1508-A-15-B MS		91
280-1508-A-15-C MSD		69

Surrogate	Acceptance Limits
OTPH = o-Terphenyl	49-115

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Method Blank - Batch: 280-7961

Lab Sample ID: MB 280-7961/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1719
Date Prepared: 03/19/2010 1313

Analysis Batch: 280-8218
Prep Batch: 280-7961
Units: mg/Kg

Method: 8015B Preparation: 5030B

Instrument ID: GCV_L
Lab File ID: 217F1201.D
Initial Weight/Volume: 10.04 g
Final Weight/Volume: 500 mL
Injection Volume: 5 mL
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Gasoline Range Organics (GRO)-C6-C10	0.455	J	0.32	1.2

Surrogate	% Rec	Acceptance Limits
a,a,a-Trifluorotoluene	102	77 - 123

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-7961

Method: 8015B Preparation: 5030B

LCS Lab Sample ID: LCS 280-7961/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1153
Date Prepared: 03/19/2010 1313

Analysis Batch: 280-8218
Prep Batch: 280-7961
Units: mg/Kg

Instrument ID: GCV_L
Lab File ID: 125F0401.D
Initial Weight/Volume: 10.02 g
Final Weight/Volume: 500 mL
Injection Volume: 5 mL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 280-7961/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1231
Date Prepared: 03/19/2010 1313

Analysis Batch: 280-8218
Prep Batch: 280-7961
Units: mg/Kg

Instrument ID: GCV_L
Lab File ID: 126F0501.D
Initial Weight/Volume: 10.03 g
Final Weight/Volume: 500 mL
Injection Volume: 5 mL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Gasoline Range Organics (GRO)-C6-C10	118	126	85 - 153	6	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
a,a,a-Trifluorotoluene	101		103		77 - 123		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Laboratory Control/ Laboratory Duplicate Data Report - Batch: 280-7961

Method: 8015B
Preparation: 5030B

LCS Lab Sample ID: LCS 280-7961/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1153
Date Prepared: 03/19/2010 1313

Units: mg/Kg

LCSD Lab Sample ID: LCSD 280-7961/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1231
Date Prepared: 03/19/2010 1313

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Gasoline Range Organics (GRO)-C6-C10	5.49	5.48	6.47	6.90

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-7961

Method: 8015B
Preparation: 5030B

MS Lab Sample ID: 280-1486-B-2-B MS
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1429
Date Prepared: 03/19/2010 1313

Analysis Batch: 280-8218
Prep Batch: 280-7961

Instrument ID: GCV_L
Lab File ID: 129F0801.D
Initial Weight/Volume: 10.07 g
Final Weight/Volume: 500 mL
Injection Volume: 5 mL
Column ID: PRIMARY

MSD Lab Sample ID: 280-1486-B-2-C MSD
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 1507
Date Prepared: 03/19/2010 1313

Analysis Batch: 280-8218
Prep Batch: 280-7961

Instrument ID: GCV_L
Lab File ID: 130F0901.D
Initial Weight/Volume: 10.08 g
Final Weight/Volume: 500 mL
Injection Volume: 5 mL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Gasoline Range Organics (GRO)-C6-C10	128	134	85 - 153	1	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
a,a,a-Trifluorotoluene	77	80	77 - 123

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Matrix Spike/

Matrix Spike Duplicate Data Report - Batch: 280-7961

Method: 8015B

Preparation: 5030B

MS Lab Sample ID: 280-1486-B-2-B MS

Units: mg/Kg

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 03/22/2010 1429

Date Prepared: 03/19/2010 1313

MSD Lab Sample ID: 280-1486-B-2-C MSD

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 03/22/2010 1507

Date Prepared: 03/19/2010 1313

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Gasoline Range Organics (GRO)-C6-C10	22	5.46	5.46	28.8	29.1

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Method Blank - Batch: 280-7928

Lab Sample ID: MB 280-7928/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/22/2010 2348
Date Prepared: 03/19/2010 1430

Analysis Batch: 280-8322
Prep Batch: 280-7928
Units: mg/Kg

Method: 8015D Preparation: 3550C

Instrument ID: GCS_U
Lab File ID: 006B0601.D
Initial Weight/Volume: 31.2 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
C22-C36	ND		3.8	12
C10-C22	ND		0.96	3.8
Surrogate	% Rec		Acceptance Limits	
o-Terphenyl	90		49 - 115	

Lab Control Sample - Batch: 280-7928

Lab Sample ID: LCS 280-7928/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2010 0015
Date Prepared: 03/19/2010 1430

Analysis Batch: 280-8322
Prep Batch: 280-7928
Units: mg/Kg

Method: 8015D Preparation: 3550C

Instrument ID: GCS_U
Lab File ID: 007B0701.D
Initial Weight/Volume: 31.3 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
C10-C22	63.9	63.3	99	50 - 150	
Surrogate	% Rec		Acceptance Limits		
o-Terphenyl	66		49 - 115		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-7928

Method: 8015D
Preparation: 3550C

MS Lab Sample ID: 280-1508-A-15-B MS Analysis Batch: 280-8322
Client Matrix: Solid Prep Batch: 280-7928
Dilution: 1.0
Date Analyzed: 03/23/2010 1056
Date Prepared: 03/19/2010 1430

Instrument ID: GCS_U
Lab File ID: 030B3001.D
Initial Weight/Volume: 31.0 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

MSD Lab Sample ID: 280-1508-A-15-C MSD Analysis Batch: 280-8322
Client Matrix: Solid Prep Batch: 280-7928
Dilution: 1.0
Date Analyzed: 03/23/2010 1124
Date Prepared: 03/19/2010 1430

Instrument ID: GCS_U
Lab File ID: 031B3101.D
Initial Weight/Volume: 31.8 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
C10-C22	94	87	50 - 150	10	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
o-Terphenyl	91	69	49 - 115

Matrix Spike/ Matrix Spike Duplicate Data Report - Batch: 280-7928

Method: 8015D
Preparation: 3550C

MS Lab Sample ID: 280-1508-A-15-B MS Units: mg/Kg
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2010 1056
Date Prepared: 03/19/2010 1430

MSD Lab Sample ID: 280-1508-A-15-C MSD
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2010 1124
Date Prepared: 03/19/2010 1430

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
C10-C22	ND	64.5	62.9	60.5	54.8

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Laboratory Chronicle

Lab ID: 280-1486-1

Client ID: PD16-CUTTINGS-031710

Sample Date/Time: 03/17/2010 11:10

Received Date/Time: 03/18/2010 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-1486-A-1-B		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	280-1486-A-1-B		280-8218	280-7961	03/22/2010 13:13	1	TAL DEN	BER
P:3550C	280-1486-A-1-A		280-8322	280-7928	03/19/2010 14:30	1	TAL DEN	KJH
A:8015D	280-1486-A-1-A		280-8322	280-7928	03/23/2010 00:43	1	TAL DEN	AMP

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-7961/1-A		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	MB 280-7961/1-A		280-8218	280-7961	03/22/2010 17:19	1	TAL DEN	BER
P:3550C	MB 280-7928/1-A		280-8322	280-7928	03/19/2010 14:30	1	TAL DEN	KJH
A:8015D	MB 280-7928/1-A		280-8322	280-7928	03/22/2010 23:48	1	TAL DEN	AMP

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-7961/2-A		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	LCS 280-7961/2-A		280-8218	280-7961	03/22/2010 11:53	1	TAL DEN	BER
P:3550C	LCS 280-7928/2-A		280-8322	280-7928	03/19/2010 14:30	1	TAL DEN	KJH
A:8015D	LCS 280-7928/2-A		280-8322	280-7928	03/23/2010 00:15	1	TAL DEN	AMP

