



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Chris Hines
EnCana Oil & Gas - Parachute, CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Monday April 20, 2015

Report Number: L758834

Samples Received: 04/11/15

Client Project: CLYDE HALL 1

Description: Clyde Hall 1 Pit

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

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FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas - Parachute, CO
143 Diamond Avenue
Parachute, CO 81635

April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (BOT) 8FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:00

ESC Sample # : L758834-01
Site ID : CLYDE HALL 1
Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	04/17/15	1
Chromium, Trivalent	5.8	2.0	mg/kg	Calc.	04/20/15	1
ORP	160		mV	2580 B-2011	04/15/15	1
pH	7.9	0.10	su	9045D	04/15/15	1
Sodium Adsorption Ratio	1.5			Calc.	04/15/15	1
Specific Conductance	230		umhos/cm	9050AMod	04/17/15	1
Mercury	0.43	0.020	mg/kg	7471A	04/14/15	1
Arsenic	3.8	2.0	mg/kg	6010B	04/16/15	1
Barium	240	0.50	mg/kg	6010B	04/16/15	1
Cadmium	BDL	0.50	mg/kg	6010B	04/16/15	1
Chromium	5.8	1.0	mg/kg	6010B	04/16/15	1
Copper	9.9	2.0	mg/kg	6010B	04/16/15	1
Lead	8.7	0.50	mg/kg	6010B	04/16/15	1
Nickel	16.	2.0	mg/kg	6010B	04/16/15	1
Selenium	BDL	2.0	mg/kg	6010B	04/16/15	1
Silver	BDL	1.0	mg/kg	6010B	04/16/15	1
Zinc	30.	5.0	mg/kg	6010B	04/16/15	1
Benzene	BDL	0.0025	mg/kg	8021	04/14/15	5
Toluene	BDL	0.025	mg/kg	8021	04/14/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/14/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/14/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/14/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	105.		% Rec.	8015	04/14/15	1
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021	04/14/15	1
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	69.9		% Rec.	8015D/DRO	04/15/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L758834-01 (PH) - 7.9 at 20.5 c



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April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (BOT) 8FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:00

ESC Sample # : L758834-01

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
Surrogate Recovery						
p-Terphenyl-d14	63.0		% Rec.	8270C-SIM	04/16/15	1
Nitrobenzene-d5	66.6		% Rec.	8270C-SIM	04/16/15	1
2-Fluorobiphenyl	68.3		% Rec.	8270C-SIM	04/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L758834-01 (PH) - 7.9 at 20.5 c



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143 Diamond Avenue
Parachute, CO 81635

April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (N WALL) 5FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:05

ESC Sample # : L758834-02

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	04/14/15	5
Toluene	BDL	0.025	mg/kg	8021	04/14/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/14/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/14/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/14/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8015	04/14/15	1
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021	04/14/15	1
TPH (GC/FID) High Fraction	7.3	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	70.5		% Rec.	8015D/DRO	04/15/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Parachute, CO 81635

April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (E WALL) 5FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:10

ESC Sample # : L758834-03

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Toluene	BDL	0.025	mg/kg	8021	04/15/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8015	04/15/15	1
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021	04/15/15	1
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	67.6		% Rec.	8015D/DRO	04/15/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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143 Diamond Avenue
Parachute, CO 81635

April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (S WALL) 5FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:15

ESC Sample # : L758834-04

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Toluene	BDL	0.025	mg/kg	8021	04/15/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8015	04/15/15	1
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021	04/15/15	1
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	70.8		% Rec.	8015D/DRO	04/15/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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143 Diamond Avenue
Parachute, CO 81635

April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (W WALL) 5FT
Collected By : Matt Kasten
Collection Date : 04/10/15 10:20

ESC Sample # : L758834-05

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Toluene	BDL	0.025	mg/kg	8021	04/15/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	105.		% Rec.	8015	04/15/15	1
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021	04/15/15	1
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	67.1		% Rec.	8015D/DRO	04/15/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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April 20, 2015

Date Received : April 11, 2015
Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (STOCKPILE)
Collected By : Matt Kasten
Collection Date : 04/10/15 10:25

ESC Sample # : L758834-06
Site ID : CLYDE HALL 1
Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	04/17/15	1
Chromium, Trivalent	4.8	2.0	mg/kg	Calc.	04/20/15	1
ORP	160		mV	2580 B-2011	04/15/15	1
pH	8.0	0.10	su	9045D	04/15/15	1
Sodium Adsorption Ratio	1.9			Calc.	04/15/15	1
Specific Conductance	370		umhos/cm	9050AMod	04/17/15	1
Mercury	1.0	0.040	mg/kg	7471A	04/14/15	2
Arsenic	4.4	2.0	mg/kg	6010B	04/16/15	1
Barium	260	0.50	mg/kg	6010B	04/16/15	1
Cadmium	BDL	0.50	mg/kg	6010B	04/16/15	1
Chromium	4.8	1.0	mg/kg	6010B	04/16/15	1
Copper	9.0	2.0	mg/kg	6010B	04/16/15	1
Lead	5.1	0.50	mg/kg	6010B	04/16/15	1
Nickel	12.	2.0	mg/kg	6010B	04/16/15	1
Selenium	BDL	2.0	mg/kg	6010B	04/16/15	1
Silver	BDL	1.0	mg/kg	6010B	04/16/15	1
Zinc	26.	5.0	mg/kg	6010B	04/16/15	1
Benzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Toluene	BDL	0.025	mg/kg	8021	04/15/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	04/15/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	04/15/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	04/15/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8015	04/15/15	1
a,a,a-Trifluorotoluene(PID)	98.7		% Rec.	8021	04/15/15	1
TPH (GC/FID) High Fraction	6.3	4.0	mg/kg	8015D/DRO	04/15/15	1
Surrogate recovery(%)						
o-Terphenyl	72.2		% Rec.	8015D/DRO	04/15/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L758834-06 (PH) - 8.0 at 20.5 c



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April 20, 2015

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Description : Clyde Hall 1 Pit
Sample ID : 20150410-CLYDE HALL1 PIT (STOCKPILE)
Collected By : Matt Kasten
Collection Date : 04/10/15 10:25

ESC Sample # : L758834-06

Site ID : CLYDE HALL 1

Project # : CLYDE HALL 1

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	04/16/15	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	04/16/15	1
Surrogate Recovery						
p-Terphenyl-d14	69.6		% Rec.	8270C-SIM	04/16/15	1
Nitrobenzene-d5	73.0		% Rec.	8270C-SIM	04/16/15	1
2-Fluorobiphenyl	72.0		% Rec.	8270C-SIM	04/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L758834-06 (PH) - 8.0 at 20.5 c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L758834-06	WG781743	SAMP	Mercury	R3030656	J6

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.