



Technical Report for

EnCana

EnCana Oil & Gas (USA) Inc.

C28

Accutest Job Number: T34429E

Sampling Date: 07/29/09

Report to:

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Total number of pages in report: 57



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.

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Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)
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Test results relate only to samples analyzed.



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Sample Summary

EnCana

Job No: T34429E

EnCana Oil & Gas (USA) Inc.
Project No: C28

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T34429-3	07/29/09	13:45	07/30/09	SO	Soil	ENCANA_C28_BACKGROUND
T34429-3A	07/29/09	13:45	07/30/09	AQ	Water Extract	ENCANA_C28_BACKGROUND
T34429-3B	07/29/09	13:45	07/30/09	SO	Soil	ENCANA_C28_BACKGROUND

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



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: ENCANA_C28_BACKGROUND	
Lab Sample ID: T34429-3	Date Sampled: 07/29/09
Matrix: SO - Soil	Date Received: 07/30/09
Method: SW846 8260B	Percent Solids: 92.2
Project: EnCana Oil & Gas (USA) Inc.	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0019487.D	1	08/06/09	JL	n/a	n/a	VM785
Run #2							

	Initial Weight	Final Volume
Run #1	5.24 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.2	0.72	ug/kg	
108-88-3	Toluene	ND	5.2	0.98	ug/kg	
100-41-4	Ethylbenzene	ND	5.2	0.93	ug/kg	
1330-20-7	Xylene (total)	ND	16	2.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-121%
2037-26-5	Toluene-D8	111%		76-132%
460-00-4	4-Bromofluorobenzene	128%		73-165%
17060-07-0	1,2-Dichloroethane-D4	101%		57-122%

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

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

Report of Analysis

Client Sample ID:	ENCANA_C28_BACKGROUND		
Lab Sample ID:	T34429-3	Date Sampled:	07/29/09
Matrix:	SO - Soil	Date Received:	07/30/09
Method:	SW846 8270C SW846 3550B	Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J12363.D	1	08/04/09	SC	08/03/09	OP12658	EJ570
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	180	49	ug/kg	
208-96-8	Acenaphthylene	ND	180	42	ug/kg	
120-12-7	Anthracene	ND	180	34	ug/kg	
56-55-3	Benzo(a)anthracene	ND	180	68	ug/kg	
50-32-8	Benzo(a)pyrene	ND	180	28	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	180	44	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	180	42	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	180	33	ug/kg	
218-01-9	Chrysene	ND	180	39	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	180	94	ug/kg	
206-44-0	Fluoranthene	ND	180	36	ug/kg	
86-73-7	Fluorene	ND	180	48	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	180	63	ug/kg	
90-12-0	1-Methylnaphthalene	ND	180	41	ug/kg	
91-57-6	2-Methylnaphthalene	80.3	180	56	ug/kg	J
91-20-3	Naphthalene	ND	180	35	ug/kg	
85-01-8	Phenanthrene	ND	180	47	ug/kg	
129-00-0	Pyrene	ND	180	34	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	62%		26-124%
4165-62-2	Phenol-d5	71%		19-106%
118-79-6	2,4,6-Tribromophenol	106%		18-129%
4165-60-0	Nitrobenzene-d5	59%		18-104%
321-60-8	2-Fluorobiphenyl	81%		21-114%
1718-51-0	Terphenyl-d14	140%		24-149%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: ENCANA_C28_BACKGROUND		Date Sampled: 07/29/09
Lab Sample ID: T34429-3		Date Received: 07/30/09
Matrix: SO - Soil		Percent Solids: 92.2
Method: SW846 8015		
Project: EnCana Oil & Gas (USA) Inc.		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE046440.D	1	08/06/09	FI	n/a	n/a	GEE2355
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.58 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	13.0	5.3	0.32	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		46-127%
98-08-8	aaa-Trifluorotoluene	109%		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_C28_BACKGROUND	
Lab Sample ID:	T34429-3	Date Sampled: 07/29/09
Matrix:	SO - Soil	Date Received: 07/30/09
Method:	SW846 8015 M SW846 3550B	Percent Solids: 92.2
Project:	EnCana Oil & Gas (USA) Inc.	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF191317.D	1	08/08/09	SS	08/03/09	OP12656	GIB862
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	45.2	8.9	2.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	92%		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: ENCANA_C28_BACKGROUND	Date Sampled: 07/29/09
Lab Sample ID: T34429-3	Date Received: 07/30/09
Matrix: SO - Soil	Percent Solids: 92.2
Project: EnCana Oil & Gas (USA) Inc.	

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	17.9	0.66	0.13	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Cadmium	0.67	0.33	0.066	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Chromium	30.5	0.66	0.046	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Copper	29.2	1.6	0.085	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Lead	18.3	0.66	0.26	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Mercury	0.027	0.018	0.00069	mg/kg	1	08/10/09	08/10/09 NS	SW846 7471A ²	SW846 7471A ⁴
Nickel	21.5	2.6	0.085	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Selenium	1.4	0.66	0.16	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Silver	0.23 B	0.66	0.053	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³
Zinc	71.8	1.3	0.26	mg/kg	1	08/08/09	08/09/09 NS	SW846 6010B ¹	SW846 3050B ³

- (1) Instrument QC Batch: MA4220
- (2) Instrument QC Batch: MA4221
- (3) Prep QC Batch: MP10032
- (4) Prep QC Batch: MP10037

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_C28_BACKGROUND	Date Sampled:	07/29/09
Lab Sample ID:	T34429-3	Date Received:	07/30/09
Matrix:	SO - Soil	Percent Solids:	92.2
Project:	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	24.1	2.0	mg/kg	1	08/08/09 08:00	KD	SW846 3060/7196A
Chromium, Trivalent ^a	6.4	2.7	mg/kg	1	08/09/09 03:51	NS	SW846 6010/7196A M
Sodium Adsorption Ratio	0.35 B	0.40	ratio	1	08/11/09	RR	LADNR29B
Solids, Percent	92.2		%	1	08/05/09	MR	SM 2540B M
Specific Conductivity	198	1.0	umhos/cm	1	08/08/09 12:00	KD	EPA 120.1
pH	7.9		su	1	08/02/09	EV	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	ENCANA_C28_BACKGROUND		
Lab Sample ID:	T34429-3A	Date Sampled:	07/29/09
Matrix:	AQ - Water Extract	Date Received:	07/30/09
Project:	EnCana Oil & Gas (USA) Inc.	Percent Solids:	92.2

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	1600	200	4.2	ug/l	1	08/06/09	08/08/09 NS	SW846 6010B ¹	SW846 3010A ²

(1) Instrument QC Batch: MA4219

(2) Prep QC Batch: MP10016

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_C28_BACKGROUND		
Lab Sample ID:	T34429-3B	Date Sampled:	07/29/09
Matrix:	SO - Soil	Date Received:	07/30/09
Project:	EnCana Oil & Gas (USA) Inc.	Percent Solids:	92.2

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	322	11	0.032	mg/kg	1	08/05/09	08/08/09 NS	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA4220

(2) Prep QC Batch: MP10020

RL = Reporting Limit
MDL = Method Detection Limit

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



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Organic Compounds in Soil

TPH (total volatile and extractable petroleum hydrocarbons)

- Benzene
- Toluene
- Ethylbenzene
- Xylenes (Total)
- Acenaphthene
- Anthracene
- Benzo(A)anthracene
- Benzo(B)fluoranthene
- Benzo(K)fluoranthene
- Benzo(A)pyrene
- Chrysene
- Dibenzo(A,H)anthracene
- Fluoranthracene
- Flourene
- Indeno(1,2,3-C,D)pyrene
- Naphthalene
- Pyrene

Inorganics in Soils

- Electronic Conductivity (EC)
- Sodium Adsorption Ratio (SAR)
- pH

Metals in Soils

- Arsenic
- Barium (LDNR True Total Barium)
- Boron (Hot Water Soluble)
- Cadmium
- Chromium (III)
- Chromium (VI)
- Copper
- Lead (inorganic)
- Mercury
- Nickel (soluble salt)
- Selenium
- Silver
- Zinc



GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM785-MB	M0019481.D 1		08/06/09	JL	n/a	n/a	VM785

The QC reported here applies to the following samples:

Method: SW846 8260B

T34429-3

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	95% 70-121%
2037-26-5	Toluene-D8	104% 76-132%
460-00-4	4-Bromofluorobenzene	112% 73-165%
17060-07-0	1,2-Dichloroethane-D4	88% 57-122%

Blank Spike Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM785-BS	M0019477.D	1	08/06/09	JL	n/a	n/a	VM785

The QC reported here applies to the following samples:

Method: SW846 8260B

T34429-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	51.8	104	70-114
100-41-4	Ethylbenzene	50	49.6	99	60-119
108-88-3	Toluene	50	50.7	101	68-115
1330-20-7	Xylene (total)	150	151	101	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	70-121%
2037-26-5	Toluene-D8	107%	76-132%
460-00-4	4-Bromofluorobenzene	114%	73-165%
17060-07-0	1,2-Dichloroethane-D4	89%	57-122%

4.2.1
4

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T34429-1MS	M0019483.D 1		08/06/09	JL	n/a	n/a	VM785
T34429-1MSD	M0019484.D 1		08/06/09	JL	n/a	n/a	VM785
T34429-1	M0019482.D 1		08/06/09	JL	n/a	n/a	VM785

The QC reported here applies to the following samples:

Method: SW846 8260B

T34429-3

CAS No.	Compound	T34429-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	54.5	51.5	95	47.5	93	8	70-114/38
100-41-4	Ethylbenzene	ND	54.5	50.7	93	46.9	91	8	60-119/40
108-88-3	Toluene	ND	54.5	53.4	98	47.6	93	11	68-115/38
1330-20-7	Xylene (total)	ND	163	152	93	139	90	9	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T34429-1	Limits
1868-53-7	Dibromofluoromethane	94%	96%	96%	70-121%
2037-26-5	Toluene-D8	109%	107%	108%	76-132%
460-00-4	4-Bromofluorobenzene	121%	122%	124%	73-165%
17060-07-0	1,2-Dichloroethane-D4	90%	92%	90%	57-122%

4.3.1
4



GC/MS Semi-volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12658-MB	P05185.D	1	08/04/09	GJ	08/03/09	OP12658	EP254

The QC reported here applies to the following samples:

Method: SW846 8270C

T34429-3

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

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	61%	26-124%
4165-62-2	Phenol-d5	63%	19-106%
118-79-6	2,4,6-Tribromophenol	89%	18-129%
4165-60-0	Nitrobenzene-d5	71%	18-104%
321-60-8	2-Fluorobiphenyl	76%	21-114%
1718-51-0	Terphenyl-d14	87%	24-149%

Blank Spike Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12658-BS	P05186.D	1	08/04/09	GJ	08/03/09	OP12658	EP254

The QC reported here applies to the following samples:

Method: SW846 8270C

T34429-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1430	86	53-106
208-96-8	Acenaphthylene	1670	1600	96	61-121
120-12-7	Anthracene	1670	1610	97	66-105
56-55-3	Benzo(a)anthracene	1670	1630	98	62-113
50-32-8	Benzo(a)pyrene	1670	1540	92	61-118
205-99-2	Benzo(b)fluoranthene	1670	1560	94	67-110
191-24-2	Benzo(g,h,i)perylene	1670	1580	95	57-124
207-08-9	Benzo(k)fluoranthene	1670	1740	104	65-116
218-01-9	Chrysene	1670	1620	97	71-106
53-70-3	Dibenzo(a,h)anthracene	1670	1590	95	59-123
206-44-0	Fluoranthene	1670	1600	96	64-114
86-73-7	Fluorene	1670	1410	85	65-99
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1620	97	51-133
90-12-0	1-Methylnaphthalene	1670	1250	75	56-94
91-57-6	2-Methylnaphthalene	1670	1260	76	48-101
91-20-3	Naphthalene	1670	1350	81	57-94
85-01-8	Phenanthrene	1670	1580	95	66-102
129-00-0	Pyrene	1670	1640	98	49-117

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	78%	26-124%
4165-62-2	Phenol-d5	75%	19-106%
118-79-6	2,4,6-Tribromophenol	96%	18-129%
4165-60-0	Nitrobenzene-d5	85%	18-104%
321-60-8	2-Fluorobiphenyl	88%	21-114%
1718-51-0	Terphenyl-d14	92%	24-149%

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12658-MS	P05192.D	1	08/04/09	GJ	08/03/09	OP12658	EP254
OP12658-MSD	P05193.D	1	08/04/09	GJ	08/03/09	OP12658	EP254
T34510-3	P05191.D	1	08/04/09	GJ	07/31/09	OP12658	EP254

The QC reported here applies to the following samples:

Method: SW846 8270C

T34429-3

CAS No.	Compound	T34510-3 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	180 U	1830	1740	95	1340	73	26	53-106/49	
208-96-8	Acenaphthylene	180 U	1830	1960	107	1520	83	25	61-121/49	
120-12-7	Anthracene	180 U	1830	1880	103	1570	86	18	66-105/40	
56-55-3	Benzo(a)anthracene	180 U	1830	1900	104	1600	87	17	62-113/43	
50-32-8	Benzo(a)pyrene	180 U	1830	1780	97	1490	81	18	61-118/44	
205-99-2	Benzo(b)fluoranthene	180 U	1830	1800	98	1540	84	16	67-110/42	
191-24-2	Benzo(g,h,i)perylene	180 U	1830	1960	107	1690	92	15	57-124/50	
207-08-9	Benzo(k)fluoranthene	180 U	1830	2040	111	1610	88	24	65-116/37	
218-01-9	Chrysene	180 U	1830	1880	103	1590	87	17	71-106/39	
53-70-3	Dibenzo(a,h)anthracene	180 U	1830	1950	106	1680	92	15	59-123/37	
206-44-0	Fluoranthene	180 U	1830	1770	97	1520	83	15	64-114/45	
86-73-7	Fluorene	180 U	1830	1680	92	1330	73	23	65-99/42	
193-39-5	Indeno(1,2,3-cd)pyrene	180 U	1830	1990	109	1700	93	16	51-133/55	
90-12-0	1-Methylnaphthalene	180 U	1830	1560	85	1140	62	31	56-94/49	
91-57-6	2-Methylnaphthalene	180 U	1830	1570	86	1140	62	32	48-101/48	
91-20-3	Naphthalene	180 U	1830	1690	92	1210	66	33	57-94/49	
85-01-8	Phenanthrene	180 U	1830	1870	102	1550	85	19	66-102/47	
129-00-0	Pyrene	180 U	1830	2100	115	1610	88	26	49-117/46	

CAS No.	Surrogate Recoveries	MS	MSD	T34510-3	Limits
367-12-4	2-Fluorophenol	88%	30%	72%	26-124%
4165-62-2	Phenol-d5	85%	37%	74%	19-106%
118-79-6	2,4,6-Tribromophenol	104%	86%	93%	18-129%
4165-60-0	Nitrobenzene-d5	94%	61%	83%	18-104%
321-60-8	2-Fluorobiphenyl	95%	74%	87%	21-114%
1718-51-0	Terphenyl-d14	102%	81%	82%	24-149%

5.3.1
5



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: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2355-MB	EE046421.D	1	08/06/09	FI	n/a	n/a	GEE2355

The QC reported here applies to the following samples:

Method: SW846 8015

T34429-3

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

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

Blank Spike Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2355-BS	EE046416.D	1	08/06/09	FI	n/a	n/a	GEE2355

The QC reported here applies to the following samples:

Method: SW846 8015

T34429-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.384	96	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	103%	46-127%
98-08-8	aaa-Trifluorotoluene	109%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T34592-6MS	EE046428.D	1	08/06/09	FI	n/a	n/a	GEE2355
T34592-6MSD	EE046429.D	1	08/06/09	FI	n/a	n/a	GEE2355
T34592-6	EE046427.D	1	08/06/09	FI	n/a	n/a	GEE2355

The QC reported here applies to the following samples:

Method: SW846 8015

T34429-3

CAS No.	Compound	T34592-6 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	20.5	28.9	38.6	63*	36.8	56*	5	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T34592-6	Limits
460-00-4	4-Bromofluorobenzene	101%	99%	101%	46-127%
98-08-8	aaa-Trifluorotoluene	109%	110%	107%	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: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12656-MB	IF191305.D	1	08/08/09	SS	08/03/09	OP12656	GIB862

The QC reported here applies to the following samples:

Method: SW846 8015 M

T34429-3

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	78% 33-115%

7.1.1
7

Blank Spike Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12656-BS	IF191306.D	1	08/08/09	SS	08/03/09	OP12656	GIF862

The QC reported here applies to the following samples:

Method: SW846 8015 M

T34429-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	25.7	77	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	78%	33-115%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T34429E
Account: ENCACOP EnCana
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12656-MS	IF191307.D	1	08/08/09	SS	08/03/09	OP12656	GIB862
OP12656-MSD	IF191308.D	1	08/08/09	SS	08/03/09	OP12656	GIF862
T34592-6	IF191324.D	1	08/08/09	SS	08/03/09	OP12656	GIF862

The QC reported here applies to the following samples:

Method: SW846 8015 M

T34429-3

CAS No.	Compound	T34592-6 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	56.6	43.2	35.9	-48*	37.6	-45*	5	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T34592-6	Limits
84-15-1	o-Terphenyl	85%	76%	84%	33-115%

7.3.1

7



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: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10016
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 08/06/09

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	-36	<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 MP10016: T34429-3A

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

8.1.1
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10016
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/06/09 08/06/09

Metal	T34428-1A		QC	T34428-1A		Spikelot	QC		
	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	1760	2620	39.3*(a)	0-20	1760	3960	1000	110.5	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10016: T34429-3A

Results < IDL are shown as zero for calculation purposes

- (*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) High RPD due to possible matrix interference.

8.12
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10016
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/06/09

Metal	T34428-1A Original MSD	SpikeLot MPTW4	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	1760	4420	1000	133.5	11.0	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10016: T34429-3A

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

8.12
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10016
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/06/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2110	1000	105.7	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 MP10016: T34429-3A

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

8.1.3
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10016
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/06/09

Metal	T34428-1A Original	SDL 1:5	%DIF	QC Limits
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Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	897	936	4.4	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10016: T34429-3A

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

8.1.4
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10020
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/05/09

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	0.049	<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 MP10020: T34429-3B

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

8.2.1
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10020
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/05/09 08/05/09

Metal	T34592-3B Original DUP		RPD	QC Limits	T34592-3B Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	293	342	15.4	0-20	293	357	20.3	314.8(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 MP10020: T34429-3B

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

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

8.2.2
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10020
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/05/09

Metal	T34592-3B Original MSD		Spike lot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	293	362	20.3	339.1(a)	1.4	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 MP10020: T34429-3B

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

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

8.2.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10020
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/05/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	20.6	20	103.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10020: T34429-3B

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

8.2.3
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10020
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/05/09

Metal	T34592-3B Original	SDL 1:5	%DIF	QC Limits
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Aluminum				
Antimony				
Arsenic				
Barium	5770	6730	16.7*(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 MP10020: T34429-3B

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

8.2.4
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10032
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/08/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.031	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0010	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.079	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.021	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.071	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.095	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.0070	<0.50
Silver	0.50	.043	.04	0.010	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.00050	<1.0

Associated samples MP10032: T34429-3

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

8.3.1
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10032
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/08/09 08/08/09

Metal	T34328-2 Original	DUP	RPD	QC Limits	T34328-2 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	5.9	5.3	10.7	0-20	5.9	23.4	21.8	80.4	80-120
Barium									
Beryllium									
Boron									
Cadmium	0.40	0.37	7.8	0-20	0.40	18.3	21.8	82.2	80-120
Calcium									
Chromium	21.7	20.2	7.2	0-20	21.7	39.8	21.8	83.1	80-120
Cobalt									
Copper	15.9	14.4	9.9	0-20	15.9	36.3	21.8	93.7	80-120
Iron									
Lead	15.8	12.5	23.3*(a)	0-20	15.8	31.3	21.8	71.2N	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	19.8	20.4	3.0	0-20	19.8	39.7	21.8	91.4	80-120
Potassium									
Selenium	0.76	0.71	6.8	0-20	0.76	18.3	21.8	80.6	80-120
Silver	0.13	0.099	27.1 (b)	0-20	0.13	18.8	21.8	85.8	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	56.1	50.7	10.1	0-20	56.1	72.9	21.8	77.2N	80-120

Associated samples MP10032: T34429-3

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

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

8.3.2
 8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10032
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/08/09

Metal	T34328-2 Original	MSD	Spike/lot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	5.9	27.1	24.6	86.2	14.7	20
Barium						
Beryllium						
Boron						
Cadmium	0.40	21.0	24.6	83.8	13.7	20
Calcium						
Chromium	21.7	46.1	24.6	99.2	14.7	20
Cobalt						
Copper	15.9	39.9	24.6	97.6	9.4	20
Iron						
Lead	15.8	34.5	24.6	76.0N	9.7	20
Magnesium						
Manganese						
Molybdenum						
Nickel	19.8	43.9	24.6	98.0	10.0	20
Potassium						
Selenium	0.76	21.0	24.6	82.3	13.7	20
Silver	0.13	21.6	24.6	87.3	13.9	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	56.1	77.5	24.6	87.0	6.1	20

Associated samples MP10032: T34429-3

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

8.3.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10032
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 08/08/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	263	280	93.9	81-119
Barium				
Beryllium				
Boron				
Cadmium	167	182	91.8	82-118
Calcium				
Chromium	139	142	97.9	81-120
Cobalt				
Copper	132	132	100.0	83-117
Iron				
Lead	65.8	72.2	91.1	82-118
Magnesium				
Manganese				
Molybdenum				
Nickel	148	155	95.5	83-117
Potassium				
Selenium	156	165	94.5	78-123
Silver	117	126	92.9	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	326	346	94.2	79-121

Associated samples MP10032: T34429-3

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

8.3.3
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10032
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/08/09

Metal	T34328-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	93.3	107	14.6*(a)	0-10
Barium				
Beryllium				
Boron				
Cadmium	6.41	7.42	15.8 (b)	0-10
Calcium				
Chromium	344	392	13.9*(a)	0-10
Cobalt				
Copper	253	272	7.4	0-10
Iron				
Lead	252	293	16.3*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	315	359	13.9*(a)	0-10
Potassium				
Selenium	12.1	0.00	100.0(b)	0-10
Silver	2.08	0.00	100.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	892	1080	21.2*(a)	0-10

Associated samples MP10032: T34429-3

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).

8.3.4
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10037
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 08/10/09

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0041	.00066	0.0063	<0.017

Associated samples MP10037: T34429-3

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

8.4.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10037
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/10/09 08/10/09

Metal	T34328-2 Original	DUP	RPD	QC Limits	T34328-2 Original MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.0089	0.019	72.4 (a)	0-20	0.0089 0.26	0.245	102.3	75-125

Associated samples MP10037: T34429-3

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

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

8.4.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T34429E
 Account: ENCACOP - EnCana
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10037
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/10/09

Metal	T34328-2 Original MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0089	0.27	0.251	104.1	3.8

Associated samples MP10037: T34429-3

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

8.4.2
8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10037
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 08/10/09

Metal	LCS Result	Spikelot HGLCD050	% Rec	QC Limits
Mercury	7.5	8.48	88.4	66-132

Associated samples MP10037: T34429-3

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

8.4.3

8



General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T34429E
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	GN17588	2.0	<2.0	mg/kg	40	38.0	94.9	80-120%
Sodium Adsorption Ratio	MP10045/GN17630	0.40	<0.40	ratio				
Sodium Adsorption Ratio	MP10045/GN17630	0.40	<0.40	ratio				
Specific Conductivity	GN17640	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN17588: T34429-3
Batch GN17640: T34429-3
Batch MP10045: T34429-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T34429E
Account: ENCACOP - EnCana
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN17588	T34328-1	mg/kg	21.1	20.1	4.9	0-20%
Sodium Adsorption Ratio	MP10045/GN17630	T34592-3	ratio	1.2	1.2	0.8	0-20%
Solids, Percent	GN17608	T34429-3	%	92.2	92.7	0.5	0-20%
Specific Conductivity	GN17640	T34328-1	umhos/cm	2900	2900	0.0	0-20%
pH	GN17572	T34592-1	su	6.4	6.4	0.1	0-20%

Associated Samples:

Batch GN17572: T34429-3
Batch GN17588: T34429-3
Batch GN17608: T34429-3
Batch GN17640: T34429-3
Batch MP10045: T34429-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T34429E
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	GN17588	T34328-1	mg/kg	21.1	40	62.4	103.2	75-125%

Associated Samples:

Batch GN17588: T34429-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits