Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

03/31/10

Technical Report for

ENCANA

Hells Hole 9122

Accutest Job Number: T49285

Sampling Date: 03/15/10

Report to:

EnCana
2717 Co. Rd. 215
Parachute, CO 81635
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ATTN: Brad Kieding

Total number of pages in report: **66**

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ACCREDITED IN ACCORDANCE WITH nelac

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

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

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Accutest Laboratories

Sample Summary

ENCANA

Hells Hole 9122

Job No: T49285

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T49285-1	03/15/10	11:15		03/16/10	SO	Soil	TB CHAR 3-15-10
T49285-1A	03/15/10	11:15		03/16/10	SO	Soil	TB CHAR 3-15-10
T49285-2	03/15/10	10:45		03/16/10	SO	Soil	BACK GROUND 3-15-10
T49285-2A	03/15/10	10:45		03/16/10	SO	Soil	BACK GROUND 3-15-10

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA **Job No** T49285

Site: Hells Hole 9122 **Report Date** 3/31/2010 3:33:40 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 03/15/2010 and were received at Accutest on 03/16/2010 properly preserved, at 4.2 Deg. C and intact. These Samples received an Accutest job number of T49285. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** VY2462

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49473-1MS, T49473-1MSD were used as the QC samples indicated.
- Sample(s) T49285-1 have surrogates outside control limits. Probable cause due to matrix interference. Confirmed by reanalysis.

Matrix SO **Batch ID:** VY2463

- All samples were analyzed within the recommended method holding time.
- Sample(s) T49740-2MS, T49740-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP14344

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T49285-2MS, T49285-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Pyrene are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Pyrene are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for 2-Methylnaphthalene are outside control limits for sample OP14344-MSD. Probable cause due to sample homogeneity.
- Sample(s) T49285-1 have surrogates outside control limits. Outside control limits due to dilution.
- T49285-1: Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

Volatiles by GC By Method SW846 8015

Matrix	SO	Batch ID:	GEE2678

- All samples were analyzed within the recommended method holding time.
- Sample(s) T49359-1MS, T49359-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49285-1 have surrogates outside control limits. Probable cause due to matrix interference.

Matrix	SO	Batch ID:	GEE2682

- All samples were analyzed within the recommended method holding time.
- Sample(s) T49285-2MS, T49285-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015 M

Matrix	SO	Batch ID:	OP14347

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T49370-1MS, T49370-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- T49285-1 for o-Terphenyl: Outside control limits due to dilution.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP11408

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49366-1BDUP, T49366-1BSDL were used as the QC samples for metals.

Matrix	SO	Batch ID:	MP11435

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49285-1DUP, T49285-1MS, T49285-1MSD, T49285-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Cadmium, Selenium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP11435-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP11429

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49539-1MS, T49539-1MSD, T49539-1DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP11429-D1. High RPD due to possible sample nonhomogeneity.

Wet Chemistry By Method EPA 120.1

Matrix	AQ	Batch ID:	GN21730

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49285-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	MP11408

- T49285-2A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]
- T49285-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM 2540 G

Matrix	SO	Batch ID:	GN21519

- Sample(s) T49374-4DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A

Matrix	SO	Batch ID:	GN21490

- All method blanks for this batch meet method specific criteria.
- Sample(s) T49127-1DUP, T49127-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M

Matrix	SO	Batch ID:	R22050

- T49285-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix	SO	Batch ID:	R22051

- T49285-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN21534

- Sample(s) T49285-1DUP were used as the QC samples for pH.

