

It should be noted that the information contained within this document was derived from an analytical report (Accutest Gulf Coast, Job Number T27011) containing results for multiple sample locations. At the request of the Colorado Oil and Gas Conservation Commission, results were broken into individual files to facilitate straightforward database management. In addition, a copy of the complete, original analytical report is included as part of the data submittal.

The applicable sections of the report were included in this document for the respective location (e.g. analytical results, quality control results).

If there are any questions please don't hesitate to contact Kathy Friesen, Environmental Field Lead, Encana Parachute office (970-285-2665) or Blake Ford, Environmental Field Coordinator, Encana Rangely office (970-675-4400).



03/28/11

## Technical Report for

**ENCANA**

**Pit Closures**

**Accutest Job Number: T27011**

**Sampling Date: 04/07/09**

**Report to:**

**kramsay@hrlcomp.com**

**Total number of pages in report: 190**



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.

A handwritten signature in black ink that reads 'Paul K. Canevaro'.

**Paul Canevaro**  
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Certifications: TX (T104704220-10-3) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103)

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Test results relate only to samples analyzed.

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## Sample Summary

ENCANA

Job No: T27011

Pit Closures

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T27011-1	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 31-1
T27011-1A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED 31-1
T27011-1B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 31-1
T27011-2	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 31-3
T27011-2A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED 31-3
T27011-2B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 31-3
T27011-3	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 33-14
T27011-3A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED 33-14
T27011-3B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 33-14
T27011-4	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED O-31-3S-101W
T27011-4A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED O-31-3S-101W
T27011-4B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED O-31-3S-101W
T27011-5	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED J-25

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

## Sample Summary

(continued)

ENCANA

Job No: T27011

Pit Closures

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T27011-5A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED J-25
T27011-5B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED J-25
T27011-6	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 27-2
T27011-6A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH-FED 27-2
T27011-6B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH-FED 27-2
T27011-7	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT-MT 9108
T27011-7A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	RABBIT-MT 9108
T27011-7B	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT-MT 9108
T27011-8	04/07/09	00:00 BM	04/11/09	SO	Soil	PARK-MT 9002
T27011-8A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	PARK-MT 9002
T27011-8B	04/07/09	00:00 BM	04/11/09	SO	Soil	PARK-MT 9002
T27011-9	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED 1-1
T27011-9A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH FED 1-1

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



## Sample Summary

(continued)

ENCANA

Job No: T27011

Pit Closures

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T27011-9B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED 1-1
T27011-10	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT MT 9107
T27011-10A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	RABBIT MT 9107
T27011-10B	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT MT 9107
T27011-11	04/07/09	00:00 BM	04/11/09	SO	Soil	FED 29-1
T27011-11A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	FED 29-1
T27011-11B	04/07/09	00:00 BM	04/11/09	SO	Soil	FED 29-1
T27011-12	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT MT 9112
T27011-12A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	RABBIT MT 9112
T27011-12B	04/07/09	00:00 BM	04/11/09	SO	Soil	RABBIT MT 9112
T27011-13	04/07/09	00:00 BM	04/11/09	SO	Soil	CITIES FED 7-31
T27011-13A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CITIES FED 7-31
T27011-13B	04/07/09	00:00 BM	04/11/09	SO	Soil	CITIES FED 7-31

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

## Sample Summary

(continued)

ENCANA

Job No: T27011

Pit Closures

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T27011-14	04/07/09	00:00 BM	04/11/09	SO	Soil	PARK MT 9003
T27011-14A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	PARK MT 9003
T27011-14B	04/07/09	00:00 BM	04/11/09	SO	Soil	PARK MT 9003
T27011-15	04/07/09	00:00 BM	04/11/09	SO	Soil	CITIES FED 5-31
T27011-15A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CITIES FED 5-31
T27011-15B	04/07/09	00:00 BM	04/11/09	SO	Soil	CITIES FED 5-31
T27011-16	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED 7-18-2S-101W
T27011-16A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH FED 7-18-2S-101W
T27011-16B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED 7-18-2S-101W
T27011-17	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED N-36-2S-101W
T27011-17A	04/07/09	00:00 BM	04/11/09	AQ	Water Extract	CATH FED N-36-2S-101W
T27011-17B	04/07/09	00:00 BM	04/11/09	SO	Soil	CATH FED N-36-2S-101W

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





## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	CATH FED 7-18-2S-101W	<b>Date Sampled:</b>	04/07/09
<b>Lab Sample ID:</b>	T27011-16	<b>Date Received:</b>	04/11/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	87.2
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Pit Closures		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0016552.D	1	04/21/09	JL	n/a	n/a	VM684
Run #2							

	Initial Weight	Final Volume
Run #1	5.12 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.6	1.6	ug/kg	
108-88-3	Toluene	ND	5.6	1.4	ug/kg	
100-41-4	Ethylbenzene	ND	5.6	1.4	ug/kg	
1330-20-7	Xylene (total)	ND	17	4.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%		70-121%
2037-26-5	Toluene-D8	106%		76-132%
460-00-4	4-Bromofluorobenzene	177%		73-165%
17060-07-0	1,2-Dichloroethane-D4	83%		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

<b>Client Sample ID:</b>	CATH FED 7-18-2S-101W				
<b>Lab Sample ID:</b>	T27011-16			<b>Date Sampled:</b>	04/07/09
<b>Matrix:</b>	SO - Soil			<b>Date Received:</b>	04/11/09
<b>Method:</b>	SW846 8015			<b>Percent Solids:</b>	87.2
<b>Project:</b>	Pit Closures				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE043779.D	1	04/20/09	FI	n/a	n/a	GEE2224
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.64 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	2.54	5.8	0.41	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	82%		46-127%
98-08-8	aaa-Trifluorotoluene	88%		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

<b>Client Sample ID:</b>	CATH FED 7-18-2S-101W				
<b>Lab Sample ID:</b>	T27011-16			<b>Date Sampled:</b>	04/07/09
<b>Matrix:</b>	SO - Soil			<b>Date Received:</b>	04/11/09
<b>Method:</b>	SW846 8015 M    SW846 3550B			<b>Percent Solids:</b>	87.2
<b>Project:</b>	Pit Closures				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC213109.D	1	04/23/09	SS	04/14/09	OP11868	GCC897
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	25.1	9.6	3.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	35%		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:** CATH FED 7-18-2S-101W**Lab Sample ID:** T27011-16**Matrix:** SO - Soil**Project:** Pit Closures**Date Sampled:** 04/07/09**Date Received:** 04/11/09**Percent Solids:** 87.2

## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	4.1	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Calcium	9050	290	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Chromium	8.2	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Copper	9.6	1.5	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Lead	14.0	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Mercury	0.029	0.018	mg/kg	1	04/27/09	04/27/09 NS	SW846 7471A <sup>2</sup>	SW846 7471A <sup>4</sup>
Molybdenum	< 0.59	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Nickel	9.8	2.3	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Selenium	< 0.59	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Silver	< 0.59	0.59	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Zinc	60.4	1.2	mg/kg	1	04/16/09	04/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4031

(2) Instrument QC Batch: MA4044

(3) Prep QC Batch: MP9363

(4) Prep QC Batch: MP9420

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** CATH FED 7-18-2S-101W**Lab Sample ID:** T27011-16**Date Sampled:** 04/07/09**Matrix:** SO - Soil**Date Received:** 04/11/09**Percent Solids:** 87.2**Project:** Pit Closures**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	< 57	57	mg/kg	25	04/21/09 14:30	AFL	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	< 58	58	mg/kg	1	04/21/09 14:30	AFL	SW846 6010/7196A M
Solids, Percent	87.2		%	1	04/13/09	EV	SM 2540B M
Specific Conductivity	266	1.0	umhos/cm	1	04/24/09 12:45	KD	EPA 120.1
pH	8.6		su	1	04/15/09 12:05	EV	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Orlando, FL.

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

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** CATH FED 7-18-2S-101W**Lab Sample ID:** T27011-16A**Date Sampled:** 04/07/09**Matrix:** AQ - Water Extract**Date Received:** 04/11/09**Percent Solids:** 87.2**Project:** Pit Closures**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	615	100	ug/l	1	04/25/09	04/28/09 NS	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA4047

(2) Prep QC Batch: MP9423

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

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** CATH FED 7-18-2S-101W**Lab Sample ID:** T27011-16B**Date Sampled:** 04/07/09**Matrix:** SO - Soil**Date Received:** 04/11/09**Percent Solids:** 87.2**Project:** Pit Closures**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium <sup>a</sup>	237	11	mg/kg	1	04/24/09	04/26/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4043

(2) Prep QC Batch: MP9422

(a) Prep by LA DNR 29 B

RL = Reporting Limit



## GC/MS Volatiles

### QC Data Summaries

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Includes the following where applicable:

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

## Method Blank Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM683-MB	M0016529.D	1	04/20/09	JL	n/a	n/a	VM683

The QC reported here applies to the following samples:

Method: SW846 8260B

T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13

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

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	89% 70-121%
2037-26-5	Toluene-D8	100% 76-132%
460-00-4	4-Bromofluorobenzene	122% 73-165%
17060-07-0	1,2-Dichloroethane-D4	83% 57-122%

## Method Blank Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM684-MB	M0016548.D 1		04/21/09	JL	n/a	n/a	VM684

The QC reported here applies to the following samples:

Method: SW846 8260B

T27011-1, T27011-7, T27011-14, T27011-15, T27011-16, T27011-17

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

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	91% 70-121%
2037-26-5	Toluene-D8	99% 76-132%
460-00-4	4-Bromofluorobenzene	121% 73-165%
17060-07-0	1,2-Dichloroethane-D4	86% 57-122%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM683-BS	M0016527.D 1		04/20/09	JL	n/a	n/a	VM683

**The QC reported here applies to the following samples:**

**Method:** SW846 8260B

T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.9	98	70-114
100-41-4	Ethylbenzene	50	48.7	97	60-119
108-88-3	Toluene	50	50.3	101	68-115
1330-20-7	Xylene (total)	150	149	99	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	90%	70-121%
2037-26-5	Toluene-D8	100%	76-132%
460-00-4	4-Bromofluorobenzene	118%	73-165%
17060-07-0	1,2-Dichloroethane-D4	81%	57-122%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM684-BS	M0016551.D	1	04/21/09	JL	n/a	n/a	VM684

The QC reported here applies to the following samples:

Method: SW846 8260B

T27011-1, T27011-7, T27011-14, T27011-15, T27011-16, T27011-17

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	51.9	104	70-114
100-41-4	Ethylbenzene	50	52.5	105	60-119
108-88-3	Toluene	50	51.4	103	68-115
1330-20-7	Xylene (total)	150	163	109	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	91%	70-121%
2037-26-5	Toluene-D8	97%	76-132%
460-00-4	4-Bromofluorobenzene	117%	73-165%
17060-07-0	1,2-Dichloroethane-D4	88%	57-122%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T27011-12MS	M0016540.D	1	04/21/09	JL	n/a	n/a	VM683
T27011-12MSD	M0016541.D	1	04/21/09	JL	n/a	n/a	VM683
T27011-12	M0016539.D	1	04/21/09	JL	n/a	n/a	VM683

The QC reported here applies to the following samples:

Method: SW846 8260B

T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13

CAS No.	Compound	T27011-12		Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
		ug/kg	Q							
71-43-2	Benzene	ND		51.4	34.4	67*	30.7	54*	11	70-114/38
100-41-4	Ethylbenzene	ND		51.4	36.9	72	38.1	67	3	60-119/40
108-88-3	Toluene	ND		51.4	38.1	74	34.5	61*	10	68-115/38
1330-20-7	Xylene (total)	ND		154	110	71	109	64	1	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T27011-12	Limits
1868-53-7	Dibromofluoromethane	84%	85%	85%	70-121%
2037-26-5	Toluene-D8	104%	103%	102%	76-132%
460-00-4	4-Bromofluorobenzene	138%	142%	141%	73-165%
17060-07-0	1,2-Dichloroethane-D4	78%	82%	78%	57-122%

## GC Volatiles

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### QC Data Summaries

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Includes the following where applicable:

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

## Method Blank Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2222-MB	EE043721.D	1	04/15/09	FI	n/a	n/a	GEE2222

The QC reported here applies to the following samples:

Method: SW846 8015

T27011-2, T27011-3, T27011-4, T27011-5, T27011-6

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

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	106%
98-08-8	aaa-Trifluorotoluene	112%



## Method Blank Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2224-MB	EE043777.D	1	04/20/09	FI	n/a	n/a	GEE2224

The QC reported here applies to the following samples:

Method: SW846 8015

T27011-1, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	87%
98-08-8	aaa-Trifluorotoluene	87%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2224-BS	EE043773.D	1	04/20/09	FI	n/a	n/a	GEE2224

The QC reported here applies to the following samples:

Method: SW846 8015

T27011-1, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.394	99	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	82%	46-127%
98-08-8	aaa-Trifluorotoluene	92%	44-120%

## Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2222-BS	EE043717.D	1	04/15/09	FI	n/a	n/a	GEE2222
GEE2222-BSD	EE043718.D	1	04/15/09	FI	n/a	n/a	GEE2222

The QC reported here applies to the following samples:

Method: SW846 8015

T27011-2, T27011-3, T27011-4, T27011-5, T27011-6

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.4	0.447	112	0.437	109	2	78-115/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	98%	100%	46-127%
98-08-8	aaa-Trifluorotoluene	110%	111%	44-120%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T27011-9MS	EE043796.D	1	04/20/09	FI	n/a	n/a	GEE2224
T27011-9MSD	EE043797.D	1	04/20/09	FI	n/a	n/a	GEE2224
T27011-9	EE043781.D	1	04/20/09	FI	n/a	n/a	GEE2224

The QC reported here applies to the following samples:

Method: SW846 8015

T27011-1, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

CAS No.	Compound	T27011-9 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	3.52	J	26.6	26.8	87	26.7	87	0	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T27011-9	Limits
460-00-4	4-Bromofluorobenzene	87%	88%	82%	46-127%
98-08-8	aaa-Trifluorotoluene	93%	94%	89%	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

Page 1 of 1

**Job Number:** T27011

**Account:** ENCACOP ENCANA

**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11868-MB	CC213049.D 1		04/15/09	SS	04/14/09	OP11868	GCC894

The QC reported here applies to the following samples:

Method: SW846 8015 M

T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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

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

## Blank Spike Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11868-BS	CC213050.D 1		04/15/09	SS	04/14/09	OP11868	GCC894

The QC reported here applies to the following samples:

Method: SW846 8015 M

T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.2	30.1	91	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	74%	33-115%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T27011  
**Account:** ENCACOP ENCANA  
**Project:** Pit Closures

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11868-MS	CC213051.D 1		04/15/09	SS	04/14/09	OP11868	GCC894
OP11868-MSD	CC213052.D 1		04/15/09	SS	04/14/09	OP11868	GCC894
T27011-16	CC213109.D 1		04/23/09	SS	04/14/09	OP11868	GCC897

The QC reported here applies to the following samples:

Method: SW846 8015 M

T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

CAS No.	Compound	T27011-16 mg/kg	Spike Q	mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	25.1		37.8	41.8	44*	39.0	37*	7	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T27011-16	Limits
84-15-1	o-Terphenyl	39%	37%	35%	33-115%



## Metals Analysis

### QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9363  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/16/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.081	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86	0.47	<250
Chromium	0.50	.055	.035	0.37	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	0.019	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	-0.11	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075	0.040	<0.50
Nickel	2.0	.048	.065	0.27	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.015	<0.50
Silver	0.50	.043	.04	0.40	<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	0.12	<1.0

Associated samples MP9363: T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9363  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

04/16/09

04/16/09

	T26453-1A			QC	T26453-1A		Spikelot			QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec		Limits
Aluminum										
Antimony	anr									
Arsenic	5.7	5.7	0.0	0-20	5.7	28.4	29.7	76.3N		80-120
Barium										
Beryllium	anr									
Boron										
Cadmium	anr									
Calcium	11500	8560	29.3*(a)	0-20	11500	17200	3720	153.3N		80-120
Chromium	18.8	19.9	5.7	0-20	18.8	43.7	29.7	83.7		80-120
Cobalt										
Copper	9.1	9.1	0.0	0-20	9.1	33.2	29.7	81.0		80-120
Iron										
Lead	18.3	19.7	7.4	0-20	18.3	44.1	29.7	86.7		80-120
Magnesium										
Manganese										
Molybdenum	0.13	0.18	32.3 (b)	0-20	0.13	21.1	29.7	70.5N		80-120
Nickel	12.9	13.3	3.1	0-20	12.9	36.5	29.7	79.3N		80-120
Potassium										
Selenium	0.34	0.0	200.0(b)	0-20	0.34	21.3	29.7	70.5N		80-120
Silver	0.48	0.49	2.1	0-20	0.48	24.7	29.7	81.4		80-120
Sodium										
Strontium										
Thallium	anr									
Tin										
Titanium										
Vanadium										
Zinc	29.4	31.8	7.8	0-20	29.4	56.0	29.7	89.4		80-120

Associated samples MP9363: T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9363  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/16/09

Metal	T26453-1A Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony	anr				
Arsenic	5.7	27.8	30.8	71.8N	2.1 20
Barium					
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium	11500	13500	3850	52.0N	24.1 (a) 20
Chromium	18.8	43.8	30.8	81.2	0.2 20
Cobalt					
Copper	9.1	35.1	30.8	84.4	5.6 20
Iron					
Lead	18.3	42.6	30.8	78.9N	3.5 20
Magnesium					
Manganese					
Molybdenum	0.13	21.2	30.8	68.4N	0.5 20
Nickel	12.9	36.4	30.8	76.3N	0.3 20
Potassium					
Selenium	0.34	21.6	30.8	69.0N	1.4 20
Silver	0.48	25.1	30.8	79.9N	1.6 20
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Vanadium					
Zinc	29.4	54.6	30.8	81.8	2.5 20

Associated samples MP9363: T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T27011  
 Account: ENCACOP - ENCANA  
 Project: Pit Closures

QC Batch ID: MP9363  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 04/16/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	244	280	87.1	81-119
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	6660	7310	91.1	81-119
Chromium	130	142	91.5	81-120
Cobalt				
Copper	112	132	84.8	83-117
Iron				
Lead	65.2	72.2	90.3	82-118
Magnesium				
Manganese				
Molybdenum	72.5	80.9	89.6	80-120
Nickel	142	155	91.6	83-117
Potassium				
Selenium	143	165	86.7	78-123
Silver	109	126	86.5	66-134
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	306	346	88.4	79-121

Associated samples MP9363: T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9363  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/16/09

Metal	T26453-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	75.2	98.8	31.4 (a)	0-10
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	151000	173000	14.7*(b)	0-10
Chromium	247	317	28.1*(b)	0-10
Cobalt				
Copper	120	138	15.3*(b)	0-10
Iron				
Lead	241	284	18.1*(b)	0-10
Magnesium				
Manganese				
Molybdenum	1.73	11.3	551.4(a)	0-10
Nickel	170	219	28.9*(b)	0-10
Potassium				
Selenium	4.52	0.00	100.0(a)	0-10
Silver	6.33	34.0	437.0(a)	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	387	471	21.7*(b)	0-10

Associated samples MP9363: T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9393  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/22/09

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		
Calcium	250	.27	.86	3.9	<250
Chromium	0.50	.055	.035	0.016	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.14	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075	-0.028	<0.50
Nickel	2.0	.048	.065	0.060	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	-0.018	<0.50
Silver	0.50	.043	.04	0.015	<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	0.023	<1.0

Associated samples MP9393: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9393  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

04/22/09

04/22/09

	T27011-1			QC	T27011-1		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	6.5	6.5	0.0	0-20	6.5	33.0	31.2	85.1	80-120
Barium									
Beryllium									
Boron									
Cadmium									
Calcium	19000	18700	1.6	0-20	19000	31700	3890	326.2(a)	80-120
Chromium	12.2	12.4	1.6	0-20	12.2	37.7	31.2	81.9	80-120
Cobalt									
Copper									
Iron									
Lead	15.2	14.9	2.0	0-20	15.2	41.1	31.2	83.1	80-120
Magnesium									
Manganese									
Molybdenum	3.0	2.9	3.4	0-20	3.0	28.2	31.2	80.9	80-120
Nickel	14.5	14.1	2.8	0-20	14.5	39.3	31.2	79.6N	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	24.8	31.2	79.6N	80-120
Silver	0.22	0.25	12.8	0-20	0.22	28.1	31.2	89.5	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	68.5	64.8	5.6	0-20	68.5	86.6	31.2	58.1N	80-120

Associated samples MP9393: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
 Account: ENCACOP - ENCANA  
 Project: Pit Closures

QC Batch ID: MP9393  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 04/22/09

Metal	T27011-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.5	31.4	34.6	72.0N	5.0	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	19000	21100	4320	48.6 (a)	40.2 (b)	20
Chromium	12.2	40.1	34.6	80.7	6.2	20
Cobalt						
Copper						
Iron						
Lead	15.2	42.2	34.6	78.1N	2.6	20
Magnesium						
Manganese						
Molybdenum	3.0	27.9	34.6	72.0N	1.1	20
Nickel	14.5	41.6	34.6	78.4N	5.7	20
Potassium						
Selenium	0.0	26.4	34.6	76.4N	6.2	20
Silver	0.22	29.8	34.6	85.6	5.9	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	68.5	95.0	34.6	76.7N	9.3	20

Associated samples MP9393: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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.

(b) High RPD due to possible matrix interference.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9393  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/22/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	228	280	81.4	81-119
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	6390	7310	87.4	81-119
Chromium	123	142	86.6	81-120
Cobalt				
Copper				
Iron				
Lead	61.6	72.2	85.3	82-118
Magnesium				
Manganese				
Molybdenum	67.6	80.9	83.6	80-120
Nickel	136	155	87.7	83-117
Potassium				
Selenium	133	165	80.6	78-123
Silver	107	126	84.9	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	287	346	82.9	79-121

Associated samples MP9393: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9393  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/22/09

Metal	T27011-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	79.0	82.6	4.5	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	230000	249000	8.2	0-10
Chromium	148	162	10.0	0-10
Cobalt				
Copper				
Iron				
Lead	184	206	11.9*(a)	0-10
Magnesium				
Manganese				
Molybdenum	36.8	39.9	8.4	0-10
Nickel	175	198	13.1*(a)	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	2.68	0.00	100.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	830	939	13.2*(a)	0-10

Associated samples MP9393: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9420  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 04/27/09

Metal	RL	IDL	MDL	MB raw	final
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Mercury	0.017	.0041	.00066	0.00075	<0.017
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Associated samples MP9420: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9420  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 04/27/09

04/27/09

Metal	T27011-11		QC	Limits	T27011-11		Spikelot	% Rec	QC
	Original	DUP			Original	MS			
Mercury	0.050	0.057	13.1	0-20	0.050	0.34	0.257	112.6	75-125

Associated samples MP9420: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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

7.3.2  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9420  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 04/27/09

Metal	T27011-11 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.050	0.36	0.262	118.3	5.7	

Associated samples MP9420: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9420  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 04/27/09

Metal	LCS Result	Spikelot HGLCD050 % Rec	QC Limits
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Mercury 8.8 8.48 103.8 66-132

Associated samples MP9420: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9421  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/27/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03		
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	-0.020	<1.3
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 MP9421: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9421  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

04/27/09

04/27/09

Metal	T27011-10 Original DUP		RPD	QC Limits	T27011-10 Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper	12.7	13.9	9.0	0-20	12.7	37.6	25.6	97.4	80-120
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9421: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9421  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/27/09

Metal	T27011-10 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper	12.7	38.3	26.8	95.6	1.8	20
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9421: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9421  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/27/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	122	132	92.4	83-117
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9421: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9421  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/27/09

Metal	T27011-10 Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	199	206	3.6	0-10
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9421: T27011-1, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9, T27011-10, T27011-11, T27011-12

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9422  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/24/09

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	0.13	<10 (a)
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 MP9422: T27011-1B, T27011-2B, T27011-3B, T27011-4B, T27011-5B, T27011-6B, T27011-7B, T27011-8B, T27011-9B, T27011-10B, T27011-11B, T27011-12B, T27011-13B, T27011-14B, T27011-15B, T27011-16B, T27011-17B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Prep by LA DNR 29 B

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9422  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/24/09

04/24/09

Metal	T27011-1B		RPD	QC Limits	T27011-1B		Spikelot MPTW4	% Rec	QC Limits
	Original	DUP			Original	MS			
Aluminum									
Antimony									
Arsenic									
Barium	218	228 (a)	4.5	0-20	218	207 (a)	14.2	-77.5(b)	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 MP9422: T27011-1B, T27011-2B, T27011-3B, T27011-4B, T27011-5B, T27011-6B, T27011-7B, T27011-8B, T27011-9B, T27011-10B, T27011-11B, T27011-12B, T27011-13B, T27011-14B, T27011-15B, T27011-16B, T27011-17B

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) Prep by LA DNR 29 B

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9422  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/24/09

Metal	T27011-1B Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic					
Barium	218	210 (a)	14.2	-56.5(b)	1.4
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 MP9422: T27011-1B, T27011-2B, T27011-3B, T27011-4B, T27011-5B, T27011-6B, T27011-7B, T27011-8B, T27011-9B, T27011-10B, T27011-11B, T27011-12B, T27011-13B, T27011-14B, T27011-15B, T27011-16B, T27011-17B

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) Prep by LA DNR 29 B

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

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9422  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/24/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	447 (a)	520	86.0	83-117
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 MP9422: T27011-1B, T27011-2B, T27011-3B, T27011-4B, T27011-5B, T27011-6B, T27011-7B, T27011-8B, T27011-9B, T27011-10B, T27011-11B, T27011-12B, T27011-13B, T27011-14B, T27011-15B, T27011-16B, T27011-17B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Prep by LA DNR 29 B



# SERIAL DILUTION RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9422  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/24/09

Metal	T27011-1B Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	3090	3540	14.3*	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 MP9422: T27011-1B, T27011-2B, T27011-3B, T27011-4B, T27011-5B, T27011-6B, T27011-7B, T27011-8B, T27011-9B, T27011-10B, T27011-11B, T27011-12B, T27011-13B, T27011-14B, T27011-15B, T27011-16B, T27011-17B

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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9423  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/25/09

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	2.0	<100 (a)
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35		
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8		
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130		
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP9423: T27011-1A, T27011-2A, T27011-3A, T27011-4A, T27011-5A, T27011-6A, T27011-7A, T27011-8A, T27011-9A, T27011-10A, T27011-11A, T27011-12A, T27011-13A, T27011-14A, T27011-15A, T27011-16A, T27011-17A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9423  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/25/09 04/25/09

Metal	T27011-1A Original	DUP	RPD	QC Limits	T27011-1A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	280	138 (a)	151.0*(b)	0-20	280	645 (a)	500	-68.6N	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 MP9423: T27011-1A, T27011-2A, T27011-3A, T27011-4A, T27011-5A, T27011-6A, T27011-7A, T27011-8A, T27011-9A, T27011-10A, T27011-11A, T27011-12A, T27011-13A, T27011-14A, T27011-15A, T27011-16A, T27011-17A

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) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.  
(b) High RPD due to possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9423  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/25/09

Metal	T27011-1A Original MSD		Spikelot MPTW4		% Rec	MSD RPD	QC Limit
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Boron	280	597 (a)	500	-78.2N	7.7	20	
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Magnesium							
Manganese							
Molybdenum							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Strontium							
Thallium							
Tin							
Titanium							
Vanadium							
Zinc							

Associated samples MP9423: T27011-1A, T27011-2A, T27011-3A, T27011-4A, T27011-5A, T27011-6A, T27011-7A, T27011-8A, T27011-9A, T27011-10A, T27011-11A, T27011-12A, T27011-13A, T27011-14A, T27011-15A, T27011-16A, T27011-17A

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

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9423  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/25/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1010 (a)	10000	101.3	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 MP9423: T27011-1A, T27011-2A, T27011-3A, T27011-4A, T27011-5A, T27011-6A, T27011-7A, T27011-8A, T27011-9A, T27011-10A, T27011-11A, T27011-12A, T27011-13A, T27011-14A, T27011-15A, T27011-16A, T27011-17A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

QC Batch ID: MP9423  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 04/25/09

Metal	T27011-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	280	286	71.0*(a)	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9423: T27011-1A, T27011-2A, T27011-3A, T27011-4A, T27011-5A, T27011-6A, T27011-7A, T27011-8A, T27011-9A, T27011-10A, T27011-11A, T27011-12A, T27011-13A, T27011-14A, T27011-15A, T27011-16A, T27011-17A

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

## General Chemistry

### QC Data Summaries

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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: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GN16665	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN16665: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2,  
T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T27011  
Account: ENCACOP - ENCANA  
Project: Pit Closures

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Percent	GN16551	T26927-2	%	83.4	83.2	0.2	0-20%
Solids, Percent	GN16553	T27011-15	%	81.4	81.6	0.2	0-20%
Specific Conductivity	GN16665	T27011-2	umhos/cm	3620	3630	0.3	0-20%
pH	GN16568	T27011-13	su	8.8	8.9	0.2	0-20%

Associated Samples:

Batch GN16551: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9

Batch GN16553: T27011-15, T27011-16, T27011-17

Batch GN16568: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9

Batch GN16665: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9

(\*) Outside of QC limits

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## Misc. Forms

### Custody Documents and Other Forms

(Accutest Laboratories Southeast, Inc.)

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Includes the following where applicable:

- Chain of Custody

# SUBCONTRACT COC

Page 1 of 1

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

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <b>T27011</b>

Client Information		Subcontract Information		Requested Analyses												Matrix Codes	
Company Name Accutest Gulf Coast		Subcontract Laboratory ACCUTEST FLORIDA														DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge OI - Oil LQ - Liquid SOL - Other Solid	
Project Contact Sylvia Garza Email: <a href="mailto:sylvia@accutest.com">sylvia@accutest.com</a>		Laboratory Contact Sample Receiving Email:															
Address 10165 Harwin Dr, Suite 150 City: Houston State: TX Zip: 77036		Address City: State: Zip:															
Phone No. 713-271-4700		Phone No.															
Accutest Sample Number	Collection		Matrix	# of bottles	Number of preserved bottles										XCR	LAB USE ONLY	
	Date	Time			HC	HC2	HC3	HC4	HC5	HC6	HC7	HC8	HC9	HC10			
T27011-1 / CATH-FED 31-1	4/7/2009		SO	1													X
T27011-2 / CATH-FED 31-3	4/7/2009		SO	1													X
T27011-3 / CATH-FED 33-14	4/7/2009		SO	1													X
T27011-4 / CATH-FED 0-31-35-101W	4/7/2009		SO	1													X
T27011-5 / CATH-FED J-25	4/7/2009		SO	1													X
T27011-6 / CATH-FED 27-2	4/7/2009		SO	1													X
T27011-7 / RABBIT-MT 9108	4/7/2009		SO	1													X
T27011-8 / PARK-MT 9002	4/7/2009		SO	1													X
T27011-9 / CATH FED 1-1	4/7/2009		SO	1													X
T27011-10 / RABBIT MT 9107	4/7/2009		SO	1													X
Turnaround Time (Business days)		Approved By / Date:		Data Deliverable Information												Comments / Remarks	
<input type="checkbox"/> STANDARD <input type="checkbox"/> 7 Day <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		APRIL 27th		<input type="checkbox"/> Commercial "A" <input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Data Package <input type="checkbox"/> TRRP-13 <input type="checkbox"/> EDD Format <input type="checkbox"/> Other												SEND THE MAX of 5 GRAMS!! Real time analytical data available via Lablink	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Received By:	
1 <i>[Signature]</i>		4-14-09 1621		1 <i>FX</i>		4-15-09		2 <i>FX</i>		4-15-09		2 <i>[Signature] (ACCUTEST)</i>					
3				3				4				4					
5				5				Custody Seal #		Preserved where applicable		On Ice		Cooler Temp.		1.8	

T27011: Chain of Custody

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Accutest Laboratories Southeast, Inc.

Page 1 of 1

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <b>T27011</b>

## 9.1

185 of 190  
ACCUTEST  
T27011 LABORATORIES

# **ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: T27011 CLIENT: AL6C PROJECT: T27011  
 DATE/TIME RECEIVED: 4-15-09 09:00 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 1.8  
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
 AIRBILL NUMBERS: 7965 1903 4484

## **COOLER INFORMATION**

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET
- ☐ WET ICE RECEIVED IN COOLER

## **TRIP BLANK INFORMATION**

- ☐ TRIP BLANK PROVIDED
- ☒ TRIP BLANK NOT PROVIDED
- ☒ TRIP BLANK NOT ON COC
- ☐ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☐ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

## **MISC. INFORMATION**

NUMBER OF ENCORES ? \_\_\_\_\_  
 NUMBER OF 5035 FIELD KITS ? \_\_\_\_\_  
 NUMBER OF LAB FILTERED METALS ? \_\_\_\_\_

SUMMARY OF COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## **SAMPLE INFORMATION**

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
- ☐ CORRECT NUMBER OF CONTAINERS USED
- ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
- ☐ INSUFFICIENT VOLUME FOR ANALYSIS
- ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
- ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
- ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- ☐ UNCLEAR FILTERING INSTRUCTIONS
- ☐ UNCLEAR COMPOSITING INSTRUCTIONS
- ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
- ☐ % SOLIDS JAR NOT RECEIVED
- ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
- ☐ RESIDUAL CHLORINE PRESENT

( APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE LC 4-15-09 TECHNICIAN SIGNATURE/DATE CEL 4/15/09 ASBD 12/17/07

**T27011: Chain of Custody**

**Page 3 of 3**

## General Chemistry

### QC Data Summaries

(Accutest Laboratories Southeast, Inc.)

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: T27011  
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
Project: ENCACOP: Pit Closures

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN34764	2.0	0.0	mg/kg	20.0	18	92.4	80-120%

Associated Samples:

Batch GN34764: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9  
(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T27011  
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
Project: ENCACOP: Pit Closures

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN34764	T27011-10	mg/kg	1.7	5.1	99.4* (a)	0-20%

Associated Samples:

Batch GN34764: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9

(\*) Outside of QC limits

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



MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T27011  
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.  
Project: ENCACOP: Pit Closures

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN34764	T27011-10	mg/kg	1.7	22.8	17	66.5*(a)	80-120%

Associated Samples:

Batch GN34764: T27011-1, T27011-10, T27011-11, T27011-12, T27011-13, T27011-14, T27011-15, T27011-16, T27011-17, T27011-2, T27011-3, T27011-4, T27011-5, T27011-6, T27011-7, T27011-8, T27011-9

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.