



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
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Tax I.D. 62-0814289

Est. 1970

Forrest Thorniley  
EnCana Oil & Gas - Longmont, CO  
3601 Stagecoach Rd  
Longmont, CO 80504

## Report Summary

Thursday February 26, 2015

Report Number: L749533


Samples Received: 02/19/15

Client Project:

Description: Jillson Mud Spill Post Cleanup Verification

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

February 26, 2015

Forrest Thorniley  
 EnCana Oil & Gas - Longmont, CO  
 3601 Stagecoach Rd  
 Longmont, CO 80504

Date Received : February 19, 2015  
 Description : Jillson Mud Spill Post Cleanup Verification  
 Sample ID : GLASS SOIL JARS  
 Collected By : Forrest Thorniley  
 Collection Date : 02/18/15 11:00

ESC Sample # : L749533-01  
 Site ID : JILLSON 22H  
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	02/23/15	1
Chromium,Trivalent	17.	2.0	mg/kg	Calc.	02/25/15	1
ORP	100		mV	2580 B-2011	02/21/15	1
pH	8.5	0.10	su	9045D	02/20/15	1
Sodium Adsorption Ratio	2.1			Calc.	02/25/15	1
Specific Conductance	200		umhos/cm	9050AMod	02/21/15	1
Mercury	BDL	0.020	mg/kg	7471A	02/25/15	1
Arsenic	90.	2.0	mg/kg	6010B	02/24/15	1
Barium	100	0.50	mg/kg	6010B	02/24/15	1
Cadmium	BDL	0.50	mg/kg	6010B	02/24/15	1
Chromium	17.	1.0	mg/kg	6010B	02/24/15	1
Copper	29.	2.0	mg/kg	6010B	02/24/15	1
Lead	34.	0.50	mg/kg	6010B	02/24/15	1
Nickel	53.	2.0	mg/kg	6010B	02/25/15	1
Selenium	26.	2.0	mg/kg	6010B	02/25/15	1
Silver	BDL	1.0	mg/kg	6010B	02/24/15	1
Zinc	68.	5.0	mg/kg	6010B	02/24/15	1
Benzene	BDL	0.0025	mg/kg	8021	02/25/15	5
Toluene	BDL	0.025	mg/kg	8021	02/25/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/25/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/25/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/25/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.7		% Rec.	8015	02/25/15	1
a,a,a-Trifluorotoluene(PID)	97.9		% Rec.	8021	02/25/15	1
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	02/21/15	1
Surrogate recovery(%)						
o-Terphenyl	83.0		% Rec.	3546/DRO	02/21/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1

BDL - Below Detection Limit  
 Det. Limit - Practical Quantitation Limit(PQL)  
 L749533-01 (PH) - 8.5@23.3c



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 Site ID : JILLSON 22H  
 Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	02/20/15	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/20/15	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	02/20/15	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	02/20/15	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	02/20/15	1
Surrogate Recovery						
Nitrobenzene-d5	93.0		% Rec.	8270C-SIM	02/20/15	1
2-Fluorobiphenyl	74.5		% Rec.	8270C-SIM	02/20/15	1
p-Terphenyl-d14	70.2		% Rec.	8270C-SIM	02/20/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 02/26/15 11:33 Printed: 02/26/15 13:15  
 L749533-01 (PH) - 8.5@23.3c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L749533-01	WG771952	SAMP	Arsenic	R3021548	J6
	WG771952	SAMP	Barium	R3021548	J6
	WG771952	SAMP	Lead	R3021548	J6
	WG771952	SAMP	Nickel	R3021548	J6
	WG771952	SAMP	Zinc	R3021548	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.