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCSD 280-7961/3-A		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	LCSD 280-7961/3-A		280-8218	280-7961	03/22/2010 12:31	1	TAL DEN	BER

Lab ID: MS

Client ID: N/A

Sample Date/Time: 03/16/2010 14:30

Received Date/Time: 03/18/2010 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-1486-B-2-B MS		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	280-1486-B-2-B MS		280-8218	280-7961	03/22/2010 14:29	1	TAL DEN	BER
P:3550C	280-1508-A-15-B MS		280-8322	280-7928	03/19/2010 14:30	1	TAL DEN	KJH
A:8015D	280-1508-A-15-B MS		280-8322	280-7928	03/23/2010 10:56	1	TAL DEN	AMP

Quality Control Results

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Laboratory Chronicle

Lab ID: MSD

Client ID: N/A

Sample Date/Time: 03/16/2010 14:30

Received Date/Time: 03/18/2010 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-1486-B-2-C MSD		280-8218	280-7961	03/19/2010 13:13	1	TAL DEN	TEM
A:8015B	280-1486-B-2-C MSD		280-8218	280-7961	03/22/2010 15:07	1	TAL DEN	BER
P:3550C	280-1508-A-15-C MSD		280-8322	280-7928	03/19/2010 14:30	1	TAL DEN	KJH
A:8015D	280-1508-A-15-C MSD		280-8322	280-7928	03/23/2010 11:24	1	TAL DEN	AMP

Lab References:

TAL DEN = TestAmerica Denver

Login Sample Receipt Check List

Client: EnCana Oil & Gas, Inc. (USA)

Job Number: 280-1486-1

Login Number: 1486

List Source: TestAmerica Denver

Creator: Bindel, Aaron M

List Number: 1

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	



11/18/09

Technical Report for

ENCANA

EnCana Oil & Gas (USA) Inc.

ENCANA PD16 BACKGROUND

Accutest Job Number: T41706

Sampling Date: 11/05/09

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: **63**



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)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

ENCANA

Job No: T41706

EnCana Oil & Gas (USA) Inc.
Project No: ENCANA PD16 BACKGROUND

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
T41706-1	11/05/09	14:30	KR	11/07/09	SO	Soil	ENCANA_PD16_BACKGROUND_110509
T41706-1A	11/05/09	14:30	KR	11/07/09	SO	Soil	ENCANA_PD16_BACKGROUND_110509
T41706-1B	11/05/09	14:30	KR	11/07/09	SO	Soil	ENCANA_PD16_BACKGROUND_110509
T41706-1C	11/05/09	14:30	KR	11/07/09	SO	Soil	ENCANA_PD16_BACKGROUND_110509

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA

Job No T41706

Site: EnCana Oil & Gas (USA) Inc.

Report Date 11/18/2009 11:05:46 A

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 11/05/2009 and were received at Accutest on 11/07/2009 properly preserved, at 2.8 Deg. C and intact. These Samples received an Accutest job number of T41706. 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: VM890
------------------	------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T41657-2MS, T41657-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Benzene, Ethylbenzene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Benzene, Ethylbenzene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Sample(s) T41657-2MS, T41657-2MSD have surrogates outside control limits. Probable cause due to matrix interference.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP13432
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T41708-1MS, T41708-1MSD 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: GEE2499
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T41710-1MS, T41710-1MSD 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: OP13458
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T41656-1MSD, T41656-1MS, T41656-1MSD 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.
- Sample(s) OP13458-MS, OP13458-MSD have surrogates outside control limits. Probable cause due to matrix interference.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP10654

- 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) T39947-4CDUP were used as the QC samples for metals.

Matrix AQ

Batch ID: MP10656

- 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) T39947-4ADUP, T39947-4AMS, T39947-4AMSD, T39947-4ASDL were used as the QC samples for metals.

Matrix SO

Batch ID: MP10642

- 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) T39947-4DUP, T39947-4MS, T39947-4MSD, T39947-4SDL, T39947-4DUP 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 Copper, Nickel are outside control limits for sample MP10642-D1. High RPD due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Arsenic, Cadmium, Silver, Lead, Nickel, Zinc are outside control limits for sample MP10642-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix SO

Batch ID: MP10655

- 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) T41706-1BDUP, T41706-1BMSD, T41706-1BSDL 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 MP10655-SD1. Probable cause due to sample homogeneity.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP10636

- 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) T39947-4DUP, T39947-4MS, T39947-4MSD were used as the QC samples for metals.

Wet Chemistry By Method EPA 120.1

Matrix AQ

Batch ID: GN18728

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41657-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix SO

Batch ID: MP10654

- T41706-1C for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

Wet Chemistry By Method SM 2540 G

Matrix SO

Batch ID: GN18730

- Sample(s) T42037-1DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix SO

Batch ID: GN18693

- All method blanks for this batch meet method specific criteria.
- Sample(s) T41657-1DUP, T41657-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M

Matrix SO

Batch ID: R19666

- T41706-1 for Chromium, Trivalent: Calculated as: $(\text{Chromium}) - (\text{Chromium, Hexavalent})$

Wet Chemistry By Method SW846 9045C

Matrix SO

Batch ID: GN18662

- Sample(s) T41789-14DUP 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 Quality Objectives 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: ENCANA_PD16_BACKGROUND_110509**Lab Sample ID:** T41706-1**Date Sampled:** 11/05/09**Matrix:** SO - Soil**Date Received:** 11/07/09**Method:** SW846 8260B**Percent Solids:** 63.5**Project:** EnCana Oil & Gas (USA) Inc.

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0022077.D	1	11/11/09	AH	n/a	n/a	VM890
Run #2							

	Initial Weight	Final Volume
Run #1	5.04 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	7.8	1.1	ug/kg	
108-88-3	Toluene	ND	7.8	1.5	ug/kg	
100-41-4	Ethylbenzene	ND	7.8	1.4	ug/kg	
1330-20-7	Xylene (total)	ND	23	3.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		70-121%
2037-26-5	Toluene-D8	119%		76-132%
460-00-4	4-Bromofluorobenzene	131%		73-165%
17060-07-0	1,2-Dichloroethane-D4	80%		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: ENCANA_PD16_BACKGROUND_110509**Lab Sample ID:** T41706-1**Date Sampled:** 11/05/09**Matrix:** SO - Soil**Date Received:** 11/07/09**Method:** SW846 8270C BY SIM SW846 3550B**Percent Solids:** 63.5**Project:** EnCana Oil & Gas (USA) Inc.

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H35965.D	1	11/10/09	SC	11/09/09	OP13432	EH1934
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	10	1.7	ug/kg	
208-96-8	Acenaphthylene	ND	10	3.6	ug/kg	
120-12-7	Anthracene	ND	10	2.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	10	1.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	10	5.5	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	10	5.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	10	10	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	10	6.7	ug/kg	
218-01-9	Chrysene	ND	10	2.5	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	10	10	ug/kg	
206-44-0	Fluoranthene	ND	10	2.3	ug/kg	
86-73-7	Fluorene	ND	10	3.6	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10	7.7	ug/kg	
90-12-0	1-Methylnaphthalene	ND	10	1.9	ug/kg	
91-57-6	2-Methylnaphthalene	ND	10	1.8	ug/kg	
91-20-3	Naphthalene	ND	10	1.6	ug/kg	
85-01-8	Phenanthrene	ND	10	1.4	ug/kg	
129-00-0	Pyrene	ND	10	3.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	87%		18-129%
4165-60-0	Nitrobenzene-d5	43%		10-127%
321-60-8	2-Fluorobiphenyl	48%		11-133%
1718-51-0	Terphenyl-d14	144%		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:	ENCANA_PD16_BACKGROUND_110509				
Lab Sample ID:	T41706-1	Date Sampled:	11/05/09		
Matrix:	SO - Soil	Date Received:	11/07/09		
Method:	SW846 8015	Percent Solids:	63.5		
Project:	EnCana Oil & Gas (USA) Inc.				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE049388.D	1	11/13/09	FI	n/a	n/a	GEE2499
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.65 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	9.8	0.59	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	97%		46-127%
98-08-8	aaa-Trifluorotoluene	107%		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: ENCANA_PD16_BACKGROUND_110509**Lab Sample ID:** T41706-1**Date Sampled:** 11/05/09**Matrix:** SO - Soil**Date Received:** 11/07/09**Percent Solids:** 63.5**Project:** EnCana Oil & Gas (USA) Inc.

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.6	0.92	0.18	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Cadmium	0.40 B	0.46	0.092	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Chromium	26.0	0.92	0.065	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Copper	22.5	2.3	0.12	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Lead	19.3	0.92	0.37	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Mercury	0.020 B	0.024	0.00097	mg/kg	1	11/12/09	11/12/09 TW	SW846 7471A ¹	SW846 7471A ³
Nickel	24.6	3.7	0.12	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Selenium	0.22 U	0.92	0.22	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Silver	0.13 B	0.92	0.074	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴
Zinc	68.8	1.8	0.37	mg/kg	1	11/12/09	11/14/09 NS	SW846 6010B ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA4391

(2) Instrument QC Batch: MA4396

(3) Prep QC Batch: MP10636

(4) Prep QC Batch: MP10642

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:	ENCANA_PD16_BACKGROUND_110509			Date Sampled:	11/05/09
Lab Sample ID:	T41706-1			Date Received:	11/07/09
Matrix:	SO - Soil			Percent Solids:	63.5
Project:	EnCana Oil & Gas (USA) Inc.				

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.8 B	2.0	mg/kg	1	11/13/09 09:00	KD	SW846 3060/7196A
Chromium, Trivalent ^a	24.2	2.9	mg/kg	1	11/14/09 17:01	NS	SW846 6010/7196A M
Solids, Percent	63.5		%	1	11/13/09	AA	SM 2540 G
Specific Conductivity	176	1.0	umhos/cm	1	11/13/09 12:00	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

Report of Analysis

Client Sample ID:	ENCANA_PD16_BACKGROUND_110509			
Lab Sample ID:	T41706-1A			Date Sampled: 11/05/09
Matrix:	SO - Soil			Date Received: 11/07/09
				Percent Solids: 63.5
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	1.07	0.20	0.0042	mg/l	1	11/15/09	11/16/09 NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4397
(2) Prep QC Batch: MP10656

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:	ENCANA_PD16_BACKGROUND_110509			Date Sampled:	11/05/09
Lab Sample ID:	T41706-1B			Date Received:	11/07/09
Matrix:	SO - Soil			Percent Solids:	63.5
Project:	EnCana Oil & Gas (USA) Inc.				

Total True Barium Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	269	15	0.046	mg/kg	1	11/15/09	11/16/09 NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4397
(2) Prep QC Batch: MP10655

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:	ENCANA_PD16_BACKGROUND_110509			Date Sampled:	11/05/09
Lab Sample ID:	T41706-1C			Date Received:	11/07/09
Matrix:	SO - Soil			Percent Solids:	63.5
Project:	EnCana Oil & Gas (USA) Inc.				

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Calcium	228	25	0.18	mg/l	5	11/15/09	11/16/09	NS	SW846 6010B ¹	LADNR 29B ²
Magnesium	23.6 B	25	0.039	mg/l	5	11/15/09	11/16/09	NS	SW846 6010B ¹	LADNR 29B ²
Sodium	27.6	25	0.67	mg/l	5	11/15/09	11/16/09	NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4397
(2) Prep QC Batch: MP10654

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:	ENCANA_PD16_BACKGROUND_110509	Date Sampled:	11/05/09
Lab Sample ID:	T41706-1C	Date Received:	11/07/09
Matrix:	SO - Soil	Percent Solids:	63.5
Project:	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	0.465		ratio	1	11/16/09 12:46	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

4.1

4

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 rec'd 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 on COC but not received
	Trip Blank received but not on COC
	Trip Blank not intact
	Received Water Trip Blank
	Received Soil TB

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

Number of Encores? _____
 Number of 5035 kts? _____
 Number of lab-filtered metals? _____

TECHNICIAN SIGNATURE/DATE:

INFORMATION AND SAMPLE LABELING VERIFIED BY:

CORRECTIVE ACTIONS

Client Representative Notified:

Date:

By Accutest Representative:

Via: Phone Email

Client Instructions:

22

CLIENT:

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

Rev 8/13/01 ewp

Page 3 of 3



GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM890-MB	M0022072.D 1		11/11/09	AH	n/a	n/a	VM890

The QC reported here applies to the following samples:

Method: SW846 8260B

T41706-1

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	115% 76-132%
460-00-4	4-Bromofluorobenzene	114% 73-165%
17060-07-0	1,2-Dichloroethane-D4	86% 57-122%

Blank Spike Summary

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM890-BS	M0022070.D 1		11/11/09	AH	n/a	n/a	VM890

The QC reported here applies to the following samples:

Method: SW846 8260B

T41706-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	42.0	84	70-114
100-41-4	Ethylbenzene	50	48.5	97	60-119
108-88-3	Toluene	50	49.1	98	68-115
1330-20-7	Xylene (total)	150	147	98	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	88%	70-121%
2037-26-5	Toluene-D8	114%	76-132%
460-00-4	4-Bromofluorobenzene	111%	73-165%
17060-07-0	1,2-Dichloroethane-D4	83%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T41657-2MS	M0022074.D	1	11/11/09	AH	n/a	n/a	VM890
T41657-2MSD	M0022075.D	1	11/11/09	AH	n/a	n/a	VM890
T41657-2	M0022073.D	1	11/11/09	AH	n/a	n/a	VM890

The QC reported here applies to the following samples:

Method: SW846 8260B

T41706-1

CAS No.	Compound	T41657-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.2	J	51.6	35.1	60*	32.6	54*	7	70-114/38
100-41-4	Ethylbenzene	1.5	J	51.6	26.3	48*	22.3	40*	16	60-119/40
108-88-3	Toluene	19.3		51.6	64.6	88	58.2	74	10	68-115/38
1330-20-7	Xylene (total)	7.5	J	155	79.3	46*	68.4	39*	15	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T41657-2	Limits
1868-53-7	Dibromofluoromethane	96%	98%	101%	70-121%
2037-26-5	Toluene-D8	199% * a	199% * a	191% * a	76-132%
460-00-4	4-Bromofluorobenzene	185% * a	183% * a	167% * a	73-165%
17060-07-0	1,2-Dichloroethane-D4	86%	88%	87%	57-122%

(a) Outside control limits due to matrix interference. Confirmed by MS/MSD.



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

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

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

T41706-1

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

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

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

T41706-1

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

Page 1 of 1

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

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

T41706-1

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

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2499-MB	EE049386.D	1	11/13/09	FI	n/a	n/a	GEE2499

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

T41706-1

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	96%	46-127%
98-08-8	aaa-Trifluorotoluene	106%	44-120%

Blank Spike Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2499-BS	EE049382.D	1	11/12/09	FI	n/a	n/a	GEE2499

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

T41706-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.355	89	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	99%	46-127%
98-08-8	aaa-Trifluorotoluene	110%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T41710-1MS	EE049392.D	1	11/13/09	FI	n/a	n/a	GEE2499
T41710-1MSD	EE049393.D	1	11/13/09	FI	n/a	n/a	GEE2499
T41710-1	EE049391.D	1	11/13/09	FI	n/a	n/a	GEE2499

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

T41706-1

CAS No.	Compound	T41710-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		23.7	22.9	96	21.6	91	6	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T41710-1	Limits
460-00-4	4-Bromofluorobenzene	104%	107%	95%	46-127%
98-08-8	aaa-Trifluorotoluene	103%	110%	106%	44-120%

7.3.1
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GC Semi-volatiles

QC Data Summaries

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Includes the following where applicable:

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

Method Blank Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-MB	CC216441.D 1		11/12/09	SS	11/11/09	OP13458	GCC1004

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

T41706-1

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	40% 33-115%

Blank Spike Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-BS	CC216442.D 1		11/12/09	SS	11/11/09	OP13458	GCC1004

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

T41706-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	32.4	21.4	66	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	43%	33-115%

8.2.1
8

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T41706
Account: ENCACOP ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-MS	CC216443.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004
OP13458-MSD	CC216444.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004
T41656-1	CC216445.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004

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

T41706-1

CAS No.	Compound	T41656-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	381		40.1	505	309* a	485	262* a	4	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T41656-1	Limits
84-15-1	o-Terphenyl	0% * b	0% * b	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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10636
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/12/09

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0041	.00066	-0.0023	<0.017

Associated samples MP10636: T41706-1

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: T41706
 Account: ENCACOP - ENCANA
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10636
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/12/09 11/12/09

Metal	T39947-4 Original DUP		RPD	QC Limits	T39947-4 Original MS		Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.023	0.025	8.3	0-20	0.023	0.38	0.326	109.4	75-125

Associated samples MP10636: T41706-1

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: T41706
 Account: ENCACOP - ENCANA
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10636
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/12/09

Metal	T39947-4 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.023	0.39	0.34	107.9	2.6	

Associated samples MP10636: T41706-1

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

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/12/09

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
Mercury	8.5	7.34	115.8 72-128

Associated samples MP10636: T41706-1

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10642
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/12/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.069	<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	-0.017	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.036	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.054	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	0.20	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.066	<0.50
Silver	0.50	.043	.04	-0.012	<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	-0.0080	<1.0

Associated samples MP10642: T41706-1

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10642
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

11/12/09

11/12/09

	T39947-4			QC	T39947-4		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	4.3	4.7	8.9	0-20	4.3	35.7	33.3	94.2	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium	0.10	0.093	7.3	0-20	0.10	30.6	33.3	91.5	80-120
Calcium									
Chromium	13.2	15.7	17.3	0-20	13.2	42.9	33.3	89.1	80-120
Cobalt									
Copper	11.8	16.7	34.4*(a)	0-20	11.8	44.0	33.3	96.6	80-120
Iron									
Lead	8.7	9.3	6.7	0-20	8.7	41.7	33.3	99.0	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	7.9	11.2	34.6*(a)	0-20	7.9	37.9	33.3	90.0	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	31.2	33.3	93.6	80-120
Silver	0.16	0.15	6.5	0-20	0.16	25.4	33.3	75.7N	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	28.3	28.5	0.7	0-20	28.3	60.7	33.3	97.2	80-120

Associated samples MP10642: T41706-1

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10642
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/12/09

Metal	T39947-4 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	4.3	36.0	33.6	94.2	0.8	20
Barium	anr					
Beryllium						
Boron						
Cadmium	0.10	31.2	33.6	92.5	1.9	20
Calcium						
Chromium	13.2	42.4	33.6	86.8	1.2	20
Cobalt						
Copper	11.8	43.4	33.6	93.9	1.4	20
Iron						
Lead	8.7	42.3	33.6	99.9	1.4	20
Magnesium						
Manganese						
Molybdenum						
Nickel	7.9	38.1	33.6	89.8	0.5	20
Potassium						
Selenium	0.0	31.1	33.6	92.5	0.3	20
Silver	0.16	25.7	33.6	75.9N	1.2	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	28.3	61.6	33.6	99.0	1.5	20

Associated samples MP10642: T41706-1

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10642
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/12/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	147	158	93.0	82-118
Barium	anr			
Beryllium				
Boron				
Cadmium	161	187	86.1	82-118
Calcium				
Chromium	78.8	89.5	88.0	79-121
Cobalt				
Copper	122	129	94.6	84-117
Iron				
Lead	155	172	90.1	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	88.3	99	89.2	81-119
Potassium				
Selenium	134	148	90.5	78-121
Silver	60.6	66	91.8	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	345	394	87.6	80-119

Associated samples MP10642: T41706-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10642
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/12/09

Metal	T39947-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	58.9	67.2	14.1 (a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	1.37	1.78	29.9 (a)	0-10
Calcium				
Chromium	179	189	5.5	0-10
Cobalt				
Copper	161	163	1.2	0-10
Iron				
Lead	119	131	10.2*(b)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	108	134	24.4*(b)	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	2.22	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	386	430	11.5*(b)	0-10

Associated samples MP10642: T41706-1

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10654
Matrix Type: AQUEOUS

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

Prep Date: 11/15/09

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	92.0	<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	9.4	<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	79.6	<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 MP10654: T41706-1C

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: T41706
 Account: ENCACOP - ENCANA
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10654
 Matrix Type: AQUEOUS

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

Prep Date: 11/15/09

Metal	T39947-4C Original DUP		RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	234000	208000	11.8	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	5050	4460	12.4	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	1650000	1520000	12.9	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10654: T41706-1C

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10655
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/15/09

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	0.097	<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 MP10655: T41706-1B

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10655
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

11/15/09

11/15/09

Metal	T41706-1B Original DUP		RPD	QC Limits	T41706-1B Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	269	255	5.3	0-20	269	288	31.4	60.5 (a)	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10655: T41706-1B

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10655
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/15/09

Metal	T41706-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	269	288	30.4	62.6 (a)	0.0	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 MP10655: T41706-1B

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.

SERIAL DILUTION RESULTS SUMMARY

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10655
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/15/09

Metal	T41706-1B		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium	3490	4110	17.8*(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 MP10655: T41706-1B

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/15/09

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	-47	<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 MP10656: T41706-1A

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

11/15/09

11/15/09

	T39947-4A			QC	T39947-4A		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	253	251	0.8	0-20	253	2260	1000	102.7	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 MP10656: T41706-1A

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: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/15/09

Metal	T39947-4A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	253	2130	1000	93.7	5.9	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10656: T41706-1A

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

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Methods: SW846 6010B
Units: ug/l

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1990	1000	99.7	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/15/09

T39947-4A		QC		
Metal	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	128	122	4.1	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 MP10656: T41706-1A

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

9.5.4

9



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: T41706
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	GN18693	2.0	<2.0	mg/kg	40	38.1	95.3	80-120%
Specific Conductivity	GN18728	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN18693: T41706-1
Batch GN18728: T41706-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T41706
Account: ENCACOP - ENCANA
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18693	T41657-1	mg/kg	0.47 B	<2.0	2.1	0-20%
Solids, Percent	GN18730	T42037-1	%	84.8	84.1	0.8	0-5%
Specific Conductivity	GN18728	T41657-1	umhos/cm	2270	2270	0.0	0-20%
pH	GN18662	T41789-14	su	6.5	6.5	0.0	0-20%

Associated Samples:

Batch GN18662: T41706-1

Batch GN18693: T41706-1

Batch GN18728: T41706-1

Batch GN18730: T41706-1

Batch MP10654: T41706-1C

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T41706
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	GN18693	T41657-1	mg/kg	0.47 B	40	41.2	101.7	75-125%

Associated Samples:

Batch GN18693: T41706-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits