



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

Tax I.D. 62-0814289

Est. 1970

Brett Middleton
EnCana Oil & Gas - Parachute, CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Monday August 17, 2015

Report Number: L781374

Samples Received: 08/07/15

Client Project: BEVAN 1-29

Description: Bevan 1-29 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:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-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,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Brett Middleton
EnCana Oil & Gas - Parachute, CO
143 Diamond Avenue
Parachute, CO 81635

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (NWALL)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:35

ESC Sample # : L781374-01

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.4		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	BDL	4.00	mg/kg	8015D/DRO	08/13/15	1
Surrogate recovery(%)						
o-Terphenyl	56.6		% Rec.	8015D/DRO	08/13/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (EWALL)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:45

ESC Sample # : L781374-02

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.7		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	BDL	4.00	mg/kg	8015D/DRO	08/13/15	1
Surrogate recovery(%)						
o-Terphenyl	64.1		% Rec.	8015D/DRO	08/13/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (SWALL)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:54

ESC Sample # : L781374-03

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.7		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	BDL	4.00	mg/kg	8015D/DRO	08/13/15	1
Surrogate recovery(%)						
o-Terphenyl	67.9		% Rec.	8015D/DRO	08/13/15	1

BDL - Below Detection Limit

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

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (WWALL)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:50

ESC Sample # : L781374-04

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.6		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	5.94	4.00	mg/kg	8015D/DRO	08/14/15	1
Surrogate recovery(%)						
o-Terphenyl	41.1		% Rec.	8015D/DRO	08/14/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (BOT)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:55

ESC Sample # : L781374-05

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/10/15	1
Chromium,Trivalent	5.46	2.00	mg/kg	Calc.	08/16/15	1
ORP	120		mV	2580 B-2011	08/10/15	1
pH	7.96	0.100	su	9045D	08/13/15	1
Sodium Adsorption Ratio	0.413			Calc.	08/14/15	1
Specific Conductance	230		umhos/cm	9050AMod	08/11/15	1
Mercury	BDL	0.0200	mg/kg	7471A	08/13/15	1
Arsenic	3.7	2.0	mg/kg	6010B	08/08/15	1
Barium	150	0.50	mg/kg	6010B	08/08/15	1
Cadmium	BDL	0.50	mg/kg	6010B	08/08/15	1
Chromium	5.4	1.0	mg/kg	6010B	08/08/15	1
Copper	8.0	2.0	mg/kg	6010B	08/08/15	1
Lead	11.	0.50	mg/kg	6010B	08/08/15	1
Nickel	9.7	2.0	mg/kg	6010B	08/08/15	1
Selenium	BDL	2.0	mg/kg	6010B	08/08/15	1
Silver	BDL	1.0	mg/kg	6010B	08/08/15	1
Zinc	23.	5.0	mg/kg	6010B	08/08/15	1
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.4		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	BDL	4.00	mg/kg	8015D/DRO	08/13/15	1
Surrogate recovery(%)						
o-Terphenyl	50.2		% Rec.	8015D/DRO	08/13/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Acenaphthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Acenaphthylene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(a)anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(a)pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L781374-05 (PH) - 7.96 AT 20.5C



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August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (BOT)
Collected By : Matt Kasten
Collection Date : 08/04/15 14:55

ESC Sample # : L781374-05

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(g,h,i)perylene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(k)fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Chrysene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Dibenz(a,h)anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Fluorene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Naphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
Phenanthrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
1-Methylnaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
2-Methylnaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
2-Chloronaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
Surrogate Recovery						
p-Terphenyl-d14	79.3		% Rec.	8270C-SIM	08/13/15	1
Nitrobenzene-d5	77.1		% Rec.	8270C-SIM	08/13/15	1
2-Fluorobiphenyl	89.5		% Rec.	8270C-SIM	08/13/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L781374-05 (PH) - 7.96 AT 20.5C



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143 Diamond Avenue
Parachute, CO 81635

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit

Sample ID : 20150804-BEVAN 1-29 PT (STOCKPILE)

Collected By : Matt Kasten
Collection Date : 08/04/15 15:05

ESC Sample # : L781374-06

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.00	mg/kg	3060A/7196A	08/15/15	1
Chromium, Trivalent	7.48	2.00	mg/kg	Calc.	08/16/15	1
ORP	110		mV	2580 B-2011	08/10/15	1
pH	7.92	0.100	su	9045D	08/13/15	1
Sodium Adsorption Ratio	0.439			Calc.	08/14/15	1
Specific Conductance	260		umhos/cm	9050AMod	08/11/15	1
Mercury	BDL	0.0200	mg/kg	7471A	08/13/15	1
Arsenic	3.0	2.0	mg/kg	6010B	08/08/15	1
Barium	250	0.50	mg/kg	6010B	08/08/15	1
Cadmium	BDL	0.50	mg/kg	6010B	08/08/15	1
Chromium	7.5	1.0	mg/kg	6010B	08/08/15	1
Copper	10.	2.0	mg/kg	6010B	08/08/15	1
Lead	17.	0.50	mg/kg	6010B	08/08/15	1
Nickel	12.	2.0	mg/kg	6010B	08/08/15	1
Selenium	BDL	2.0	mg/kg	6010B	08/08/15	1
Silver	BDL	1.0	mg/kg	6010B	08/08/15	1
Zinc	31.	5.0	mg/kg	6010B	08/08/15	1
Benzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Toluene	BDL	0.025	mg/kg	8021	08/11/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/11/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/11/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/11/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.2		% Rec.	8015	08/11/15	1
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/11/15	1
TPH (GC/FID) High Fraction	BDL	4.00	mg/kg	8015D/DRO	08/13/15	1
Surrogate recovery(%)						
o-Terphenyl	62.2		% Rec.	8015D/DRO	08/13/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Acenaphthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Acenaphthylene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(a)anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(a)pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L781374-06 (PH) - 7.92 AT 20.0C



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143 Diamond Avenue
Parachute, CO 81635

August 17, 2015

Date Received : August 07, 2015
Description : Bevan 1-29 Pit
Sample ID : 20150804-BEVAN 1-29 PT (STOCKPILE)
Collected By : Matt Kasten
Collection Date : 08/04/15 15:05

ESC Sample # : L781374-06

Site ID : BEVAN 1-29

Project # : BEVAN 1-29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(g,h,i)perylene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Benzo(k)fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Chrysene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Dibenz(a,h)anthracene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Fluoranthene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Fluorene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Naphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
Phenanthrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
Pyrene	BDL	0.00600	mg/kg	8270C-SIM	08/13/15	1
1-Methylnaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
2-Methylnaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
2-Chloronaphthalene	BDL	0.0200	mg/kg	8270C-SIM	08/13/15	1
Surrogate Recovery						
p-Terphenyl-d14	69.0		% Rec.	8270C-SIM	08/13/15	1
Nitrobenzene-d5	79.8		% Rec.	8270C-SIM	08/13/15	1
2-Fluorobiphenyl	86.3		% Rec.	8270C-SIM	08/13/15	1

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L781374-06 (PH) - 7.92 AT 20.0C

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L781374-04	WG808665	SAMP	o-Terphenyl	R3061671	J2

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits

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.