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

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8260B	**Percent Solids:**	74.7
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0038905.D	1	03/26/10	JL	n/a	n/a	VY2462
Run #2	Y0038933.D	20	03/26/10	JL	n/a	n/a	VY2463

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.41 g	5.0 ml	100 ul
Run #2	5.41 g	5.0 ml	100 ul

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.30	0.39	0.055	mg/kg	
108-88-3	Toluene	58.2 [a]	7.9	1.5	mg/kg	
100-41-4	Ethylbenzene	31.3 [a]	7.9	1.4	mg/kg	
1330-20-7	Xylene (total)	430 [a]	24	3.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	104%	70-121%
2037-26-5	Toluene-D8	129%	110%	76-132%
460-00-4	4-Bromofluorobenzene	338% [b]	121%	73-165%
17060-07-0	1,2-Dichloroethane-D4	90%	97%	57-122%

(a) Result is from Run# 2
(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

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:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	74.7
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	H37609.D	1	03/25/10	SC	03/19/10	OP14344	EH2014
Run #2 [a]	H37633.D	200	03/26/10	SC	03/19/10	OP14344	EH2015

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0088	0.0015	mg/kg	
208-96-8	Acenaphthylene	ND	0.0088	0.0031	mg/kg	
120-12-7	Anthracene	0.0315	0.0088	0.0017	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0088	0.0014	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0088	0.0047	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0088	0.0047	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0088	0.0088	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0088	0.0057	mg/kg	
218-01-9	Chrysene	ND	0.0088	0.0022	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0088	0.0085	mg/kg	
206-44-0	Fluoranthene	ND	0.0088	0.0019	mg/kg	
86-73-7	Fluorene	0.435	0.0088	0.0031	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0088	0.0066	mg/kg	
90-12-0	1-Methylnaphthalene	16.5 [b]	1.8	0.33	mg/kg	
91-57-6	2-Methylnaphthalene	23.4 [b]	1.8	0.30	mg/kg	
91-20-3	Naphthalene	26.3 [b]	1.8	0.27	mg/kg	
85-01-8	Phenanthrene	0.435	0.0088	0.0012	mg/kg	
129-00-0	Pyrene	0.0104	0.0088	0.0030	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	42%	0% [c]	10-127%
321-60-8	2-Fluorobiphenyl	19%	0% [c]	11-133%
1718-51-0	Terphenyl-d14	85%	0% [c]	15-187%

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

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8015	**Percent Solids:**	74.7
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE052877.D	40	03/17/10	FI	n/a	n/a	GEE2678
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.41 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10) [a]	5600	320	19	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	144%		46-127%
98-08-8	aaa-Trifluorotoluene	112%		44-120%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	74.7
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF195858.D	10	03/19/10	EM	03/19/10	OP14347	GIB971
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	3340	110	36	mg/kg	

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

(a) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB CHAR 3-15-10
Lab Sample ID: T49285-1
Matrix: SO - Soil
Project: Hells Hole 9122

Date Sampled: 03/15/10
Date Received: 03/16/10
Percent Solids: 74.7

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	13.8	0.76	0.15	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Barium	577	15	0.046	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Cadmium	0.34 B	0.38	0.076	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Chromium	13.0	0.76	0.053	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Copper	17.9	1.9	0.099	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Lead	7.1	0.76	0.30	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Mercury	0.11	0.021	0.00084	mg/kg	1	03/29/10	03/29/10	TW	SW846 7471A [1]	SW846 7471A [3]
Nickel	10.5	3.0	0.099	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Selenium	1.7	0.76	0.18	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Silver	0.061 U	0.76	0.061	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Zinc	31.8	1.5	0.30	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA4633
(2) Instrument QC Batch: MA4634
(3) Prep QC Batch: MP11429
(4) Prep QC Batch: MP11435

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
		Percent Solids:	74.7
Project:	Hells Hole 9122		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.5 B	2.0	mg/kg	1	03/18/10 09:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	11.5	2.8	mg/kg	1	03/30/10 14:53	NS	SW846 6010/7196A M
Solids, Percent	74.7		%	1	03/19/10	MR	SM 2540 G
Specific Conductivity	168	1.0	umhos/cm	1	03/29/10 15:00	KD	EPA 120.1
pH	8.21		su	1	03/19/10 17:00	CN	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: TB CHAR 3-15-10
Lab Sample ID: T49285-1A
Matrix: SO - Soil
Project: Hells Hole 9122

Date Sampled: 03/15/10
Date Received: 03/16/10
Percent Solids: 74.7

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	456	25	0.18	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]
Magnesium	289	25	0.039	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]
Sodium	223	25	0.67	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4631
(2) Prep QC Batch: MP11408

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	TB CHAR 3-15-10		
Lab Sample ID:	T49285-1A	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
		Percent Solids:	74.7
Project:	Hells Hole 9122		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	2.01		ratio	1	03/28/10 22:49	NS	LADNR29B

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8260B	**Percent Solids:**	88.5
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0038919.D	1	03/26/10	JL	n/a	n/a	VY2463
Run #2							

	Initial Weight	Final Volume
Run #1	5.17 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0055	0.00076	mg/kg	
108-88-3	Toluene	ND	0.0055	0.0010	mg/kg	
100-41-4	Ethylbenzene	ND	0.0055	0.00099	mg/kg	
1330-20-7	Xylene (total)	ND	0.016	0.0023	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-121%
2037-26-5	Toluene-D8	121%		76-132%
460-00-4	4-Bromofluorobenzene	126%		73-165%
17060-07-0	1,2-Dichloroethane-D4	90%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	88.5
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H37513.D	1	03/21/10	SC	03/19/10	OP14344	EH2010
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0075	0.0013	mg/kg	
208-96-8	Acenaphthylene	ND	0.0075	0.0026	mg/kg	
120-12-7	Anthracene	ND	0.0075	0.0014	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0075	0.0012	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0075	0.0040	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0075	0.0040	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0075	0.0075	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0075	0.0049	mg/kg	
218-01-9	Chrysene	ND	0.0075	0.0018	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0075	0.0072	mg/kg	
206-44-0	Fluoranthene	ND	0.0075	0.0016	mg/kg	
86-73-7	Fluorene	ND	0.0075	0.0026	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0075	0.0056	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.0075	0.0014	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0075	0.0013	mg/kg	
91-20-3	Naphthalene	ND	0.0075	0.0011	mg/kg	
85-01-8	Phenanthrene	ND	0.0075	0.0010	mg/kg	
129-00-0	Pyrene	ND	0.0075	0.0025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	28%		10-127%
321-60-8	2-Fluorobiphenyl	32%		11-133%
1718-51-0	Terphenyl-d14	58%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8015	**Percent Solids:**	88.5
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE052933.D	1	03/18/10	FI	n/a	n/a	GEE2682
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	6.2	0.37	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		46-127%
98-08-8	aaa-Trifluorotoluene	109%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	88.5
Project:	Hells Hole 9122		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF195856.D	1	03/19/10	EM	03/19/10	OP14347	GIB971
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	42.0	9.3	3.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	100%		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: BACK GROUND 3-15-10
Lab Sample ID: T49285-2
Matrix: SO - Soil
Project: Hells Hole 9122

Date Sampled: 03/15/10
Date Received: 03/16/10
Percent Solids: 88.5

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	20.9	0.69	0.14	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Barium	487	14	0.041	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Cadmium	0.39	0.34	0.069	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Chromium	17.3	0.69	0.048	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Copper	19.8	1.7	0.090	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Lead	8.3	0.69	0.28	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Mercury	0.090	0.018	0.00073	mg/kg	1	03/29/10	03/29/10	TW	SW846 7471A [1]	SW846 7471A [3]
Nickel	12.7	2.8	0.090	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Selenium	1.3	0.69	0.17	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Silver	0.055 U	0.69	0.055	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]
Zinc	48.4	1.4	0.28	mg/kg	1	03/30/10	03/30/10	NS	SW846 6010B [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA4633
(2) Instrument QC Batch: MA4634
(3) Prep QC Batch: MP11429
(4) Prep QC Batch: MP11435

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
		Percent Solids:	88.5
Project:	Hells Hole 9122		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.2 B	2.0	mg/kg	1	03/18/10 09:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	16.1	2.7	mg/kg	1	03/30/10 15:25	NS	SW846 6010/7196A M
Solids, Percent	88.5		%	1	03/19/10	MR	SM 2540 G
Specific Conductivity	128	1.0	umhos/cm	1	03/29/10 15:00	KD	EPA 120.1
pH	8.51		su	1	03/19/10 17:00	CN	SW846 9045C

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: BACK GROUND 3-15-10
Lab Sample ID: T49285-2A
Matrix: SO - Soil
Project: Hells Hole 9122

Date Sampled: 03/15/10
Date Received: 03/16/10
Percent Solids: 88.5

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	207	25	0.18	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]
Magnesium	160	25	0.039	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]
Sodium	231	25	0.67	mg/l	5	03/26/10	03/28/10	NS	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA4631
(2) Prep QC Batch: MP11408

RL = Reporting Limit
MDL = Method Detection Limit

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

Report of Analysis

Client Sample ID:	BACK GROUND 3-15-10		
Lab Sample ID:	T49285-2A	**Date Sampled:**	03/15/10
Matrix:	SO - Soil	**Date Received:**	03/16/10
		Percent Solids:	88.5
Project:	Hells Hole 9122		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	2.93		ratio	1	03/28/10 22:56	NS	LADNR29B

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

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY

PAGE ___ OF ___

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T49285

Client / Reporting Information

Company Name: EnCana
Street Address: 2717 CR 215
City: Parachute State: CO Zip: 81635
Project Contact: Brad Kiefing E-mail: bradley.kiefing@encana.com
Phone #: 970-260-5457 Fax #:
Sampler(s) Name(s): Kiefing Phone #:

Project Information

Project Name: Hells Hole 9122
Street: —
City: — State:
Project #:
Client Purchase Order #:
Project Manager: Kiedwg

Billing Information (If different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses: Table 910-1; TPH; BTEX

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Table 910-1	TPH	BTEX	LAB USE ONLY
1	TB CHAR 3-15-10	3-15-10	11:15	BK	S	2													X			
2	BACKGROUND 3-15-10	3-15-10	10:45	BK	S	2													X			

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

Turnaround Time (Business days)

- ☐ Standard
- ☐ 5 Day RUSH
- ☐ 4 Day RUSH
- ☐ 3 Day RUSH
- ☐ 2 Day RUSH
- ☐ 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULT1 (Level 3+4)
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C"
- ☐ TRRP
- ☐ EDD Format
- ☐ Other ______

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

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

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	3-15-10 1700	1	2 Fed Ex	03/16/10 09:30	2 [signature]
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # ☐ Intact ☐ Not Intact	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 4.2

T49285: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T49285 Client: Encana Date/Time Received: 3-16-10 - 933

# of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: +.4°C

Cooler Temps: #1: 4.2°C #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

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

Airbill Numbers: _____

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY

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

SAMPLE INFORMATION

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

TRIP BLANK INFORMATION

- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [ ] Received Water Trip Blank
- [ ] Received Soil TB

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

Summary of Discrepancies:
(1) No Temp Blank- Temp from Sample taken

TECHNICIAN SIGNATURE/DATE: 3-16-10

INFORMATION AND SAMPLE LABELING VERIFIED BY: 03/16/10

CORRECTIVE ACTIONS

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

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

Client Instructions:

i:\mwalker\forms\samplemanagement

T49285: Chain of Custody
Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T49285 DATE/TIME RECEIVED: 3-16-10 933

CLIENT: Encana INITIALS: EC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	TB CHAR 3-15-10	3-15-10 1115	S	16oz	1	2-97	1 2 3 4 5 6 7 8	<2 >12
↓	↓	↓	↓	↓	↓	2	VR	1 2 3 4 5 6 7 8	<2 >12
	2	BACKGROUND 3-15-10	1045			1	2-97	1 2 3 4 5 6 7 8	<2 >12
	↓	↓	↓	↓	↓	2	VR	1 2 3 4 5 6 7 8	<2 >12
↓	3	Trip Blank	—	STB	4oz	1-2	VR	1 2 3 4 5 (6) 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

EC 3/16/10

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other
LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer
Rev 8/13/01 ewn

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: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2462-MB	Y0038896.D	1	03/26/10	JL	n/a	n/a	VY2462

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

T49285-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	70-121%
2037-26-5	Toluene-D8	116%	76-132%
460-00-4	4-Bromofluorobenzene	120%	73-165%
17060-07-0	1,2-Dichloroethane-D4	92%	57-122%

Method Blank Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2463-MB	Y0038916.D	1	03/26/10	JL	n/a	n/a	VY2463

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

T49285-1, T49285-2

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

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	70-121%
2037-26-5	Toluene-D8	120%	76-132%
460-00-4	4-Bromofluorobenzene	116%	73-165%
17060-07-0	1,2-Dichloroethane-D4	96%	57-122%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2462-BS	Y0038894.D	1	03/25/10	JL	n/a	n/a	VY2462

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

T49285-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.7	91	70-114

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	70-121%
2037-26-5	Toluene-D8	118%	76-132%
460-00-4	4-Bromofluorobenzene	124%	73-165%
17060-07-0	1,2-Dichloroethane-D4	95%	57-122%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2463-BS	Y0038914.D	1	03/26/10	JL	n/a	n/a	VY2463

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

T49285-1, T49285-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	50.3	101	70-114
100-41-4	Ethylbenzene	50	52.7	105	60-119
108-88-3	Toluene	50	50.8	102	68-115
1330-20-7	Xylene (total)	150	155	103	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-121%
2037-26-5	Toluene-D8	117%	76-132%
460-00-4	4-Bromofluorobenzene	112%	73-165%
17060-07-0	1,2-Dichloroethane-D4	96%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49473-1MS	Y0038898.D	1	03/26/10	JL	n/a	n/a	VY2462
T49473-1MSD	Y0038899.D	1	03/26/10	JL	n/a	n/a	VY2462
T49473-1	Y0038897.D	1	03/26/10	JL	n/a	n/a	VY2462

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

T49285-1

CAS No.	Compound	T49473-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.8	U	51.5	46.7	91	49.6	95	6	70-114/38

CAS No.	Surrogate Recoveries	MS	MSD	T49473-1	Limits
1868-53-7	Dibromofluoromethane	95%	96%	98%	70-121%
2037-26-5	Toluene-D8	116%	115%	117%	76-132%
460-00-4	4-Bromofluorobenzene	116%	116%	125%	73-165%
17060-07-0	1,2-Dichloroethane-D4	90%	93%	87%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49740-2MS	Y0038927.D	1	03/26/10	JL	n/a	n/a	VY2463
T49740-2MSD	Y0038928.D	1	03/26/10	JL	n/a	n/a	VY2463
T49740-2	Y0038926.D	1	03/26/10	JL	n/a	n/a	VY2463

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

T49285-1, T49285-2

CAS No.	Compound	T49740-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	5.3 U		50.5	53.1	105	57.9	108	9	70-114/38
100-41-4	Ethylbenzene	5.3 U		50.5	51.1	101	56.8	106	11	60-119/40
108-88-3	Toluene	2.1	J	50.5	57.7	110	63.1	114	9	68-115/38
1330-20-7	Xylene (total)	16 U		151	145	96	160	100	10	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T49740-2	Limits
1868-53-7	Dibromofluoromethane	102%	100%	102%	70-121%
2037-26-5	Toluene-D8	127%	125%	125%	76-132%
460-00-4	4-Bromofluorobenzene	164%	156%	162%	73-165%
17060-07-0	1,2-Dichloroethane-D4	99%	98%	93%	57-122%

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14344-MB	H37467.D	1	03/20/10	SC	03/19/10	OP14344	EH2009

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

T49285-1, T49285-2

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

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	66%	10-127%
321-60-8	2-Fluorobiphenyl	55%	11-133%
1718-51-0	Terphenyl-d14	56%	15-187%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14344-BS	H37469.D	1	03/20/10	SC	03/19/10	OP14344	EH2009

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

T49285-1, T49285-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	57.2	34	18-118
208-96-8	Acenaphthylene	167	130	78	35-125
120-12-7	Anthracene	167	85.9	52	24-116
56-55-3	Benzo(a)anthracene	167	116	70	32-132
50-32-8	Benzo(a)pyrene	167	89.9	54	36-130
205-99-2	Benzo(b)fluoranthene	167	101	61	35-134
191-24-2	Benzo(g,h,i)perylene	167	97.4	58	18-149
207-08-9	Benzo(k)fluoranthene	167	110	66	30-131
218-01-9	Chrysene	167	124	74	37-124
53-70-3	Dibenzo(a,h)anthracene	167	106	64	23-150
206-44-0	Fluoranthene	167	87.7	53	28-118
86-73-7	Fluorene	167	146	88	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	101	61	18-150
90-12-0	1-Methylnaphthalene	167	88.1	53	10-128
91-57-6	2-Methylnaphthalene	167	153	92	28-113
91-20-3	Naphthalene	167	168	101	31-106
85-01-8	Phenanthrene	167	90.2	54	37-112
129-00-0	Pyrene	167	124	74	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	100%	10-127%
321-60-8	2-Fluorobiphenyl	55%	11-133%
1718-51-0	Terphenyl-d14	51%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14344-MS	H37526.D	1	03/22/10	SC	03/19/10	OP14344	EH2011
OP14344-MSD	H37527.D	1	03/22/10	SC	03/19/10	OP14344	EH2011
T49285-2	H37513.D	1	03/21/10	SC	03/19/10	OP14344	EH2010

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

T49285-1, T49285-2

CAS No.	Compound	T49285-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		188	196	104	159	85	21	10-153/80
208-96-8	Acenaphthylene	ND		188	121	64	122	65	1	10-144/71
120-12-7	Anthracene	ND		188	146	78	149	79	2	10-176/57
56-55-3	Benzo(a)anthracene	ND		188	150	80	152	81	1	10-174/73
50-32-8	Benzo(a)pyrene	ND		188	121	64	124	66	2	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		188	133	71	123	66	8	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		188	219	117	247	132	12	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		188	171	91	181	96	6	10-170/94
218-01-9	Chrysene	ND		188	156	83	170	91	9	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		188	167	89	183	97	9	10-192/74
206-44-0	Fluoranthene	ND		188	208	111	184	98	12	10-141/73
86-73-7	Fluorene	ND		188	218	116	173	92	23	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		188	175	93	188	100	7	10-150/73
90-12-0	1-Methylnaphthalene	ND		188	146	78	164	87	12	10-154/82
91-57-6	2-Methylnaphthalene	ND		188	74.6	40	26.9	14	94*	10-171/75
91-20-3	Naphthalene	ND		188	74.8	40	77.9	42	4	10-138/82
85-01-8	Phenanthrene	ND		188	160	85	166	88	4	10-191/77
129-00-0	Pyrene	ND		188	339	181*	394	210*	15	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T49285-2	Limits
4165-60-0	Nitrobenzene-d5	57%	54%	28%	10-127%
321-60-8	2-Fluorobiphenyl	51%	28%	32%	11-133%
1718-51-0	Terphenyl-d14	121%	137%	58%	15-187%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2678-MB	EE052857.D	1	03/17/10	FI	n/a	n/a	GEE2678

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

T49285-1

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

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	102%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	44-120%

Method Blank Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2682-MB	EE052932.D	1	03/18/10	FI	n/a	n/a	GEE2682

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

T49285-2

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

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	104%	46-127%
98-08-8	aaa-Trifluorotoluene	106%	44-120%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2678-BS	EE052853.D	1	03/17/10	FI	n/a	n/a	GEE2678

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

T49285-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.391	98	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	105%	46-127%
98-08-8	aaa-Trifluorotoluene	116%	44-120%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2682-BS	EE052928.D	1	03/18/10	FI	n/a	n/a	GEE2682

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

T49285-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.345	86	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	100%	46-127%
98-08-8	aaa-Trifluorotoluene	103%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49359-1MS	EE052865.D	1	03/17/10	FI	n/a	n/a	GEE2678
T49359-1MSD	EE052866.D	1	03/17/10	FI	n/a	n/a	GEE2678
T49359-1	EE052862.D	1	03/17/10	FI	n/a	n/a	GEE2678

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

T49285-1

CAS No.	Compound	T49359-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		27.4	25.7	94	24.8	90	4	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T49359-1	Limits
460-00-4	4-Bromofluorobenzene	104%	103%	103%	46-127%
98-08-8	aaa-Trifluorotoluene	115%	113%	111%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49285-2MS	EE052939.D	1	03/19/10	FI	n/a	n/a	GEE2682
T49285-2MSD	EE052940.D	1	03/19/10	FI	n/a	n/a	GEE2682
T49285-2	EE052933.D	1	03/18/10	FI	n/a	n/a	GEE2682

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

T49285-2

CAS No.	Compound	T49285-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		24.7	22.1	89	21.9	89	1	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T49285-2	Limits
460-00-4	4-Bromofluorobenzene	103%	102%	100%	46-127%
98-08-8	aaa-Trifluorotoluene	112%	112%	109%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14347-MB	IF195846.D	1	03/19/10	EM	03/19/10	OP14347	GIB971

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

T49285-1, T49285-2

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	67%	33-115%

Blank Spike Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14347-BS	IF195847.D	1	03/19/10	EM	03/19/10	OP14347	GIF971

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

T49285-1, T49285-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33	27.3	83	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	73%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49285
Account: ENCACOP ENCANA
Project: Hells Hole 9122

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14347-MS	IF195848.D	1	03/19/10	EM	03/19/10	OP14347	GIB971
OP14347-MSD	IF195849.D	1	03/19/10	EM	03/19/10	OP14347	GIF971
T49370-1	IF195850.D	1	03/19/10	EM	03/19/10	OP14347	GIB971

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

T49285-1, T49285-2

CAS No.	Compound	T49370-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	ND		42.4	35.8	85	36.0	85	1	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T49370-1	Limits
84-15-1	o-Terphenyl	83%	75%	46%	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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11408
Matrix Type: AQUEOUS

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

Prep Date: 03/26/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	-9.9	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	23.2	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	136	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP11408: T49285-1A, T49285-2A

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11408
Matrix Type: AQUEOUS

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

Prep Date: 03/26/10

Metal	T49366-1B Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	68800	68300	0.7	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	15300	0.7	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	994000	991000	0.3	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP11408: T49285-1A, T49285-2A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11408
Matrix Type: AQUEOUS

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

Prep Date: 03/26/10

Metal	T49366-1B Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	68800	64800	5.8	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	15400	15400	0.4	0-10
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	994000	1000000	0.7	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP11408: T49285-1A, T49285-2A

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11429
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 03/29/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0029	<0.017

Associated samples MP11429: T49285-1, T49285-2

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11429
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 03/29/10 03/29/10

Metal	T49539-1 Original	DUP	RPD	QC Limits	T49539-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.070	0.099	34.3*(a)	0-20	0.070	0.40	0.301	109.6	75-125

Associated samples MP11429: T49285-1, T49285-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11429
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 03/29/10

Metal	T49539-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.070	0.39	0.281	113.7	2.5	

Associated samples MP11429: T49285-1, T49285-2

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11429
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 03/29/10

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	8.4	7.34	114.4	72-128

Associated samples MP11429: T49285-1, T49285-2

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11435
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/30/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.012	<0.50
Barium	10	.007	.03	-0.0015	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0010	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.071	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	0.022	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.043	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.061	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.088	<0.50
Silver	0.50	.043	.04	0.0055	<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	-0.012	<1.0

Associated samples MP11435: T49285-1, T49285-2

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11435
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			03/30/10					03/30/10	
Metal	T49285-1 Original	DUP	RPD	QC Limits	T49285-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	13.8	16.4	17.2	0-20	13.8	39.3	30.3	84.3	80-120
Barium	577	526	9.2	0-20	577	573	30.3	-13.2(a)	80-120
Beryllium	anr								
Boron									
Cadmium	0.34	0.32	6.1	0-20	0.34	26.2	30.3	85.5	80-120
Calcium									
Chromium	13.0	11.3	14.0	0-20	13.0	38.3	30.3	83.6	80-120
Cobalt									
Copper	17.9	15.4	15.0	0-20	17.9	46.5	30.3	94.5	80-120
Iron									
Lead	7.1	7.1	0.0	0-20	7.1	33.1	30.3	85.9	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	10.5	9.9	5.9	0-20	10.5	35.4	30.3	82.3	80-120
Potassium									
Selenium	1.7	1.7	0.0	0-20	1.7	28.8	30.3	89.6	80-120
Silver	0.0	0.0	NC	0-20	0.0	31.1	30.3	102.8	80-120
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	31.8	29.3	8.2	0-20	31.8	59.8	30.3	92.6	80-120

Associated samples MP11435: T49285-1, T49285-2

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11435
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/30/10

Metal	T49285-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	13.8	41.8	30.6	91.5	6.2	20
Barium	577	591	30.6	45.8 (a)	3.1	20
Beryllium	anr					
Boron						
Cadmium	0.34	26.9	30.6	86.8	2.6	20
Calcium						
Chromium	13.0	38.7	30.6	84.0	1.0	20
Cobalt						
Copper	17.9	48.5	30.6	100.0	4.2	20
Iron						
Lead	7.1	34.4	30.6	89.2	3.9	20
Magnesium						
Manganese						
Molybdenum						
Nickel	10.5	36.2	30.6	84.0	2.2	20
Potassium						
Selenium	1.7	29.5	30.6	90.9	2.4	20
Silver	0.0	32.1	30.6	104.9	3.2	20
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	31.8	63.2	30.6	102.6	5.5	20

Associated samples MP11435: T49285-1, T49285-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11435
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/30/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	146	158	92.4	82-118
Barium	346	348	99.4	81-119
Beryllium	anr			
Boron				
Cadmium	177	187	94.7	82-118
Calcium				
Chromium	88.6	89.5	99.0	79-121
Cobalt				
Copper	129	129	100.0	84-117
Iron				
Lead	157	172	91.3	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	94.1	99	95.1	81-119
Potassium				
Selenium	133	148	89.9	78-121
Silver	65.0	66	98.5	66-134
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	364	394	92.4	80-119

Associated samples MP11435: T49285-1, T49285-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

QC Batch ID: MP11435
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/30/10

Metal	T49285-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	181	199	9.9	0-10
Barium	7590	8140	7.2	0-10
Beryllium	anr			
Boron				
Cadmium	4.53	2.45	45.9 (a)	0-10
Calcium				
Chromium	171	190	11.0*(b)	0-10
Cobalt				
Copper	235	229	2.5	0-10
Iron				
Lead	93.9	109	15.8*(b)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	138	153	10.8*(b)	0-10
Potassium				
Selenium	23.0	25.5	10.8 (a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	419	1090	160.9*(b	0-10

Associated samples MP11435: T49285-1, T49285-2

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.

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: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN21490	2.0	<2.0	mg/kg	40	41.5	103.0	80-120%
Specific Conductivity	GN21730	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN21490: T49285-1, T49285-2
Batch GN21730: T49285-1, T49285-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN21490	T49127-1	mg/kg	<2.0	<2.0	2.5	0-20%
Solids, Percent	GN21519	T49374-4	%	84.4	84.6	0.2	0-5%
Specific Conductivity	GN21730	T49285-1	umhos/cm	168	168	0.0	0-20%
pH	GN21534	T49285-1	su	8.21	8.26	0.6	0-20%

Associated Samples:
Batch GN21490: T49285-1, T49285-2
Batch GN21519: T49285-1, T49285-2
Batch GN21534: T49285-1, T49285-2
Batch GN21730: T49285-1, T49285-2
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T49285
Account: ENCACOP - ENCANA
Project: Hells Hole 9122

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN21490	T49127-1	mg/kg	<2.0	40	39.7	96.2	75-125%

Associated Samples:
Batch GN21490: T49285-1, T49285-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits