Received 11/14/2011 Rifle COGCC

Mountain States ACCUTEST LABORATORIES

10/28/11

Technical Report for

EnCana

O1EB Domestic Sampling

Accutest Job Number: D27688A

Sampling Date: 09/15/11

Report to:

EnCana

Aaron.Stacy@encana.com

ATTN: Aaron Stacy

Total number of pages in report: **36**

ACCREDITED IN ACCORDANCE WITH nelac

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

Brad Madadian
Laboratory Director

Client Service contact: 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8

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Accutest LabLink@5667 12:54 28-Oct-2011

Sample Summary

EnCana

Job No: D27688A

O1EB Domestic Sampling

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D27688-2	09/15/11	11:15	AS	09/16/11	AQ	Ground Water	LANG6WW-091511
D27688-2F	09/15/11	11:15	AS	09/16/11	AQ	Groundwater Filtered	LANG6WW-091511

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	EnCana	**Job No**	D27688A
Site:	O1EB Domestic Sampling	**Report Dat**	9/29/2011 4:55:19 PM

On 09/16/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D27688A was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** V7V479

- All samples were analyzed within the recommended method holding time.
- Sample(s) D27634-10MS, D27634-10MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method RSK175 MOD

Matrix AQ **Batch ID:** GFB156

- All samples were analyzed within the recommended method holding time.
- Sample(s) D27540-1MS, D27540-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010B

Matrix AQ **Batch ID:** MP5783

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27689-1MS, D27689-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ **Batch ID:** GP5477

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27689-1MS, D27689-1MSD were used as the QC samples for the Bromide, Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate analysis.

Matrix AQ **Batch ID:** GP5565

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27794-1MS, D27794-1MSD were used as the QC samples for the Fluoride analysis.

Wet Chemistry By Method SM20 2320B

Matrix AQ **Batch ID:** GN11665

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27694-2ADUP, D27694-2AMS, D27694-2AMSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix AQ **Batch ID:** GN11666

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

Matrix AQ **Batch ID:** GN11667

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

Wet Chemistry By Method SM20 2510B

Matrix AQ **Batch ID:** GP5493

- Sample(s) D27536-1ADUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ **Batch ID:** GN11637

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27540-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.
- The blank spike (BS) recovery(s) of Solids, Total Dissolved are outside control limits.

Wet Chemistry By Method SM20 4500NH3 D

Matrix AQ **Batch ID:** GP5508

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27619-1MS, D27619-1MSD, D27619-1DUP were used as the QC samples for the Nitrogen, Ammonia analysis.
- The duplicate RPD(s) for Nitrogen, Ammonia are outside control limits for sample GP5508-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SM20 4500S2 CF

Matrix AQ **Batch ID:** GN11623

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D27688-2MS were used as the QC samples for the Sulfide analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	LANG6WW-091511		
Lab Sample ID:	D27688-2	**Date Sampled:**	09/15/11
Matrix:	AQ - Ground Water	**Date Received:**	09/16/11
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	O1EB Domestic Sampling		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V09087.D	1	09/16/11	BR	n/a	n/a	V7V479
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0020	mg/l	
100-41-4	Ethylbenzene	ND	0.0020	mg/l	
1330-20-7	Xylene (total)	ND	0.0040	mg/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	104%		67-131%
2037-26-5	Toluene-D8	96%		65-130%
460-00-4	4-Bromofluorobenzene	85%		65-130%

ND = Not detected
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:	LANG6WW-091511		
Lab Sample ID:	D27688-2	**Date Sampled:**	09/15/11
Matrix:	AQ - Ground Water	**Date Received:**	09/16/11
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	O1EB Domestic Sampling		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB04747.D	1	09/20/11	CS	n/a	n/a	GFB156
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.00080	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-98-6	Propane	90%		70-130%

ND = Not detected
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: LANG6WW-091511
Lab Sample ID: D27688-2
Matrix: AQ - Ground Water
Project: O1EB Domestic Sampling

Date Sampled: 09/15/11
Date Received: 09/16/11
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	306	5.0	mg/l	1	09/21/11	JD	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	09/21/11	JD	SM20 2320B
Alkalinity, Total as CaCO3	306	5.0	mg/l	1	09/21/11	JD	SM20 2320B
Bromide	< 0.20	0.20	mg/l	1	09/16/11 12:02	JML	EPA 300/SW846 9056
Chloride	3.7	0.50	mg/l	1	09/16/11 12:02	JML	EPA 300/SW846 9056
Fluoride	0.56	0.20	mg/l	1	09/28/11 11:31	GH	EPA 300/SW846 9056
Nitrogen, Ammonia	< 0.10	0.10	mg/l	1	09/22/11	JK	SM20 4500NH3 D
Nitrogen, Nitrate	1.5	0.23	mg/l	5	09/16/11 16:40	JML	EPA 300/SW846 9056
Nitrogen, Nitrite	< 0.061	0.061	mg/l	1	09/16/11 12:02	JML	EPA 300/SW846 9056
Solids, Total Dissolved	408	10	mg/l	1	09/20/11	JK	SM20 2540C
Specific Conductivity	545	1.0	umhos/cm	1	09/20/11	JD	SM20 2510B
Sulfate	20.6	0.50	mg/l	1	09/16/11 12:02	JML	EPA 300/SW846 9056
Sulfide	< 0.50	0.50	mg/l	1	09/19/11	JD	SM20 4500S2 CF
pH	7.57		su	1	09/16/11 15:15	JK	SM20 4500H

RL = Reporting Limit

Report of Analysis

Client Sample ID:	LANG6WW-091511		
Lab Sample ID:	D27688-2F	**Date Sampled:**	09/15/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	09/16/11
		Percent Solids:	n/a
Project:	O1EB Domestic Sampling		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 0.025	0.025	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Barium	0.252	0.010	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Cadmium	< 0.010	0.010	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Calcium	83.6	0.40	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Copper	0.0539	0.010	mg/l	1	09/19/11	09/20/11	JM	SW846 6010B [2]	SW846 3010A [3]
Iron	< 0.070	0.070	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Lead	< 0.050	0.050	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Magnesium	20.7	0.20	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Manganese	< 0.0050	0.0050	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Potassium	2.11	1.0	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Silver	< 0.030	0.030	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]
Sodium	26.4	0.40	mg/l	1	09/19/11	09/19/11	JM	SW846 6010B [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA1836
(2) Instrument QC Batch: MA1837
(3) Prep QC Batch: MP5783

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: D27688

Client / Reporting Information

Company Name: EnCana Oil & Gas (USA) Inc
Street Address: 2717 County Road 215, Suite 100
City: Parachute, CO 81635
Project Contact: Dan Prokop
Phone #: 970-285-2707
Sampler(s) Name(s): Aaron Stacy

Project Information

Project Name: O1EB Domestic Sampling
Street:
City: State:
Project #: Domestic well
Client Purchase Order #:
Project Manager: Dan Prokop

Billing Information (If different from Report to)
Company Name: Same as Reporting Information
Street Address:
City:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	Zn Acetate	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	RSK175CH4	V8260BTXM	AMN	BRO,CHL,F, NO3, NO2, SO4	pH, SCON, TDS, XCARBICALK	Sulfide	Dissolved Metals (6010) see below	LAB USE ONLY
	EICH2WW-091511		9/15/11	1015	AS	GW	11		1		1	9				X	X	X	X	X	X	X	01
	LANG6WW-091511		9/15/11	1115	AS	GW	11		1		1	9				X	X	X	X	X	X	X	02

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [X] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [X] Report by PDF
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Dissolved Metals (6010) Lab Filter: As, Ba, Cd, Cr, Cu, Pb, Ag, Ca, Fe
K, Mg, Mn, Na, Se
Report out Total Xylenes
Send report via email to: Daniel.Prokop@encana.com
Log in under ENCACOP3485

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	09/15/11 1000	1 Jacob Porter 9/16/11 0930	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # FX [X] Intact [ ] Not Intact	Preserved where applicable	On Ice X	Cooler Temp. 2.7
		5			

4.1 4

D27688A: Chain of Custody
Page 1 of 3

Received 11/14/2011 Rifle COGCC

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D27688 **Client:** ENCANA **Immediate Client Services Action Required:** No

Date / Time Received: 9/16/2011 9:30:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: 01EB **Airbill #'s:** FEDEX

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D27688A: Chain of Custody

Page 2 of 3

Job Change Order: D27688_9/28/2011

Requested	9/28/2011	**Received Date:**	9/16/2011
Account Name:	EnCana	**Due Date:**	9/30/2011
Project	O1EB Domestic Sampling	**Deliverable:**	COMMBN
CSR:	RR	**TAT (Days):**	0

Sample #: D27688-2, 2F

Change: Please move samples to an A job for reporting purposes per an email from Aaron Stacy.

Above Changes Per: Client - Aaron Stacy **Date:** 9/28/2011

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

D27688A: Chain of Custody

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Mountain States ACCUTEST LABORATORIES

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: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V479-MB	7V09075.D	1	09/16/11	BR	n/a	n/a	V7V479

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

D27688-2

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
1330-20-7	Xylene (total)	ND	4.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	114%	67-131%
2037-26-5	Toluene-D8	93%	65-130%
460-00-4	4-Bromofluorobenzene	83%	65-130%

Blank Spike Summary

Job Number: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V479-BS	7V09076.D	1	09/16/11	BR	n/a	n/a	V7V479

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

D27688-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.1	98	70-130
100-41-4	Ethylbenzene	50	48.2	96	70-130
1634-04-4	Methyl Tert Butyl Ether	50	53.7	107	60-156
108-88-3	Toluene	50	52.2	104	70-130
1330-20-7	Xylene (total)	150	142	95	56-138

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	113%	67-131%
2037-26-5	Toluene-D8	114%	65-130%
460-00-4	4-Bromofluorobenzene	108%	65-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D27634-10MS	7V09077.D	5	09/16/11	BR	n/a	n/a	V7V479
D27634-10MSD	7V09078.D	5	09/16/11	BR	n/a	n/a	V7V479
D27634-10	7V09081.D	1	09/16/11	BR	n/a	n/a	V7V479

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

D27688-2

CAS No.	Compound	D27634-10 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	245	98	254	102	4	61-133/30
100-41-4	Ethylbenzene	ND		250	243	97	248	99	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		250	258	103	263	105	2	57-159/30
108-88-3	Toluene	ND		250	261	104	261	104	0	70-130/30
1330-20-7	Xylene (total)	ND		750	730	97	739	99	1	56-138/30

CAS No.	Surrogate Recoveries	MS	MSD	D27634-10	Limits
17060-07-0	1,2-Dichloroethane-D4	109%	105%	103%	67-131%
2037-26-5	Toluene-D8	112%	110%	93%	65-130%
460-00-4	4-Bromofluorobenzene	108%	106%	83%	65-130%

Mountain States ACCUTEST LABORATORIES

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: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB156-MB	FB04733.D	1	09/20/11	CS	n/a	n/a	GFB156

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D27688-2

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.00080	mg/l	

CAS No.	Surrogate Recoveries		Limits
74-98-6	Propane	95%	70-130%

Blank Spike Summary

Job Number: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB156-BS	FB04734.D	10	09/20/11	CS	n/a	n/a	GFB156

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D27688-2

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	.5094	0.632	124	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
74-98-6	Propane	94%	70-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D27688A
Account: ENCACOP EnCana
Project: O1EB Domestic Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D27540-1MS	FB04751.D	10	09/20/11	CS	n/a	n/a	GFB156
D27540-1MSD	FB04752.D	10	09/20/11	CS	n/a	n/a	GFB156
D27540-1	FB04736.D	1	09/20/11	CS	n/a	n/a	GFB156

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D27688-2

CAS No.	Compound	D27540-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND		0.5094	0.617	121	0.615	121	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D27540-1	Limits
74-98-6	Propane	92%	93%	96%	70-130%

Mountain States ACCUTEST LABORATORIES

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: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/19/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	5.9		
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9	4.0	<25
Barium	10	1.1	1.1	0.10	<10
Beryllium	10	.44	.5		
Boron	50	4.8	4.8		
Cadmium	10	.27	.27	0.0	<10
Calcium	400	9.6	15	14.0	<400
Chromium	10	.18	.79	-0.30	<10
Cobalt	5.0	.35	.35		
Copper	10	.85	2.8	0.60	<10
Iron	70	3.4	13	14.8	<70
Lead	50	1.6	2.1	-1.7	<50
Lithium	2.0	.28	1.2		
Magnesium	200	5.8	10	5.9	<200
Manganese	5.0	.053	.31	0.40	<5.0
Molybdenum	10	.45	.87		
Nickel	30	.43	1		
Phosphorus	100	11	20		
Potassium	1000	55	55	64.3	<1000
Selenium	50	3.8	3.8	-2.6	<50
Silicon	50	3.8	3.8		
Silver	30	.18	.31	-0.30	<30
Sodium	400	110	110	31.9	<400
Strontium	5.0		.25		
Thallium	10	2.9	2.9		
Tin	50	5.5	9.9		
Titanium	10	.11	.31		
Uranium	50	1.5	3.5		
Vanadium	10	.16	.22		
Zinc	30	.28	1.8		

Associated samples MP5783: D27688-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/19/11

Metal	D27689-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0	1010	1000	101.0	75-125
Barium	26.2	1960	2000	96.7	75-125
Beryllium					
Boron					
Cadmium	0.0	492	500	98.4	75-125
Calcium	10200	35700	25000	102.0	75-125
Chromium	0.90	485	500	96.8	75-125
Cobalt					
Copper	4.6	501	500	99.3	75-125
Iron	1560	6460	5000	98.0	75-125
Lead	0.0	991	1000	99.1	75-125
Lithium					
Magnesium	1110	25200	25000	96.4	75-125
Manganese	120	602	500	96.4	75-125
Molybdenum					
Nickel					
Phosphorus					
Potassium	1410	26800	25000	101.6	75-125
Selenium	0.0	994	1000	99.4	75-125
Silicon					
Silver	0.0	204	200	102.0	75-125
Sodium	2730	27400	25000	98.7	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP5783: D27688-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783 Methods: SW846 6010B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/19/11

Metal	D27689-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0	1020	1000	102.0	1.0	20
Barium	26.2	1980	2000	97.7	1.0	20
Beryllium						
Boron						
Cadmium	0.0	500	500	100.0	1.6	20
Calcium	10200	36000	25000	103.2	0.8	20
Chromium	0.90	492	500	98.2	1.4	20
Cobalt						
Copper	4.6	505	500	100.1	0.8	20
Iron	1560	6550	5000	99.8	1.4	20
Lead	0.0	1000	1000	100.0	0.9	20
Lithium						
Magnesium	1110	25500	25000	97.6	1.2	20
Manganese	120	610	500	98.0	1.3	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	1410	27200	25000	103.2	1.5	20
Selenium	0.0	1000	1000	100.0	0.6	20
Silicon						
Silver	0.0	208	200	104.0	1.9	20
Sodium	2730	27800	25000	100.3	1.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP5783: D27688-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/19/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1060	1000	106.0	80-120
Barium	2000	2000	100.0	80-120
Beryllium				
Boron				
Cadmium	518	500	103.6	80-120
Calcium	26100	25000	104.4	80-120
Chromium	509	500	101.8	80-120
Cobalt				
Copper	516	500	103.2	80-120
Iron	5050	5000	101.0	80-120
Lead	1030	1000	103.0	80-120
Lithium				
Magnesium	25200	25000	100.8	80-120
Manganese	503	500	100.6	80-120
Molybdenum				
Nickel				
Phosphorus				
Potassium	26200	25000	104.8	80-120
Selenium	1040	1000	104.0	80-120
Silicon				
Silver	215	200	107.5	80-120
Sodium	25500	25000	102.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP5783: D27688-2F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

QC Batch ID: MP5783
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

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: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN11666	5.0	0.0	mg/l	100	94.8	94.8	90-110%
Alkalinity, Carbonate	GN11667	5.0	0.0	mg/l	100	94.8	94.8	80-120%
Alkalinity, Total as CaCO3	GN11665	5.0	0.0	mg/l	100	94.8	94.8	90-110%
Bromide	GP5477/GN11617	0.20	0.0	mg/l	20	19.3	96.5	90-110%
Chloride	GP5477/GN11617	0.50	0.30	mg/l	20	19.7	98.5	90-110%
Fluoride	GP5565/GN11769	0.20	0.0	mg/l	10	9.61	96.1	90-110%
Nitrogen, Ammonia	GP5508/GN11684	0.10	0.0	mg/l	20	20.4	102.1	90-110%
Nitrogen, Nitrate	GP5477/GN11617	0.045	0.0	mg/l	4.52	4.32	95.6	90-110%
Nitrogen, Nitrite	GP5477/GN11617	0.061	0.0	mg/l	6.09	5.99	98.4	90-110%
Solids, Total Dissolved	GN11637	10	0.0	mg/l	400	332	83.0*(a)	90-110%
Specific Conductivity	GP5493/GN11648			umhos/cm	99.3	95.7	95.0	90-110%
Sulfate	GP5477/GN11617	0.50	0.0	mg/l	30	28.9	96.3	90-110%
Sulfide	GN11623	0.50	0.0	mg/l	3.02	2.8	92.7	60-120%
pH	GN11614			su	8.00	8.00	100.0	99.3-100.7%
pH	GN11614			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GN11614: D27688-2
Batch GN11623: D27688-2
Batch GN11637: D27688-2
Batch GN11665: D27688-2
Batch GN11666: D27688-2
Batch GN11667: D27688-2
Batch GP5477: D27688-2
Batch GP5493: D27688-2
Batch GP5508: D27688-2
Batch GP5565: D27688-2
(*) Outside of QC limits
(a) Blank Spike recovery low due to weighing vessel damage at the end of the analysis.

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN11665	D27694-2A	mg/l	370	370	0.0	0-20%
Nitrogen, Ammonia	GP5508/GN11684	D27619-1	mg/l	0.10	0.070	35.3(a)	0-20%
Solids, Total Dissolved	GN11637	D27540-1	mg/l	410	422	2.9	0-25%
Specific Conductivity	GP5493/GN11648	D27536-1A	umhos/cm	1830	1830	0.3	0-20%

Associated Samples:
Batch GN11637: D27688-2
Batch GN11665: D27688-2
Batch GP5493: D27688-2
Batch GP5508: D27688-2
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN11665	D27694-2A	mg/l	370	100	462	91.8	80-120%
Bromide	GP5477/GN11617	D27689-1	mg/l	0.0	2.5	2.5	100.0	80-120%
Chloride	GP5477/GN11617	D27689-1	mg/l	2.5	10	12.7	102.0	80-120%
Fluoride	GP5565/GN11769	D27794-1	mg/l	0.59	2.5	2.8	88.4	80-120%
Nitrogen, Ammonia	GP5508/GN11684	D27619-1	mg/l	0.10	10	9.5	94.9	80-120%
Nitrogen, Nitrate	GP5477/GN11617	D27689-1	mg/l	0.086	0.565	0.66	101.6	80-120%
Nitrogen, Nitrite	GP5477/GN11617	D27689-1	mg/l	0.0	0.305	0.32	105.1	80-120%
Sulfate	GP5477/GN11617	D27689-1	mg/l	2.2	10	12.1	99.0	80-120%
Sulfide	GN11623	D27688-2	mg/l	0.0	3.02	2.7	82.8	60-120%

Associated Samples:
Batch GN11623: D27688-2
Batch GN11665: D27688-2
Batch GP5477: D27688-2
Batch GP5508: D27688-2
Batch GP5565: D27688-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D27688A
Account: ENCACOP - EnCana
Project: O1EB Domestic Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN11665	D27694-2A	mg/l	370	100	460	0.4	20%
Bromide	GP5477/GN11617	D27689-1	mg/l	0.0	2.5	2.5	0.0	20%
Chloride	GP5477/GN11617	D27689-1	mg/l	2.5	10	12.7	0.0	20%
Fluoride	GP5565/GN11769	D27794-1	mg/l	0.59	2.5	2.9	3.5	20%
Nitrogen, Ammonia	GP5508/GN11684	D27619-1	mg/l	0.10	10	9.00	4.8	
Nitrogen, Nitrate	GP5477/GN11617	D27689-1	mg/l	0.086	0.565	0.66	0.0	20%
Nitrogen, Nitrite	GP5477/GN11617	D27689-1	mg/l	0.0	0.305	0.32	0.0	20%
Sulfate	GP5477/GN11617	D27689-1	mg/l	2.2	10	12.1	0.0	20%

Associated Samples:
Batch GN11665: D27688-2
Batch GP5477: D27688-2
Batch GP5508: D27688-2
Batch GP5565: D27688-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

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