

SITE ASSESSMENT SUMMARY REPORT

**ENCANA PRODUCTION PAD #7712
REMEDIACTION PROJECT #5274
GARFIELD COUNTY, COLORADO**

JANUARY 2014

Prepared for:

**ENCANA OIL & GAS USA INC.
Rangely, Colorado**



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REMEDATION PROJECT #5274
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Prepared for:

**ENCANA OIL & GAS USA INC.
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EXECUTIVE SUMMARY

This report was prepared by LT Environmental, Inc. (LTE), under the direction of Encana Oil & Gas (USA), Inc., to document soil assessment activities at the Encana Production Pad #7712 (Site). The Site is located approximately 28 miles north of Loma, Colorado.

The scope of work for this project included assessing residual petroleum hydrocarbon impacts following the identification of a release associated with an earthen pit. The source of the release was identified when the pit was over-excavated. Additionally, the soil immediately surrounding the pit was excavated and removed from May 31 through June 4, 2012 by HCSI, Environmental Consultants. Activities included advancing soil borings on site and collecting soil samples to submit for laboratory analysis, health and safety monitoring, drilling contractor oversight, and preparation of this summary report.

From August 7 to 17, 2013, Precision Sampling, Inc. of Colorado Springs, Colorado, was contracted to advance nine soil borings on site to depths ranging from 32 to 72 feet below ground surface. The soil borings were advanced with a hollow-stem auger. Three soil borings were converted into passive soil vapor extraction wells. The soil borings were conducted within the production pad disturbance; therefore no borings were outside the pad disturbance on Bureau of Land Management land.

Based on analytical results from soil boring samples collected during assessment activities, residual concentration of hydrocarbons exceed the compliance standards of the COGCC Table 910-1 remain in the subsurface of the Site.

No groundwater was encountered during the assessment activities. All soil borings were backfilled with soil to match existing grade.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE), under the direction of Encana Oil & Gas (USA), Inc. (Encana), was contracted to document soil assessment activities at the Encana Production Pad #7712 (Site) as depicted on Figure 1. The purpose of this project was to assess any residual hydrocarbon-impacted soil remaining at the Site. A release of petroleum hydrocarbons was identified when an earthen pit was over-excavated at the Site.

From May 31 to June 4, 2012, Encana over-excavated the pit along with any observed hydrocarbon-impacted soil associated with the Site as depicted on Figure 2. Excavation of soil was conducted by HCSI, Environmental Consultants. A summary of these activities is attached in Appendix A. At the time of excavation activities, Encana attempted to remove all associated hydrocarbon impacted soil, however the excavation extents were limited due to technical considerations, health and safety concerns, and property boundaries. Residual total petroleum hydrocarbon (TPH) concentrations ranging from 5,500 milligrams per kilogram (mg/kg) to 9,000 mg/kg and benzene concentrations ranging from 0.95 mg/kg to 17 mg/kg remained in soil in the extents of the excavation and indicated in Table 1. These concentrations exceeded the Colorado Oil and Gas Conservation Commission (COGCC) standard of 500 mg/kg and 0.17 mg/kg respectively, thus determining the need to assess the remaining soil conditions at the Site. Encana also collected background soil samples at the time of excavation activities, which are indicated in Table 2.

From August 7 to 17, 2013, LTE advanced nine soil borings at the Site to assess residual TPH and benzene concentrations in soil identified during the pit over-excavation. Laboratory analytical results indicated residual TPH concentrations ranging from 630 mg/kg to 1,830 mg/kg and a benzene concentration of 0.24 mg/kg exceeding the COGCC standard. Three soil borings were converted to passive soil vapor extraction (SVE) wells for the purpose of remediating residual hydrocarbons in the subsurface of the Site.

1.1 SITE DESCRIPTION

The Site is located approximately 28 miles north of Loma, Colorado. The legal description of the Site is the southwest quarter of the southeast quarter of Section 20, Township 5 South, Range 102 West of the Sixth Principal Meridian in Garfield County, Colorado (Figure 1). The Site is surrounded by Bureau of Land Management (BLM) property.

The general site geology was observed as a brown silty sand and gravel with clay lenses down to a dense sandstone.

The Site is located at an elevation of 7,249 feet above mean sea level in an area with localized high plateau topography associated with the western edge of the Rocky Mountains near the Colorado Plateau.

1.2 SCOPE OF WORK

The scope of work for this assessment project included advancing soil borings at the Site and collecting soil samples below the previous excavation.

During on-site assessment activities, LTE personnel conducted field screening of soil samples, soil sampling, borehole logging, health and safety monitoring, and documentation of field activities.

A summary of field activities, analytical results from soil sampling, and conclusions are presented in the subsequent sections.

2.0 SUMMARY OF FIELD ACTIVITIES

2.1 ASSESSMENT ACTIVITIES

From August 7 to 17, 2013, LTE advanced nine soil borings to depths ranging from 32 to 72 feet bgs. LTE contracted Precision Sampling of Colorado Springs, Colorado, to install the soil borings using a CME-75 drill rig equipped with hollow-stem auger.

The soil borings were logged by an LTE environmental scientist who inspected the soil for the presence or absence of petroleum hydrocarbon odor and/or staining. The soil was characterized by visually inspecting the soil samples collected in 2-foot long split-spoon samplers and field screening the soil headspace using a photo-ionization detector (PID) to monitor for the presence of volatile organic vapors. The soil boring logs are included in Appendix B.

Soil samples were collected from each soil boring and submitted with a completed chain-of-custody form to ESC Lab Sciences of Mt. Juliet, Tennessee (ESC), for analysis of TPH-diesel range organics (DRO), TPH-gas range organics (GRO), benzene, toluene, ethylbenzene, and total xylenes (BTEX). Samples collected and submitted for laboratory analysis were only analyzed for TPH-DRO, TPH-GRO and BTEX due to it previously exceeding the COGCC Concentration Levels at the time the earthen pit was over-excavated. All other analytes were either below COGCC Concentration Levels or were within background concentration allowances. Excavated soil was used to backfill the excavation under the assumption that additional assessment activities would be warranted.

2.2 ASSESSMENT FINDINGS

Soil conditions at the Site were identified as a brown sandy gravel underlain by shale and sandstone to approximately 23 feet bgs at which point a dense yellow-brown sandstone was encountered. Groundwater was not encountered in any of the soil borings during drilling activities.

All soil samples were screened using a PID and placed in laboratory-prepared, wide-mouth glass sample jars for laboratory submittal. All soil samples that were field screened registered PID readings. Samples field screened with the PID ranged from 0 to 8,240 parts per million. Soil samples that were field screened were observed to have PID readings and hydrocarbon odors with staining.

3.0 ANALYTICAL RESULTS

Soil samples collected from soil borings confirmed that the hydrocarbon impacted soil exceeding COGCC regulatory standards remains in the subsurface soil at the Site. Soil sample laboratory analytical results are illustrated on Figure 3 and summarized in Table 3.

Laboratory analytical results from August 2013 indicate TPH concentrations ranging from 630 mg/kg to 1,830 mg/kg and a benzene concentration of 0.24 mg/kg, which exceed COGCC standard concentrations of 500 mg/kg and 0.17 mg/kg, respectively. Copies of the laboratory analytical reports are included in Appendix C.

4.0 SUMMARY AND CONCLUSIONS

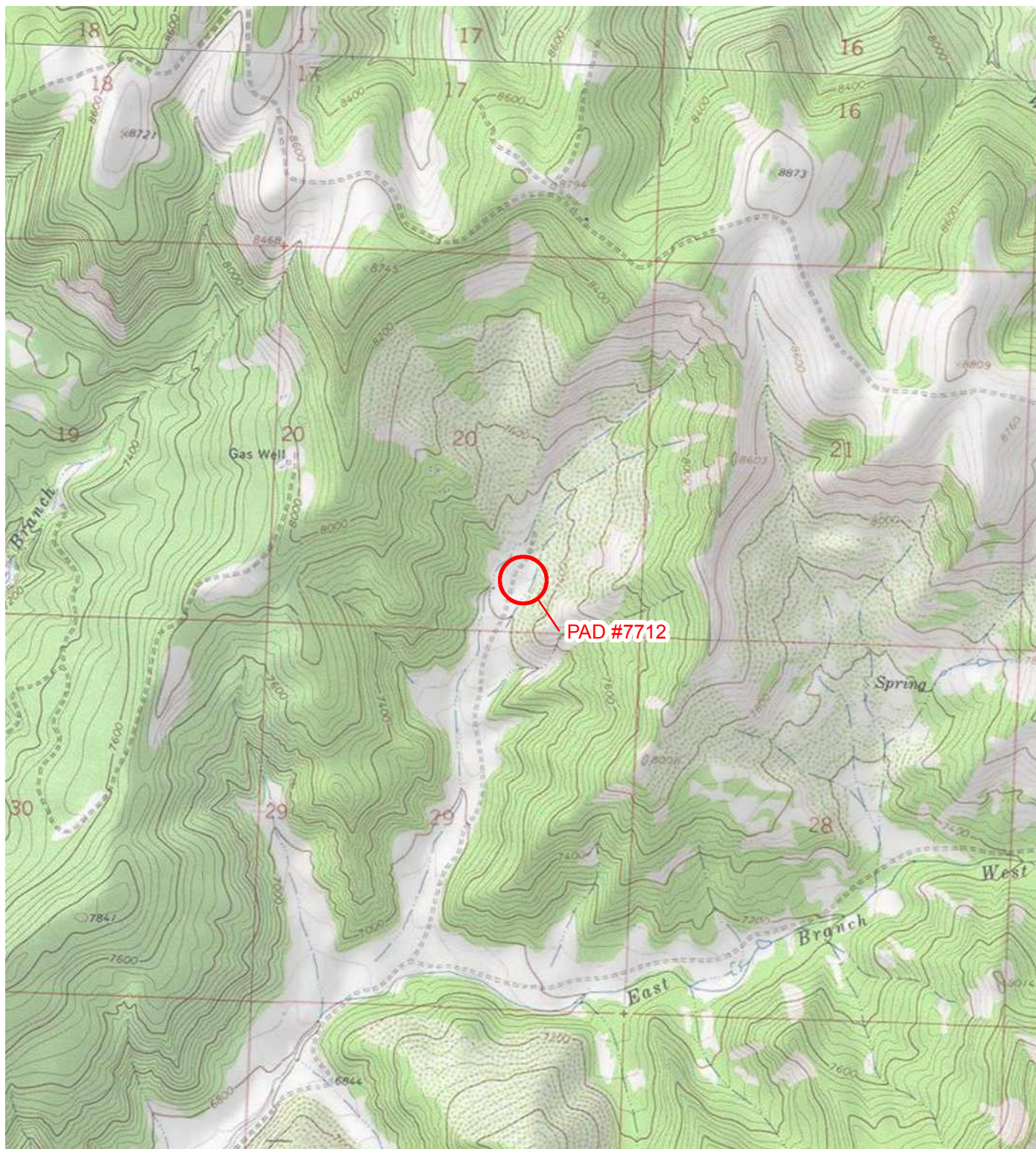
LTE was contracted by Encana to conduct soil assessment activities at the Encana Production Pad #7712 to assess any residual hydrocarbon impacted soil and/or groundwater following the identification of a release associated with an earthen pit. The pit was over-excavated in May and June of 2012.

From August 7 to 17, 2013, LTE field personnel observed the installation of nine soil borings at the Site and collected soil samples from each boring. The soil borings were advanced to depths ranging from 32 to 72 feet bgs. 14 soil samples were submitted to ESC for laboratory analysis of TPH-GRO, TPH-DRO, and BTEX. Laboratory analytical results indicate residual concentrations of TPH and benzene that exceed COGCC standards remain in the soils at the Site. Three soil borings were converted to passive SVE wells. A vent turbine was secured to the top of passive SVE wells in order to promote bioremediation of identified hydrocarbon impacts.

All soil borings were backfilled to match the existing grade of the Site. No groundwater was encountered during site assessment activities. Additional activities included on-site health and safety monitoring and preparation of this summary report.

LTE recommends Observation and Monitoring (O&M) of the passive SVE wells at the Encana Site #7712. O&M activities will consist of collecting field parameters of the headspace in the passive SVE well. All O&M data will be reported upon successful completion of the remediation project with clearance samples. Additional soil samples will be collected at a later date after enhanced bioremediation efforts have been completed.

FIGURES



LEGEND

○ SITE LOCATION

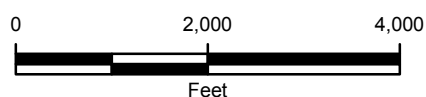


FIGURE 1
SITE LOCATION MAP
PAD #7712
SWSE SEC 20 T5S R102W
GARFIELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.



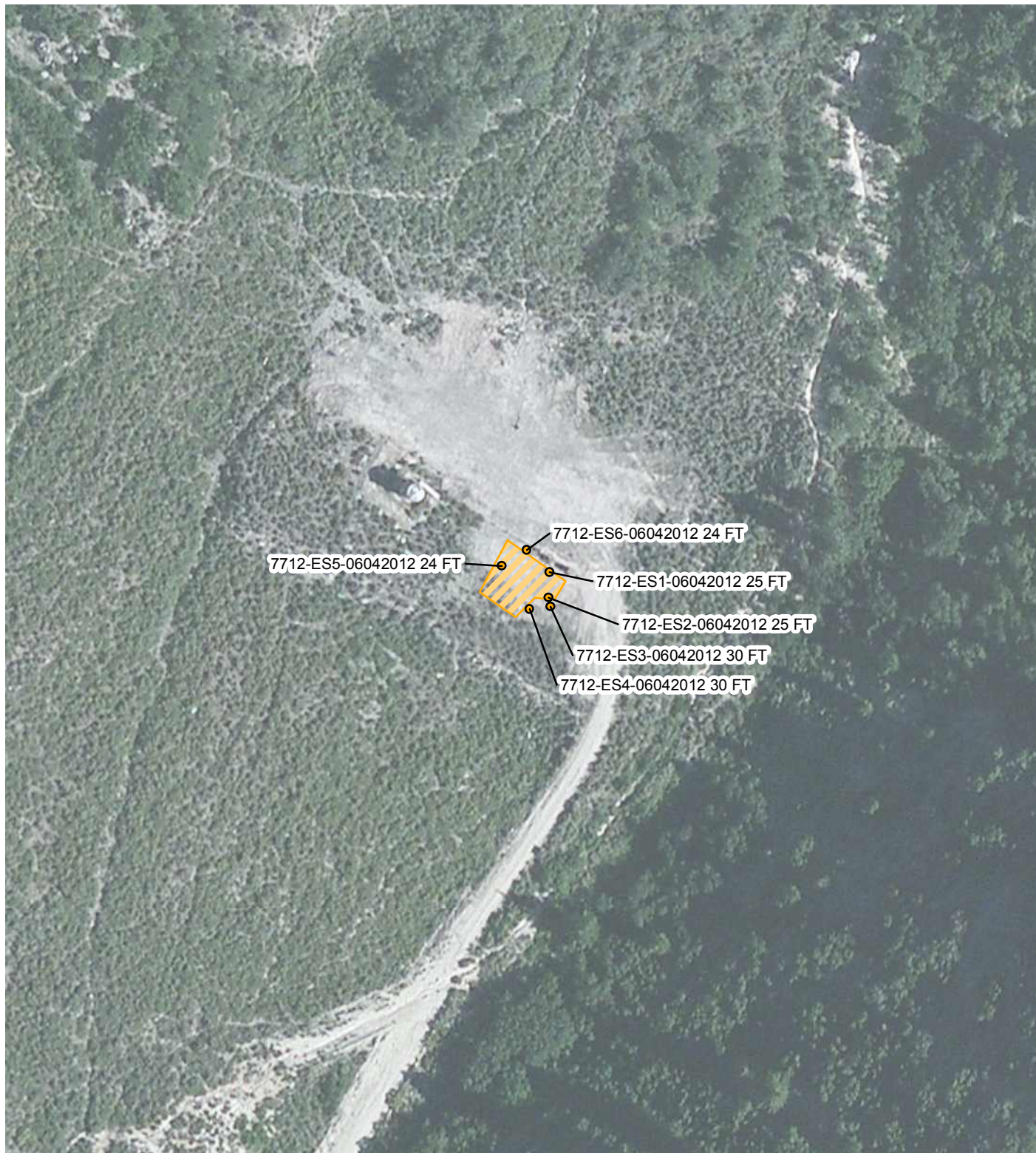


IMAGE COURTESY OF BING MAPS/ESRI

LEGEND

- SOIL SAMPLE
- EXCAVATION EXTENT (JUNE 2012)

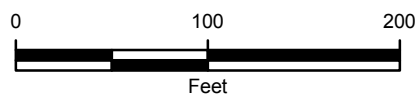


FIGURE 2
EXCAVATION MAP
PAD #7712
 SWSE SEC 20 T5S R102W
 GARFIELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.



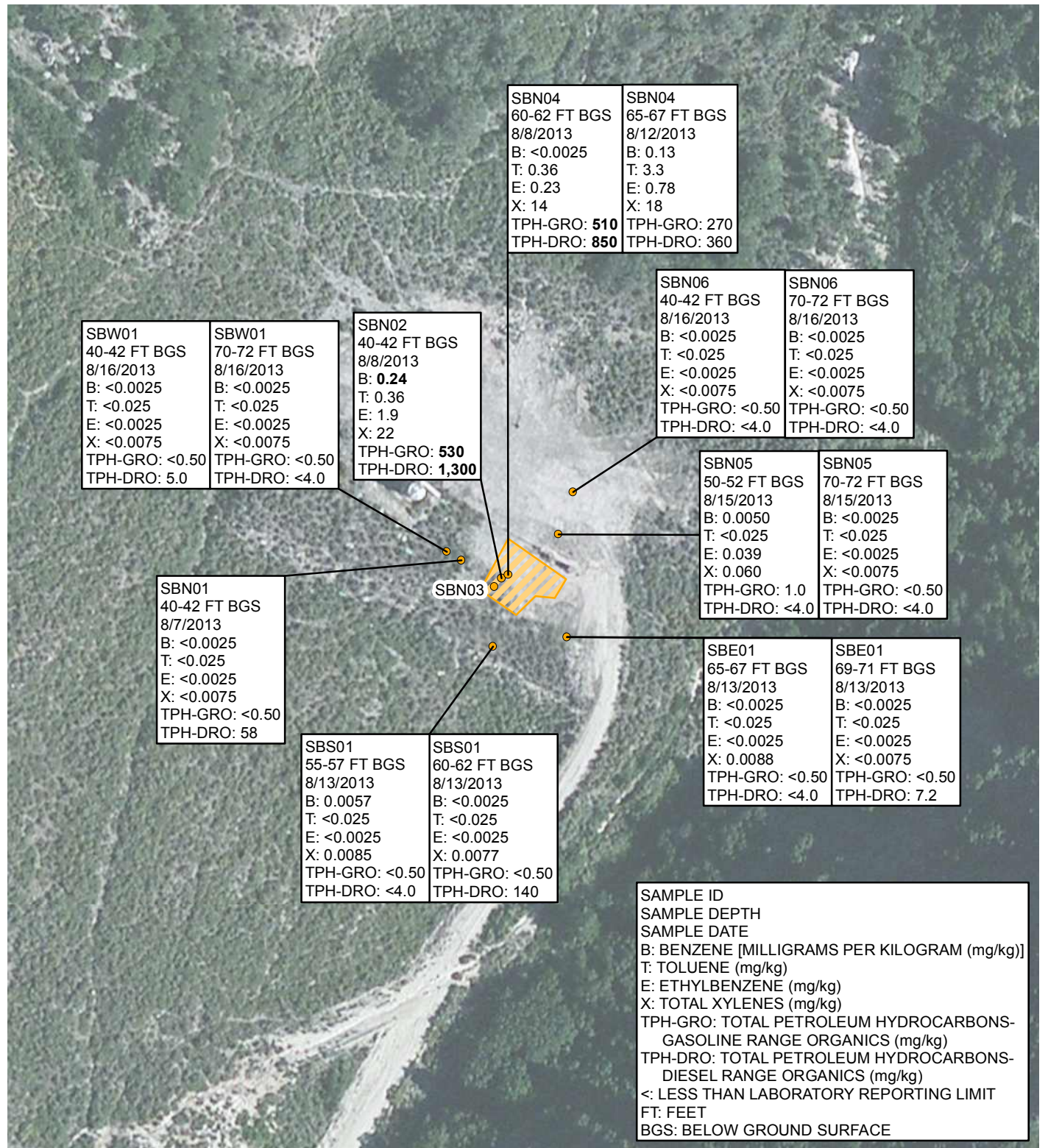


IMAGE COURTESY OF BING MAPS/ESRI

LEGEND

- SOIL BORING
- ▨ EXCAVATION EXTENT (2012)

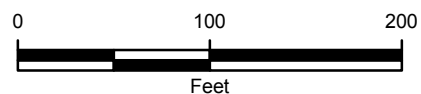


FIGURE 3
SOIL ANALYTICAL RESULTS
PAD #7712
SWSE SEC 20 T5S R102W
GARFIELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.



TABLES

TABLE 1
PIT REMOVAL AND EXCAVATION ANALYTICAL RESULTS
ENCANA PRODUCTION PAD 1331
RANGELY, COLORADO
ENCANA OIL GAS (USA) INC.

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	7712-ES1-06042012 25 FT BGS	7712-ES2-06042012 25 FT BGS	7712-ES3-06042012 20 FT BGS	7712-ES4-06042012 30 FT BGS	7712-ES5-06042012 24 FT BGS	7712-ES6-06042012 24 FT BGS
Sample Date			6/4/2012	6/4/2012	6/4/2012	6/4/2012	6/4/2012	6/4/2012
Sample Type			Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.39	mg/kg	NA	NA	NA	NA	NA	NA
Barium	15,000	mg/kg	NA	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	NA	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	NA	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	NA	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	NA	NA	NA	NA	NA	NA
Lead	400	mg/kg	NA	NA	NA	NA	NA	NA
Mercury	23	mg/kg	NA	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	NA	NA	NA	NA	NA	NA
Selenium	390	mg/kg	NA	NA	NA	NA	NA	NA
Silver	390	mg/kg	NA	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	NA	NA	NA	NA	NA	NA
EC	4.0	mmhos/cm	NA	NA	NA	NA	NA	NA
pH	6 - 9	SU	NA	NA	NA	NA	NA	NA
SAR	12	unitless	NA	NA	NA	NA	NA	NA
TPH-GRO		mg/kg	3100	BDL	6000	5000	3600	180
TPH-DRO		mg/kg	2500	4.3	3000	2800	2000	220
TPH	500	mg/kg	5600	4.3	9000	7800	5600	400
Benzene	0.17	mg/kg	BDL	BDL	17	4.9	0.95	0.052
Toluene	85	mg/kg	10	BDL	90	58	12	BDL
Ethylbenzene	100	mg/kg	7.6	BDL	20	17	9.1	0.61
Total Xylenes	175	mg/kg	140	BDL	250	220	150	2
Acenaphthene	1000	mg/kg	NA	NA	NA	NA	NA	NA
Anthracene	1000	mg/kg	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	NA	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	NA	NA	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	NA	NA	NA	NA	NA	NA
Fluorene	1000	mg/kg	NA	NA	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	NA	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	NA	NA	NA	NA	NA	NA
Pyrene	1000	mg/kg	NA	NA	NA	NA	NA	NA

NOTES:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed

SU - standard unit

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO and TPH-DRO

FT- Feet

BGS - Below ground surface



TABLE 2
BACKGROUND SAMPLE ANALITICAL RESULTS
ENCANA PRODUCTION PAD 7712
RANGELY, COLORADO
ENCANA OIL GAS (USA) INC.

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	7712-BG1-06012012 6 IN BGS	7712-BG2-06012012 6 IN BGS	7712-BG3-06012012 6 IN BGS	7712-BG4-06012012 6 IN BGS	7712-BG5-06012012 6 IN BGS
Sample Date			6/12/2012	6/12/2012	6/12/2012	6/12/2012	6/12/2012
Sample Type			Background	Background	Background	Background	Background
Arsenic	0.39	mg/kg	8.3	3.9	4	6.2	7.9
Barium	15,000	mg/kg	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	NA	NA	NA	NA	NA
Lead	400	mg/kg	NA	NA	NA	NA	NA
Mercury	23	mg/kg	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	NA	NA	NA	NA	NA
Selenium	390	mg/kg	NA	NA	NA	NA	NA
Silver	390	mg/kg	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	NA	NA	NA	NA	NA
EC	4.0	mmhos/cm	NA	NA	NA	NA	NA
pH	6 - 9	SU	NA	NA	NA	NA	NA
SAR	12	unitless	1.8	1.6	1.1	1.2	0.95
TPH-GRO		mg/kg	NA	NA	NA	NA	NA
TPH-DRO		mg/kg	NA	NA	NA	NA	NA
TPH	500	mg/kg	NA	NA	NA	NA	NA
Benzene	0.17	mg/kg	NA	NA	NA	NA	NA
Toluene	85	mg/kg	NA	NA	NA	NA	NA
Ethylbenzene	100	mg/kg	NA	NA	NA	NA	NA
Total Xylenes	175	mg/kg	NA	NA	NA	NA	NA
Acenaphthene	1000	mg/kg	NA	NA	NA	NA	NA
Anthracene	1000	mg/kg	NA	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	NA	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	NA	NA	NA	NA	NA
Fluorene	1000	mg/kg	NA	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	NA	NA	NA	NA	NA
Pyrene	1000	mg/kg	NA	NA	NA	NA	NA

NOTES:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed

SU - standard unit

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO and TPH-DRO



TABLE 3
SOIL CONFIRMATION BORINGS ANALYTICAL RESULTS
ENCANA PRODUCTION PAD 7712
RANGELY, COLORADO
ENCANA OIL GAS (USA) INC.

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	7712-SBN01-080713 40-42FT BGS	7712-SBN02-080813 40-42FT BGS	7712-SBN04-080813 60-62FT BGS	7712-SBN04-081213 65-67FT BGS	7712-SBS01-081313 55-57FT BGS	7712-SBS01-081313 60-62FT BGS	7712-SBE01-081313 65-67FT BGS
Sample Date			8/7/2013	8/8/2013	8/8/2013	8/12/2013	8/13/2013	8/13/2013	8/13/2013
Sample Type			Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.39	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	400	mg/kg	NA	NA	NA	NA	NA	NA	NA
Mercury	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	390	mg/kg	NA	NA	NA	NA	NA	NA	NA
Silver	390	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
EC	4.0	mmhos/cm	NA	NA	NA	NA	NA	NA	NA
pH	6 - 9	SU	NA	NA	NA	NA	NA	NA	NA
SAR	12	unitless	NA	NA	NA	NA	NA	NA	NA
TPH-GRO		mg/kg	<0.50	530	510	270	<0.50	<0.50	<0.50
TPH-DRO		mg/kg	58	1300	850	360	<4.0	140	<4.0
TPH	500	mg/kg	58	1830	1360	630	<4.5	140	<4.5
Benzene	0.17	mg/kg	<0.0025	0.24	<0.0025	0.13	0.0057	<0.0025	<0.0025
Toluene	85	mg/kg	<0.025	0.36	0.36	3.3	<0.025	<0.025	<0.025
Ethylbenzene	100	mg/kg	<0.0025	1.9	0.23	0.78	<0.0025	<0.0025	<0.0025
Total Xylenes	175	mg/kg	<0.0075	22	14	18	0.0085	0.0077	0.0088
Acenaphthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Anthracene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluorene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Pyrene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA

NOTES:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed

SU - standard unit

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO and TPH-DRO

FT- Feet

BGS - Below ground surface



TABLE 3
SOIL CONFIRMATION BORINGS ANALYTICAL RESULTS
ENCANA PRODUCTION PAD 7712
RANGELY, COLORADO
ENCANA OIL GAS (USA) INC.

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	7712-SBE01-081313 69-71FT BGS	7712-SBN05-081513 50-52FT BGS	7712-SBN05-081513 70-72FT BGS	7712-SBN06-081613 40-42FT BGS	7712-SBN06-081613 70-72FT BGS	7712-SBW01-081613 40-42FT BGS	7712-SBW01-081613 70-72FT BGS
Sample Date			8/13/2013	8/15/2013	8/15/2013	8/16/2013	8/16/2013	8/16/2013	8/16/2013
Sample Type			Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Confirmation
Arsenic	0.39	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	15,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	400	mg/kg	NA	NA	NA	NA	NA	NA	NA
Mercury	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	390	mg/kg	NA	NA	NA	NA	NA	NA	NA
Silver	390	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	NA	NA	NA	NA	NA	NA	NA
EC	4.0	mmhos/cm	NA	NA	NA	NA	NA	NA	NA
pH	6 - 9	SU	NA	NA	NA	NA	NA	NA	NA
SAR	12	unitless	NA	NA	NA	NA	NA	NA	NA
TPH-GRO		mg/kg	<0.50	1.0	<0.50	<0.50	<0.50	<0.50	<0.50
TPH-DRO		mg/kg	7.2	<4.0	<4.0	<4.0	<4.0	5.0	<4.0
TPH	500	mg/kg	7.2	1.0	<4.5	<4.5	<4.5	5.0	<4.5
Benzene	0.17	mg/kg	<0.0025	0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Toluene	85	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	100	mg/kg	<0.0025	0.039	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Total Xylenes	175	mg/kg	<0.0075	0.060	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Acenaphthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Anthracene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	NA	NA	NA	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Fluorene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	NA	NA	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	NA	NA	NA	NA	NA	NA	NA
Pyrene	1000	mg/kg	NA	NA	NA	NA	NA	NA	NA

NOTES:

< - less than the stated reporting limit

BOLD - indicates result exceeds the COGCC concentration level

COGCC - Colorado Oil and Gas Conservation Commission

EC- electrical conductivity

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

NA - not analyzed

SU - standard unit

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH - combination of TPH-GRO and TPH-DRO

FT- Feet

BGS - Below ground surface



APPENDIX A
HCSI SITE INVESTIGATION SUMMARY





2385 F ½ Road
Grand Junction, CO 81505
1.970.243.3271

February 7, 2013

Encana Oil and Gas USA Inc.
Blake Ford
1125 Escalante Drive,
Rangely, CO 81648

**RE: Site Investigation Summary – Douglas Pass Unit #7712
Environmental Consulting Services
HCSI Job Number 10-418**

Dear Mr. Ford,

This document has been provided per your request for a summary of actions taken during the pit closure site investigation associated with the Douglas Pass Unit #7712 (COGCC facility #322452, remediation #7149) by HRL Compliance Solutions, Inc. (HCSI) personnel during the 2012 field season. Please see below for the respective summary.

May 31, 2012 – June 4, 2012

The site investigation was conducted over a series of days by a qualified HCSI employee as authorized by Encana personnel. All samples were collected in accordance with the protocol specified within Encana Environmental Compliance Group's Sampling Procedures.

Two earthen pits were identified onsite for investigation by Encana personnel. It should be noted that the earthen pits had been backfilled prior to the site investigation. The respective localities of the pits were evident due to metal markers that had been placed in the center of the pit footprints after they were backfilled. The terminal ends of the line locate markers in association with the equipment onsite also provided confirmation with regards to the pit locations. It should be noted that the pits were backfilled prior to closure to ensure there was not any potential for violation of the Migratory Bird Treaty Act of 1918.

A trackhoe was utilized during the site investigation for excavation purposes. The soil associated with the pit investigations was characterized utilizing a photoionization detector (PID) throughout the excavation process. The pit associated with the wellhead did not have any indicators of hydrocarbon impacts. There were extensive indicators of hydrocarbon impacts in accordance with field screen readings (> 5,000 ppm for the pit walls and pit bottom) and visual observations (e.g. soil staining, odor) associated with the dehydration unit pit. The site investigation activities were stopped after approximately 1,200 cubic yards of soil had been excavated and stockpiled onsite for the respective pit. The reasoning for the discontinuance of excavation was due to safety concerns associated with the proximity of the excavation to the equipment onsite, proximity to another operator's pipeline, and the impracticability of continuing excavation. The final dimensions of the excavation associated with the dehydration unit pit was

approximately 50'W x50'L x 27'D. Grab samples from the pit bottom, side walls and spoils were collected from several locations throughout the excavation process. Background samples (with respect to arsenic) were collected as well. All samples were submitted to an analytical laboratory for analysis. The analytical reports indicated that the grab samples collected from the bottom of the pit, numerous pit walls and spoils exceeded the COGCC Table 910-1 standards with regards to total petroleum hydrocarbons (TPH), benzene, toluene, and total xylenes (Please see the attached Analytical Table and the Site Investigation Map for specifics). Due to the remoteness of the location, proximity to equipment onsite, and the size of the excavation, the pit was backfilled and compacted in order to continue the site investigation via drilling rig on a later date. HCSI made the recommendation to install ground water monitoring wells down gradient of the well pad to help determine depth to groundwater and assess if there was any hydrocarbon impacts to associated groundwater. It should be noted that there was no groundwater encountered during the excavation process. A Receptor Survey was conducted during the site investigation with regards to surface and groundwater features associated with the well pad. Please see below for the Receptor Survey details.

Receptor Survey

A receptor survey (survey) for the Douglas Pass Unit #7712 well pad was conducted by an HCSI employee over the days spent on location during the site investigation. The survey was conducted with regards to proximity to surface water features and areas with potential ground water interaction. The respective well pad is located on an alluvial fan at the base of very steep terrain. Surrounding vegetation ranges from alpine species on the hill slopes to desert species on the alluvial fan within the associated valley.

Surface Water

There were no surface water supply areas as defined by the COGCC Series Rules 100 definition adjacent to, or within a quarter mile of the well pad. However, the survey and desktop review did identify two USGS surface water features within a quarter mile of the well pad; they are both unnamed intermittent/ephemeral tributaries to the East Branch of West Salt Creek. The most proximal surface water feature is located approximately 227 feet to the east while the drainage to the west is approximately 300 feet away. It is likely that a release from the facility could reach the respective drainages. The two drainages ultimately merge approximately 1,000 feet south of the well pad. The drainages were dry at the time of the survey but did show indicators of recent water activity due to spring snowmelt conditions. In the event of a release on location, the surface flow would likely to migrate to the west. Potential impact to surface water is dependent on the environmental conditions during the time of the release but remains relatively high.


Groundwater

The respective well pad did not have any pits which were holding liquid during the site investigation or receptor survey. There were two pits onsite, both of which were being closed in accordance with the documents submitted with this receptor survey. The

historic pits were considered production pits. The pits were not located next to each other on the well pad; i.e., one was located just south of the dehydration unit while the other was located northwest of the gas well. Please see the attached map for a visual of the well pad details. The respective well pad is underlain by an unconfined aquifer or recharge zone. Per the soil survey for the respective area, the underlying soil type is the Battlement loam, 1 to 8 percent slopes. The hydraulic conductivity of the respective soil is 0.00125868 cm/sec. There are not any domestic water wells, or public water supply wells within a mile radius of the respective well pad. The well pad is not located within a 100 year floodplain. No groundwater was encountered during the excavation activities during the investigation of the production pits (excavation depth of 27' for the pit associated with the dehydration unit). The survey did not identify vegetation that could be used as an indicator of shallow groundwater. In accordance with the receptor survey, the potential to impact ground water is low.

Respectfully,

HRL Compliance Solutions, Inc.

A handwritten signature in black ink, appearing to read "Kate Ramsay". The signature is stylized with a large, looped initial "K" and a cursive "Ramsay".

Kate Ramsay
Environmental Consultant

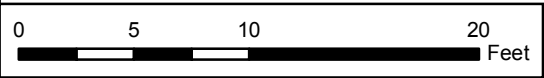
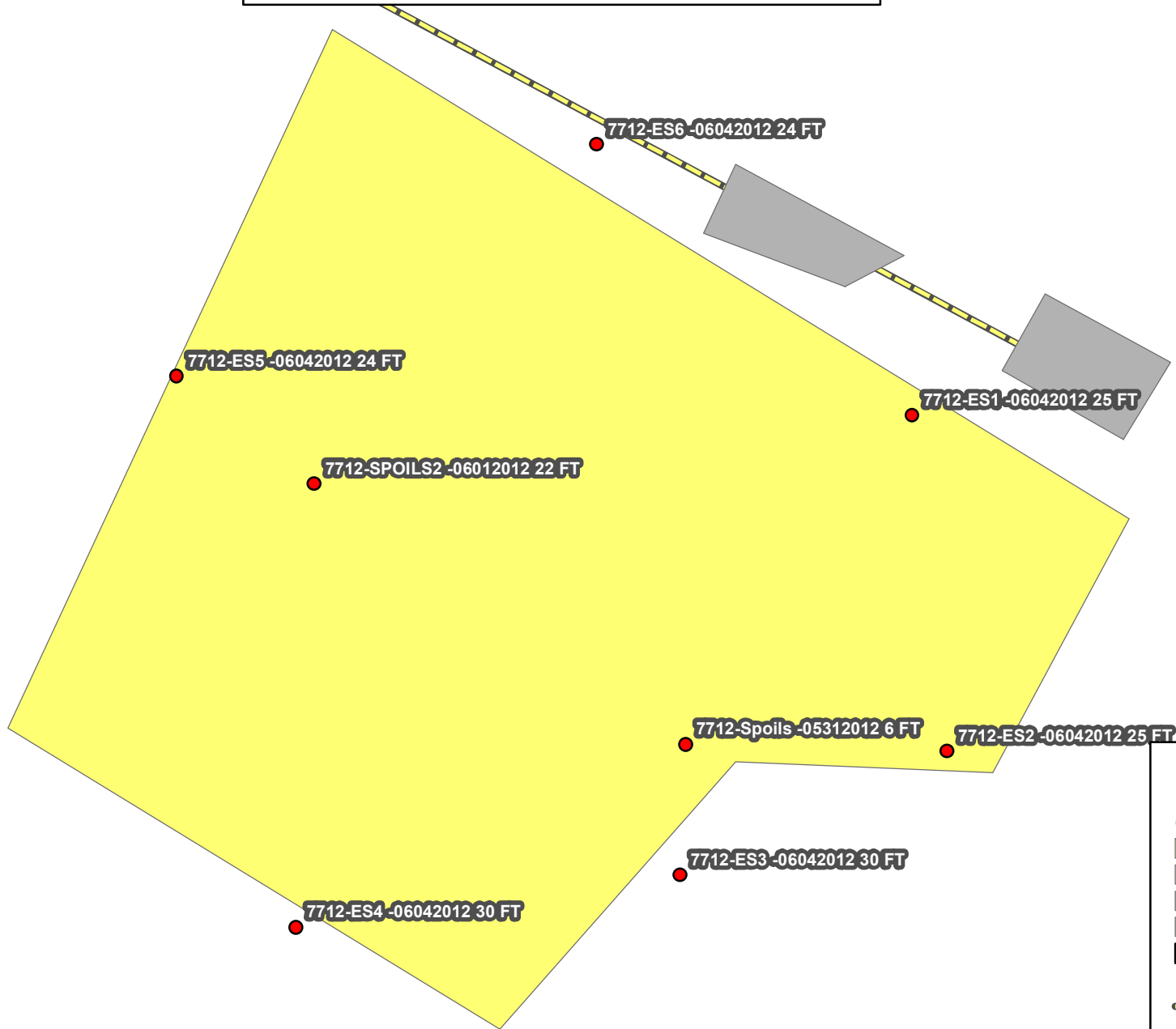
cc: Chantae Pennell (Encana – Rangely)
Herman Lucero (HCSI)

Attachment A – Analytical Summary Table
Attachment B – Site Investigation Maps
Attachment C – Analytical Report

COC ID	Date:	Lab	Sampler:	Sample Matrix	Matrix Notes	Metals in Soil (mg/kg [ppm])												
						0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000	
						Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	
7712-SPOILS-05312012 6 FT	5/31/2012	ESC	KHR	Soil	Spools	5	NS	BOL	14	BOL	17	9.6	0.071	9.6	BOL	BOL	50	
7712-SPOILS 2-06012012 22 FT	6/1/2012	ESC	KHR	Soil	Spools	11	NS	BOL	15	BOL	17	9.2	BOL	9.7	BOL	BOL	52	
7712-BG1-06012012 6 IN	6/1/2012	ESC	KHR	Soil	Background 1	8.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-BG2-06012012 6 IN	6/1/2012	ESC	KHR	Soil	Background 2	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-BG3-06012012 6 IN	6/1/2012	ESC	KHR	Soil	Background 3	4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-BG4-06012012 6 IN	6/1/2012	ESC	KHR	Soil	Background 4	6.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-BG5-06012012 6 IN	6/1/2012	ESC	KHR	Soil	Background 5	7.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-WELLPTSILTS-06012012 9 FT	6/1/2012	ESC	KHR	Soil	Well Pit Soil	9.6	NS	1.5	21	BOL	19	29	0.036	24	2.2	BOL	120	
7712-E51-06042012 25 FT	6/4/2012	ESC	KHR	Soil	Pit bottom	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-E53-06042012 30 FT	6/4/2012	ESC	KHR	Soil	Pit wall	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-E54-06042012 30 FT	6/4/2012	ESC	KHR	Soil	Pit wall	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-E55-06042012 24 FT	6/4/2012	ESC	KHR	Soil	Pit wall	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-E52-06042012 25 FT	6/4/2012	ESC	KHR	Soil	Pit wall	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
7712-E56-06042012 24 FT	6/4/2012	ESC	KHR	Soil	Pit wall	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	



Douglas Pass Unit 7712 Site Detail Map



Legend


- Sample Location

Other Features

- Excavated Area
- Pit Footprint
- Equipment
- Spoils Stockpile
- Containment

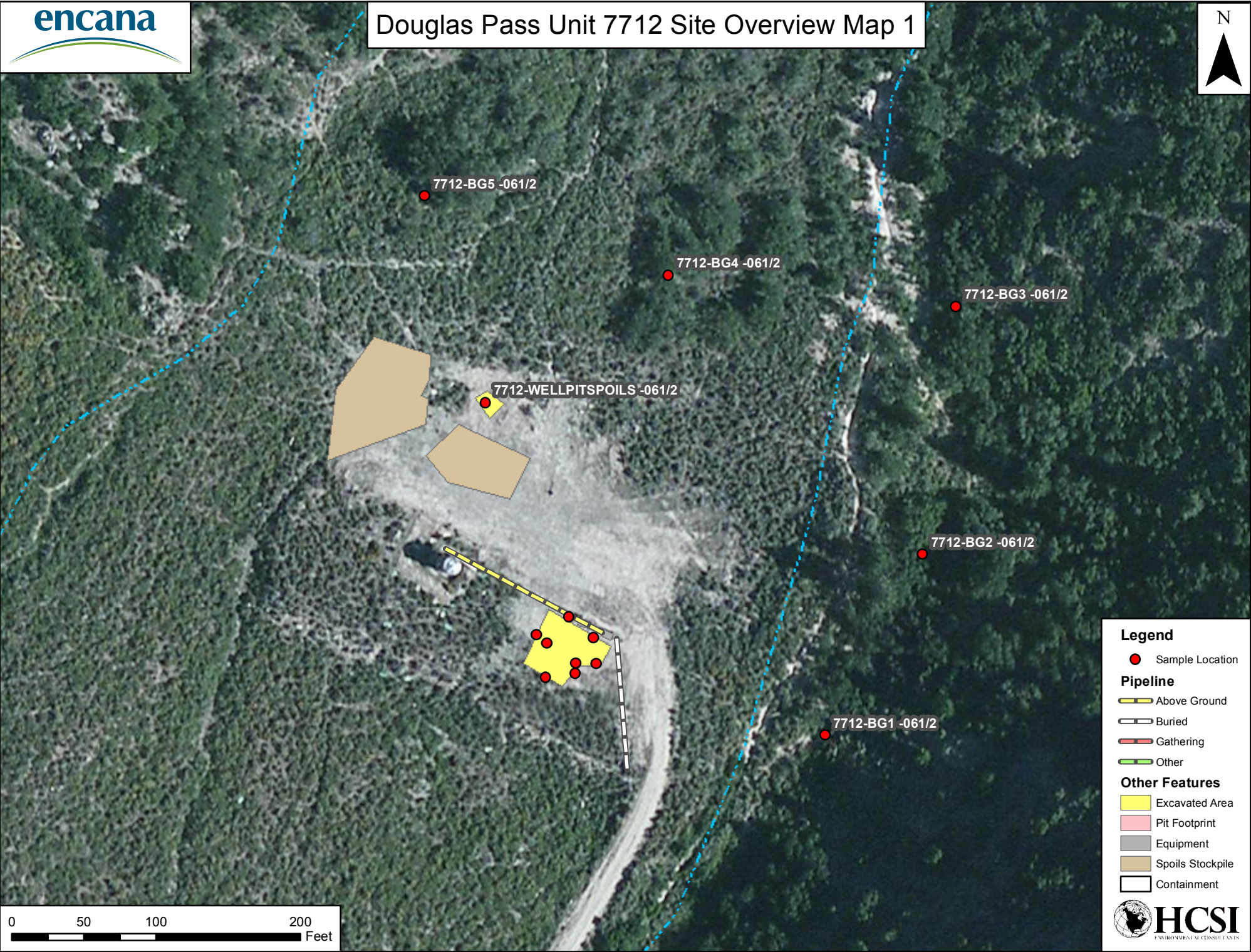
Pipeline

- Above Ground
- Buried
- Gathering
- Other

 **HCSI**
ENVIRONMENTAL CONSULTANTS

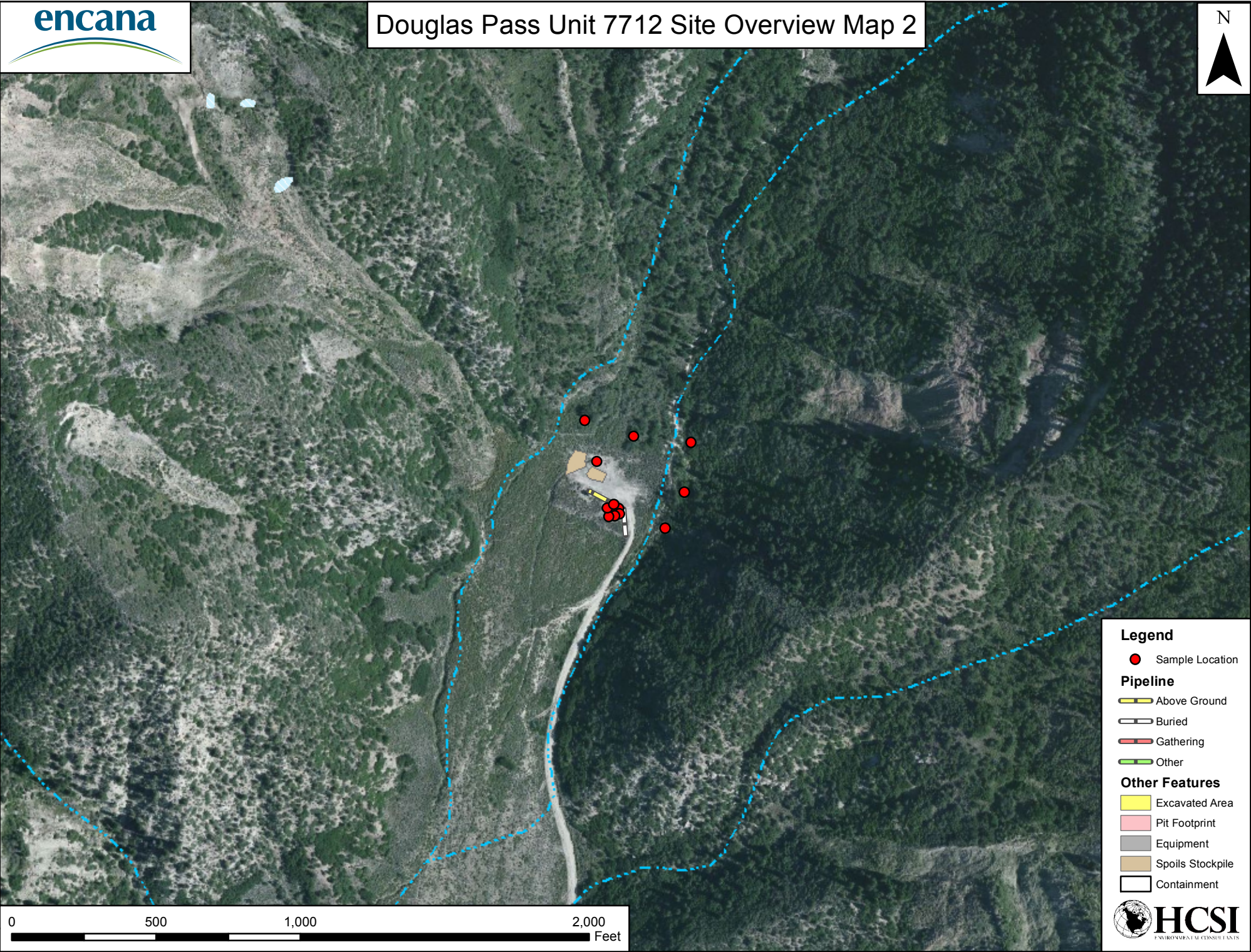


Douglas Pass Unit 7712 Site Overview Map 1





Douglas Pass Unit 7712 Site Overview Map 2





12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

Report Summary

Monday June 18, 2012

Report Number: L578737

Samples Received: 06/05/12

Client Project:

Description: Earthen Pit Closure Project

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

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
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,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES1-06042012
Collected By : KHR
Collection Date : 06/04/12 10:45

ESC Sample # : L578737-01

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	mg/kg	8021/8015	06/06/12	1000
Toluene	10.	5.0	mg/kg	8021/8015	06/06/12	1000
Ethylbenzene	7.6	0.50	mg/kg	8021/8015	06/06/12	1000
Total Xylene	140	1.5	mg/kg	8021/8015	06/06/12	1000
TPH (GC/FID) Low Fraction	3100	100	mg/kg	GRO	06/06/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	06/06/12	1000
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	06/06/12	1000
TPH (GC/FID) High Fraction	2500	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	52.4		% Rec.	3546/DRO	06/13/12	20

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: 06/18/12 15:22 Printed: 06/18/12 15:22

REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES2-06042012
Collected By : KHR
Collection Date : 06/04/12 10:50

ESC Sample # : L578737-02

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/06/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/06/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/06/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/06/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/06/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	06/06/12	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	06/06/12	5
TPH (GC/FID) High Fraction	4.3	4.0	mg/kg	3546/DRO	06/13/12	1
Surrogate recovery(%)						
o-Terphenyl	57.5		% Rec.	3546/DRO	06/13/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES3-06042012
Collected By : KHR
Collection Date : 06/04/12 10:55

ESC Sample # : L578737-03

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	17.	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	90.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	20.	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	250	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	6000	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	3000	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	28.0		% Rec.	3546/DRO	06/13/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES4-06042012
Collected By : KHR
Collection Date : 06/04/12 11:00

ESC Sample # : L578737-04

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	4.9	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	58.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	17.	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	220	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	5000	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.0		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	2800	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	50.6		% Rec.	3546/DRO	06/13/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES5-06042012
Collected By : KHR
Collection Date : 06/04/12 11:05

ESC Sample # : L578737-05

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.95	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	12.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	9.1	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	150	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	3600	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.4		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	2000	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	31.5		% Rec.	3546/DRO	06/13/12	20

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: 06/18/12 15:22 Printed: 06/18/12 15:22

REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES6-06042012
Collected By : KHR
Collection Date : 06/04/12 11:10

ESC Sample # : L578737-06

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.052	0.025	mg/kg	8021/8015	06/08/12	50
Toluene	BDL	0.25	mg/kg	8021/8015	06/08/12	50
Ethylbenzene	0.61	0.025	mg/kg	8021/8015	06/08/12	50
Total Xylene	2.0	0.075	mg/kg	8021/8015	06/08/12	50
TPH (GC/FID) Low Fraction	180	5.0	mg/kg	GRO	06/08/12	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.7		% Rec.	8021/8015	06/08/12	50
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	06/08/12	50
TPH (GC/FID) High Fraction	220	4.0	mg/kg	3546/DRO	06/18/12	1
Surrogate recovery(%)						
o-Terphenyl	60.4		% Rec.	3546/DRO	06/18/12	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: 06/18/12 15:22 Printed: 06/18/12 15:22

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L578737-01	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-03	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-04	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-05	WG596582	SAMP	o-Terphenyl	R2205858	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

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.

Summary of Remarks For Samples Printed
06/18/12 at 15:22:36

TSR Signing Reports: 358
R5 - Desired TAT

Log all projects under the project codes with the project managers last name unless multiple project managers are listed.

Sample: L578737-01 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-02 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-03 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-04 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-05 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-06 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22



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Blake Ford and Kate Ramsay
1125 Escalante Drive

Rangely, CO 81648-3600

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Level II

L578737

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Tax I.D. 62-0814289

Est. 1970

June 18, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG596531	06/06/12 19:00
Ethylbenzene	< .0005	mg/kg			WG596531	06/06/12 19:00
Toluene	< .005	mg/kg			WG596531	06/06/12 19:00
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596531	06/06/12 19:00
Total Xylene	< .0015	mg/kg			WG596531	06/06/12 19:00
a,a,a-Trifluorotoluene(FID)		% Rec.	98.75	59-128	WG596531	06/06/12 19:00
a,a,a-Trifluorotoluene(PID)		% Rec.	102.8	54-144	WG596531	06/06/12 19:00
Benzene	< .0005	mg/kg			WG596832	06/08/12 16:01
Ethylbenzene	< .0005	mg/kg			WG596832	06/08/12 16:01
Toluene	< .005	mg/kg			WG596832	06/08/12 16:01
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596832	06/08/12 16:01
Total Xylene	< .0015	mg/kg			WG596832	06/08/12 16:01
a,a,a-Trifluorotoluene(FID)		% Rec.	94.06	59-128	WG596832	06/08/12 16:01
a,a,a-Trifluorotoluene(PID)		% Rec.	100.9	54-144	WG596832	06/08/12 16:01
TPH (GC/FID) High Fraction	< 4	ppm			WG596582	06/11/12 21:03
o-Terphenyl		% Rec.	79.55	50-150	WG596582	06/11/12 21:03
TPH (GC/FID) High Fraction	< 4	ppm			WG598379	06/18/12 09:51
o-Terphenyl		% Rec.	77.58	50-150	WG598379	06/18/12 09:51

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0449	89.7	76-113	WG596531
Ethylbenzene	mg/kg	.05	0.0442	88.3	78-115	WG596531
Toluene	mg/kg	.05	0.0445	89.0	76-114	WG596531
Total Xylene	mg/kg	.15	0.134	89.2	81-118	WG596531
a,a,a-Trifluorotoluene(PID)				103.3	54-144	WG596531
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.75	105.	67-135	WG596531
a,a,a-Trifluorotoluene(FID)				103.8	59-128	WG596531
Benzene	mg/kg	.05	0.0416	83.2	76-113	WG596832
Ethylbenzene	mg/kg	.05	0.0421	84.2	78-115	WG596832
Toluene	mg/kg	.05	0.0415	83.1	76-114	WG596832
Total Xylene	mg/kg	.15	0.131	87.0	81-118	WG596832
a,a,a-Trifluorotoluene(PID)				101.1	54-144	WG596832
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.27	114.	67-135	WG596832
a,a,a-Trifluorotoluene(FID)				99.63	59-128	WG596832
TPH (GC/FID) High Fraction	ppm	60	38.7	64.6	50-150	WG596582
o-Terphenyl				64.71	50-150	WG596582
TPH (GC/FID) High Fraction	ppm	60	42.9	71.5	50-150	WG598379
o-Terphenyl				72.59	50-150	WG598379

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0444	0.0449	89.0	76-113	0.930	20	WG596531
Ethylbenzene	mg/kg	0.0438	0.0442	88.0	78-115	0.950	20	WG596531
Toluene	mg/kg	0.0438	0.0445	88.0	76-114	1.61	20	WG596531

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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June 18, 2012

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Total Xylene	mg/kg	0.132	0.134	88.0	81-118	1.18	20	WG596531
a,a,a-Trifluorotoluene(PID)				104.0	54-144			WG596531
TPH (GC/FID) Low Fraction	mg/kg	6.05	5.75	110.	67-135	5.08	20	WG596531
a,a,a-Trifluorotoluene(FID)				104.7	59-128			WG596531
Benzene	mg/kg	0.0429	0.0416	86.0	76-113	3.07	20	WG596832
Ethylbenzene	mg/kg	0.0426	0.0421	85.0	78-115	1.26	20	WG596832
Toluene	mg/kg	0.0424	0.0415	85.0	76-114	2.10	20	WG596832
Total Xylene	mg/kg	0.133	0.131	88.0	81-118	1.65	20	WG596832
a,a,a-Trifluorotoluene(PID)				100.4	54-144			WG596832
TPH (GC/FID) Low Fraction	mg/kg	6.47	6.27	118.	67-135	3.18	20	WG596832
a,a,a-Trifluorotoluene(FID)				100.2	59-128			WG596832
TPH (GC/FID) High Fraction	ppm	49.6	38.7	83.0	50-150	24.7*	23	WG596582
o-Terphenyl				82.79	50-150			WG596582

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
Benzene	mg/kg	0.215	0	.05	85.9	32-137	L578737-02	WG596531
Ethylbenzene	mg/kg	0.205	0	.05	82.1	10-150	L578737-02	WG596531
Toluene	mg/kg	0.212	0	.05	84.8	20-142	L578737-02	WG596531
Total Xylene	mg/kg	0.617	0	.15	82.3	16-141	L578737-02	WG596531
a,a,a-Trifluorotoluene(PID)					103.0	54-144		WG596531
TPH (GC/FID) Low Fraction	mg/kg	26.2	0	5.5	95.2	55-109	L596737-02	WG596531
a,a,a-Trifluorotoluene(FID)					102.6	59-128		WG596531
Benzene	mg/kg	0.211	0	.05	84.4	32-137	L579203-01	WG596832
Ethylbenzene	mg/kg	0.215	0	.05	86.1	10-150	L579203-01	WG596832
Toluene	mg/kg	0.219	0	.05	87.6	20-142	L579203-01	WG596832
Total Xylene	mg/kg	0.678	0	.15	90.3	16-141	L579203-01	WG596832
a,a,a-Trifluorotoluene(PID)					101.9	54-144		WG596832
TPH (GC/FID) Low Fraction	mg/kg	29.8	0	5.5	108.	55-109	L579203-01	WG596832
a,a,a-Trifluorotoluene(FID)					99.16	59-128		WG596832
TPH (GC/FID) High Fraction	ppm	37.3	5.58	60	52.9	50-150	L578835-01	WG596582
o-Terphenyl					48.19*	50-150		WG596582

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.213	0.215	85.2		32-137	0.868	39	L578737-02	WG596531
Ethylbenzene	mg/kg	0.198	0.205	79.2		10-150	3.54	44	L578737-02	WG596531
Toluene	mg/kg	0.204	0.212	81.7		20-142	3.82	42	L578737-02	WG596531
Total Xylene	mg/kg	0.596	0.617	79.5		16-141	3.45	46	L578737-02	WG596531
a,a,a-Trifluorotoluene(PID)				103.1		54-144				WG596531
TPH (GC/FID) Low Fraction	mg/kg	26.5	26.2	96.3		55-109	1.16	20	L596737-02	WG596531
a,a,a-Trifluorotoluene(FID)				102.3		59-128				WG596531
Benzene	mg/kg	0.210	0.211	84.0		32-137	0.560	39	L579203-01	WG596832
Ethylbenzene	mg/kg	0.209	0.215	83.8		10-150	2.67	44	L579203-01	WG596832
Toluene	mg/kg	0.210	0.219	83.9		20-142	4.22	42	L579203-01	WG596832
Total Xylene	mg/kg	0.651	0.678	86.8		16-141	3.95	46	L579203-01	WG596832
a,a,a-Trifluorotoluene(PID)				99.58		54-144				WG596832

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	30.2	29.8	110.*	55-109	1.34	20	L579203-01	WG596832
a,a,a-Trifluorotoluene(FID)				99.34	59-128				WG596832
TPH (GC/FID) High Fraction	ppm	38.4	37.3	54.6	50-150	2.73	40	L578835-01	WG596582
o-Terphenyl				48.23*	50-150				WG596582

Batch number /Run number / Sample number cross reference

WG596531: R2201653: L578737-01 02 03 04 05
WG596832: R2203713: L578737-06
WG596582: R2205858: L578737-01 02 03 04 05
WG598379: R2215634: L578737-06

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
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Rangely, CO 81648-3600

Report Summary

Wednesday June 13, 2012

Report Number: L578450

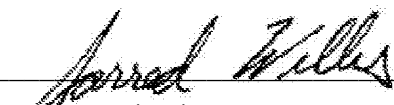
Samples Received: 06/04/12

Client Project:

Description: Earthen Pit Closure Project

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:


Jayred Willis, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
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,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-SPOILS-05312012 6 FT
Collected By : KHR
Collection Date : 05/31/12 14:30

ESC Sample # : L578450-01

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/08/12	1
Chromium, Trivalent	14.	2.0	mg/kg	Calc.	06/06/12	1
ORP	160		mV	2580	06/08/12	1
pH	7.8		su	9045D	06/06/12	1
Sodium Adsorption Ratio	4.0			Calc.	06/08/12	1
Specific Conductance	300		umhos/cm	9050AMod	06/06/12	1
Mercury	0.071	0.020	mg/kg	7471	06/07/12	1
Arsenic	5.0	1.0	mg/kg	6010B	06/06/12	1
Barium	160	0.25	mg/kg	6010B	06/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	06/06/12	1
Chromium	14.	0.50	mg/kg	6010B	06/06/12	1
Copper	17.	1.0	mg/kg	6010B	06/06/12	1
Lead	9.6	0.25	mg/kg	6010B	06/06/12	1
Nickel	9.6	1.0	mg/kg	6010B	06/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	06/06/12	1
Silver	BDL	0.50	mg/kg	6010B	06/06/12	1
Zinc	50.	1.5	mg/kg	6010B	06/06/12	1
Benzene	5.2	0.25	mg/kg	8021/8015	06/05/12	500
Toluene	8.8	2.5	mg/kg	8021/8015	06/05/12	500
Ethylbenzene	23.	0.25	mg/kg	8021/8015	06/05/12	500
Total Xylene	230	0.75	mg/kg	8021/8015	06/05/12	500
TPH (GC/FID) Low Fraction	5100	50.	mg/kg	GRO	06/05/12	500
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.1		% Rec.	8021/8015	06/05/12	500
a,a,a-Trifluorotoluene(PID)	99.6		% Rec.	8021/8015	06/05/12	500
TPH (GC/FID) High Fraction	1000	20.	mg/kg	3546/DRO	06/06/12	5
Surrogate recovery(%)						
o-Terphenyl	62.5		% Rec.	3546/DRO	06/06/12	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.42	0.30	mg/kg	8270C-SIM	06/10/12	50
Acenaphthene	0.39	0.30	mg/kg	8270C-SIM	06/10/12	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Benzo(a)anthracene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Benzo(a)pyrene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-SPOILS-05312012 6 FT
Collected By : KHR
Collection Date : 05/31/12 14:30

ESC Sample # : L578450-01

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Chrysene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Fluorene	1.3	0.30	mg/kg	8270C-SIM	06/10/12	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Naphthalene	8.6	0.30	mg/kg	8270C-SIM	06/10/12	50
Phenanthrene	1.8	0.30	mg/kg	8270C-SIM	06/10/12	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
1-Methylnaphthalene	7.4	0.30	mg/kg	8270C-SIM	06/10/12	50
2-Methylnaphthalene	16.	0.30	mg/kg	8270C-SIM	06/10/12	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	06/10/12	50
Surrogate Recovery						
Nitrobenzene-d5	4980		% Rec.	8270C-SIM	06/10/12	50
2-Fluorobiphenyl	271.		% Rec.	8270C-SIM	06/10/12	50
p-Terphenyl-d14	130.		% Rec.	8270C-SIM	06/10/12	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-BG1-06012012 6 IN
Collected By : KHR
Collection Date : 06/01/12 09:15

ESC Sample # : L578450-02

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	1.8			Calc.	06/08/12	1
Arsenic	8.3	1.0	mg/kg	6010B	06/06/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-BG2-06012012 6 IN
Collected By : KHR
Collection Date : 06/01/12 09:20

ESC Sample # : L578450-03

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	1.6			Calc.	06/08/12	1
Arsenic	3.9	1.0	mg/kg	6010B	06/06/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/13/12 15:11 Printed: 06/13/12 15:12



12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-BG3-06012012 6 IN
Collected By : KHR
Collection Date : 06/01/12 09:25

ESC Sample # : L578450-04

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	1.1			Calc.	06/08/12	1
Arsenic	4.0	1.0	mg/kg	6010B	06/06/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-BG4-06012012 6 IN
Collected By : KHR
Collection Date : 06/01/12 09:30

ESC Sample # : L578450-05

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	1.2			Calc.	06/08/12	1
Arsenic	6.2	1.0	mg/kg	6010B	06/06/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-BG5-06012012 6 IN
Collected By : KHR
Collection Date : 06/01/12 09:35

ESC Sample # : L578450-06

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.95			Calc.	06/08/12	1
Arsenic	7.9	1.0	mg/kg	6010B	06/06/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-SPOILS 2-06012012 22 FT
Collected By : KHR
Collection Date : 06/01/12 13:10

ESC Sample # : L578450-07

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/08/12	1
Chromium, Trivalent	15.	2.0	mg/kg	Calc.	06/06/12	1
ORP	160		mV	2580	06/08/12	1
pH	8.2		su	9045D	06/06/12	1
Sodium Adsorption Ratio	3.0			Calc.	06/08/12	1
Specific Conductance	500		umhos/cm	9050AMod	06/06/12	1
Mercury	BDL	0.020	mg/kg	7471	06/07/12	1
Arsenic	11.	1.0	mg/kg	6010B	06/06/12	1
Barium	170	0.25	mg/kg	6010B	06/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	06/06/12	1
Chromium	15.	0.50	mg/kg	6010B	06/06/12	1
Copper	17.	1.0	mg/kg	6010B	06/06/12	1
Lead	9.2	0.25	mg/kg	6010B	06/06/12	1
Nickel	9.7	1.0	mg/kg	6010B	06/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	06/06/12	1
Silver	BDL	0.50	mg/kg	6010B	06/06/12	1
Zinc	52.	1.5	mg/kg	6010B	06/06/12	1
Benzene	BDL	0.50	mg/kg	8021/8015	06/05/12	1000
Toluene	BDL	5.0	mg/kg	8021/8015	06/05/12	1000
Ethylbenzene	6.7	0.50	mg/kg	8021/8015	06/05/12	1000
Total Xylene	42.	1.5	mg/kg	8021/8015	06/05/12	1000
TPH (GC/FID) Low Fraction	1500	100	mg/kg	GRO	06/05/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.8		% Rec.	8021/8015	06/05/12	1000
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/05/12	1000
TPH (GC/FID) High Fraction	660	20.	mg/kg	3546/DRO	06/07/12	5
Surrogate recovery(%)						
o-Terphenyl	65.3		% Rec.	3546/DRO	06/07/12	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.095	0.0060	mg/kg	8270C-SIM	06/09/12	1
Acenaphthene	0.029	0.0060	mg/kg	8270C-SIM	06/09/12	1
Acenaphthylene	0.0077	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(a)anthracene	0.016	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(a)pyrene	0.0092	0.0060	mg/kg	8270C-SIM	06/09/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-SPOILS 2-06012012 22 FT
Collected By : KHR
Collection Date : 06/01/12 13:10

ESC Sample # : L578450-07

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Chrysene	0.011	0.0060	mg/kg	8270C-SIM	06/09/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Fluoranthene	0.0072	0.0060	mg/kg	8270C-SIM	06/09/12	1
Fluorene	0.12	0.0060	mg/kg	8270C-SIM	06/09/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Naphthalene	1.4	0.12	mg/kg	8270C-SIM	06/12/12	20
Phenanthrene	0.19	0.0060	mg/kg	8270C-SIM	06/09/12	1
Pyrene	0.021	0.0060	mg/kg	8270C-SIM	06/09/12	1
1-Methylnaphthalene	1.1	0.12	mg/kg	8270C-SIM	06/12/12	20
2-Methylnaphthalene	2.3	0.12	mg/kg	8270C-SIM	06/12/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Surrogate Recovery						
Nitrobenzene-d5	971.		% Rec.	8270C-SIM	06/12/12	20
2-Fluorobiphenyl	87.2		% Rec.	8270C-SIM	06/09/12	1
p-Terphenyl-d14	83.0		% Rec.	8270C-SIM	06/09/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-WELLPITSOILS-06012012 9 FT
Collected By : KHR
Collection Date : 06/01/12 14:15

ESC Sample # : L578450-08

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/08/12	1
Chromium, Trivalent	21.	2.0	mg/kg	Calc.	06/06/12	1
ORP	180		mV	2580	06/08/12	1
pH	7.7		su	9045D	06/06/12	1
Sodium Adsorption Ratio	1.2			Calc.	06/08/12	1
Specific Conductance	1300		umhos/cm	9050AMod	06/06/12	1
Mercury	0.036	0.020	mg/kg	7471	06/07/12	1
Arsenic	9.6	1.0	mg/kg	6010B	06/06/12	1
Barium	160	0.25	mg/kg	6010B	06/06/12	1
Cadmium	1.5	0.25	mg/kg	6010B	06/06/12	1
Chromium	21.	0.50	mg/kg	6010B	06/06/12	1
Copper	19.	1.0	mg/kg	6010B	06/06/12	1
Lead	29.	0.25	mg/kg	6010B	06/06/12	1
Nickel	24.	1.0	mg/kg	6010B	06/06/12	1
Selenium	2.2	1.0	mg/kg	6010B	06/06/12	1
Silver	BDL	0.50	mg/kg	6010B	06/06/12	1
Zinc	120	1.5	mg/kg	6010B	06/06/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	06/05/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/05/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/05/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/05/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/05/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.2		% Rec.	8021/8015	06/05/12	5
a,a,a-Trifluorotoluene(PID)	99.2		% Rec.	8021/8015	06/05/12	5
TPH (GC/FID) High Fraction	110	4.0	mg/kg	3546/DRO	06/12/12	1
Surrogate recovery(%)						
o-Terphenyl	52.5		% Rec.	3546/DRO	06/12/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.11	0.0060	mg/kg	8270C-SIM	06/09/12	1
Acenaphthene	0.0092	0.0060	mg/kg	8270C-SIM	06/09/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(a)anthracene	0.013	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 04, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-WELLPITSOILS-06012012 9 FT
Collected By : KHR
Collection Date : 06/01/12 14:15

ESC Sample # : L578450-08

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Chrysene	0.0076	0.0060	mg/kg	8270C-SIM	06/09/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Fluoranthene	0.0081	0.0060	mg/kg	8270C-SIM	06/09/12	1
Fluorene	0.025	0.0060	mg/kg	8270C-SIM	06/09/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Naphthalene	0.089	0.0060	mg/kg	8270C-SIM	06/09/12	1
Phenanthrene	0.12	0.0060	mg/kg	8270C-SIM	06/09/12	1
Pyrene	0.014	0.0060	mg/kg	8270C-SIM	06/09/12	1
1-Methylnaphthalene	0.22	0.0060	mg/kg	8270C-SIM	06/09/12	1
2-Methylnaphthalene	0.29	0.0060	mg/kg	8270C-SIM	06/09/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/09/12	1
Surrogate Recovery						
Nitrobenzene-d5	68.2		% Rec.	8270C-SIM	06/09/12	1
2-Fluorobiphenyl	76.5		% Rec.	8270C-SIM	06/09/12	1
p-Terphenyl-d14	85.2		% Rec.	8270C-SIM	06/09/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L578450-01	WG596579	SAMP	Nitrobenzene-d5	R2203957	J7
	WG596579	SAMP	2-Fluorobiphenyl	R2203957	J7
	WG596579	SAMP	p-Terphenyl-d14	R2203957	J7
	WG596289	SAMP	pH	R2200555	T8
	WG596776	SAMP	ORP	R2203133	T8
L578450-07	WG596579	SAMP	Nitrobenzene-d5	R2203957	J7
	WG596289	SAMP	pH	R2200555	T8
	WG596776	SAMP	ORP	R2203133	T8
L578450-08	WG596289	SAMP	pH	R2200555	T8
	WG596776	SAMP	ORP	R2203133	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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.

Summary of Remarks For Samples Printed
06/13/12 at 15:12:29

TSR Signing Reports: 358
R5 - Desired TAT

Log all projects under the project codes with the project managers last name unless multiple project managers are listed.

Sample: L578450-01 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-02 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-03 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-04 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-05 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-06 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-07 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11
Sample: L578450-08 Account: ENCANRCO Received: 06/04/12 09:30 Due Date: 06/11/12 00:00 RPT Date: 06/13/12 15:11



YOUR LAB OF CHOICE

EnCana Oil & Gas - Rangely, CO
Blake Ford and Kate Ramsay
1125 Escalante Drive

Rangely, CO 81648-3600

Quality Assurance Report
Level II

L578450

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(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 13, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG596238	06/05/12 17:09
Ethylbenzene	< .0005	mg/kg			WG596238	06/05/12 17:09
Toluene	< .005	mg/kg			WG596238	06/05/12 17:09
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596238	06/05/12 17:09
Total Xylene	< .0015	mg/kg			WG596238	06/05/12 17:09
a,a,a-Trifluorotoluene(FID)		% Rec.	103.0	59-128	WG596238	06/05/12 17:09
a,a,a-Trifluorotoluene(PID)		% Rec.	112.3	54-144	WG596238	06/05/12 17:09
TPH (GC/FID) High Fraction	< 4	ppm			WG596050	06/06/12 10:09
o-Terphenyl		% Rec.	68.31	50-150	WG596050	06/06/12 10:09
Arsenic	< 1	mg/kg			WG596263	06/06/12 11:49
Barium	< .25	mg/kg			WG596263	06/06/12 11:49
Cadmium	< .25	mg/kg			WG596263	06/06/12 11:49
Chromium	< .5	mg/kg			WG596263	06/06/12 11:49
Copper	< 1	mg/kg			WG596263	06/06/12 11:49
Lead	< .25	mg/kg			WG596263	06/06/12 11:49
Nickel	< 1	mg/kg			WG596263	06/06/12 11:49
Selenium	< 1	mg/kg			WG596263	06/06/12 11:49
Silver	< .5	mg/kg			WG596263	06/06/12 11:49
Zinc	< 1.5	mg/kg			WG596263	06/06/12 11:49
Mercury	< .02	mg/kg			WG596516	06/07/12 08:35
pH	8.50	su			WG596289	06/06/12 16:41
Specific Conductance	2.22	umhos/cm			WG596466	06/06/12 23:23
Chromium, Hexavalent	< 2	mg/kg			WG596075	06/08/12 08:53
1-Methylnaphthalene	< .006	mg/kg			WG596579	06/09/12 02:19
2-Chloronaphthalene	< .006	mg/kg			WG596579	06/09/12 02:19
2-Methylnaphthalene	< .006	mg/kg			WG596579	06/09/12 02:19
Acenaphthene	< .006	mg/kg			WG596579	06/09/12 02:19
Acenaphthylene	< .006	mg/kg			WG596579	06/09/12 02:19
Anthracene	< .006	mg/kg			WG596579	06/09/12 02:19
Benzo(a)anthracene	< .006	mg/kg			WG596579	06/09/12 02:19
Benzo(a)pyrene	< .006	mg/kg			WG596579	06/09/12 02:19
Benzo(b)fluoranthene	< .006	mg/kg			WG596579	06/09/12 02:19
Benzo(g,h,i)perylene	< .006	mg/kg			WG596579	06/09/12 02:19
Benzo(k)fluoranthene	< .006	mg/kg			WG596579	06/09/12 02:19
Chrysene	< .006	mg/kg			WG596579	06/09/12 02:19
Dibenz(a,h)anthracene	< .006	mg/kg			WG596579	06/09/12 02:19
Fluoranthene	< .006	mg/kg			WG596579	06/09/12 02:19
Fluorene	< .006	mg/kg			WG596579	06/09/12 02:19
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG596579	06/09/12 02:19
Naphthalene	< .006	mg/kg			WG596579	06/09/12 02:19
Phenanthrene	< .006	mg/kg			WG596579	06/09/12 02:19
Pyrene	< .006	mg/kg			WG596579	06/09/12 02:19
2-Fluorobiphenyl		% Rec.	70.78	34-129	WG596579	06/09/12 02:19
Nitrobenzene-d5		% Rec.	72.28	14-141	WG596579	06/09/12 02:19
p-Terphenyl-d14		% Rec.	91.29	25-139	WG596579	06/09/12 02:19

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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EnCana Oil & Gas - Rangely, CO
Blake Ford and Kate Ramsay
1125 Escalante Drive

Rangely, CO 81648-3600

Quality Assurance Report
Level II

L578450

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

June 13, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG597332	06/12/12 15:07
o-Terphenyl		% Rec.	71.77	50-150	WG597332	06/12/12 15:07

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	6.90	6.10	11.7	20	L578413-10	WG596263
Barium	mg/kg	120.	135.	10.1	20	L578413-10	WG596263
Cadmium	mg/kg	22.0	23.0	3.99	20	L578413-10	WG596263
Chromium	mg/kg	17.0	16.3	4.79	20	L578413-10	WG596263
Copper	mg/kg	29.0	27.3	7.41	20	L578413-10	WG596263
Lead	mg/kg	42.0	36.0	15.1	20	L578413-10	WG596263
Nickel	mg/kg	10.0	10.4	0.966	20	L578413-10	WG596263
Selenium	mg/kg	0	0	0	20	L578413-10	WG596263
Silver	mg/kg	0	0	0	20	L578413-10	WG596263
Zinc	mg/kg	1200	1200	1.65	20	L578413-10	WG596263
Mercury	mg/kg	0.0460	0.0530	13.9	20	L578550-01	WG596516
pH	su	12.0	12.0	2.53*	1	L578430-24	WG596289
pH	su	13.0	13.0	2.41*	1	L578430-32	WG596289
Specific Conductance	umhos/cm	18000	21000	13.7	20	L578196-01	WG596466
Chromium,Hexavalent	mg/kg	0	0	0	20	L578857-01	WG596075
Chromium,Hexavalent	mg/kg	0	0	0	20	L577984-01	WG596075
ORP	mV	100.	100.	1.98	20	L577173-03	WG596776
ORP	mV	180.	180.	0	20	L578450-08	WG596776

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0463	92.5	76-113	WG596238
Ethylbenzene	mg/kg	.05	0.0475	95.0	78-115	WG596238
Toluene	mg/kg	.05	0.0474	94.7	76-114	WG596238
Total Xylene	mg/kg	.15	0.148	98.4	81-118	WG596238
a,a,a-Trifluorotoluene(FID)				102.7	59-128	WG596238
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.20	131.	67-135	WG596238
a,a,a-Trifluorotoluene(FID)				109.2	59-128	WG596238
TPH (GC/FID) High Fraction	ppm	60	41.8	69.7	50-150	WG596050
o-Terphenyl				71.86	50-150	WG596050
Arsenic	mg/kg	92.6	94.2	102.	82.9-117	WG596263
Barium	mg/kg	169	167.	98.8	82.8-117	WG596263
Cadmium	mg/kg	61.8	61.4	99.4	83.3-117	WG596263
Chromium	mg/kg	71.3	69.8	97.9	81.8-118	WG596263
Copper	mg/kg	81.2	80.4	99.0	83.9-116	WG596263
Lead	mg/kg	92.4	95.5	103.	83.3-117	WG596263
Nickel	mg/kg	59.1	53.6	90.7	83.8-116	WG596263
Selenium	mg/kg	89.5	89.4	99.9	79-121	WG596263

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Silver	mg/kg	34.4	31.8	92.4	66.3-134	WG596263
Zinc	mg/kg	141	144.	102.	80.9-119	WG596263
Mercury	mg/kg	3.77	4.60	122.	71.6-128	WG596516
pH	su	5.7	5.63	98.8	98-101	WG596289
Specific Conductance	umhos/cm	495	481.	97.2	85-115	WG596466
Chromium, Hexavalent	mg/kg	150	135.	90.0	50-150	WG596075
ORP	mV	228	229.	100.	95.6-104.	WG596776
1-Methylnaphthalene	mg/kg	.033	0.0282	85.4	48-113	WG596579
2-Chloronaphthalene	mg/kg	.033	0.0272	82.5	51-114	WG596579
2-Methylnaphthalene	mg/kg	.033	0.0285	86.3	44-109	WG596579
Acenaphthene	mg/kg	.033	0.0269	81.6	52-108	WG596579
Acenaphthylene	mg/kg	.033	0.0279	84.5	51-110	WG596579
Anthracene	mg/kg	.033	0.0305	92.3	58-120	WG596579
Benzo(a)anthracene	mg/kg	.033	0.0270	81.8	54-110	WG596579
Benzo(a)pyrene	mg/kg	.033	0.0282	85.5	56-118	WG596579
Benzo(b)fluoranthene	mg/kg	.033	0.0290	88.0	55-114	WG596579
Benzo(g,h,i)perylene	mg/kg	.033	0.0294	89.1	48-130	WG596579
Benzo(k)fluoranthene	mg/kg	.033	0.0293	88.8	55-122	WG596579
Chrysene	mg/kg	.033	0.0295	89.4	57-118	WG596579
Dibenz(a,h)anthracene	mg/kg	.033	0.0293	88.9	53-122	WG596579
Fluoranthene	mg/kg	.033	0.0289	87.5	58-118	WG596579
Fluorene	mg/kg	.033	0.0277	83.8	54-109	WG596579
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0290	87.9	51-125	WG596579
Naphthalene	mg/kg	.033	0.0275	83.4	45-105	WG596579
Phenanthrene	mg/kg	.033	0.0296	89.7	53-114	WG596579
Pyrene	mg/kg	.033	0.0294	89.1	53-121	WG596579
2-Fluorobiphenyl				80.71	34-129	WG596579
Nitrobenzene-d5				86.15	14-141	WG596579
p-Terphenyl-d14				102.2	25-139	WG596579
TPH (GC/FID) High Fraction	ppm	60	49.3	82.2	50-150	WG597332
o-Terphenyl				73.46	50-150	WG597332

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0472	0.0463	94.0	76-113	1.97	20	WG596238
Ethylbenzene	mg/kg	0.0481	0.0475	96.0	78-115	1.16	20	WG596238
Toluene	mg/kg	0.0473	0.0474	95.0	76-114	0.110	20	WG596238
Total Xylene	mg/kg	0.150	0.148	100.	81-118	1.40	20	WG596238
a,a,a-Trifluorotoluene(FID)				102.5	59-128			WG596238
TPH (GC/FID) Low Fraction	mg/kg	7.19	7.20	131.	67-135	0.190	20	WG596238
a,a,a-Trifluorotoluene(FID)				109.3	59-128			WG596238

TPH (GC/FID) High Fraction	ppm	34.2	41.8	57.0	50-150	20.2*	20	WG596050
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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
o-Terphenyl				58.28	50-150			
pH	su	5.60	5.63	98.0	98-101	0.534	20	WG596289
Specific Conductance	umhos/	480.	481.	97.0	85-115	0.208	20	WG596466
Chromium, Hexavalent	mg/kg	118.	135.	79.0	50-150	13.4	20	WG596075
ORP	mV	226.	229.	99.0	95.6-104.	1.32	20	WG596776
1-Methylnaphthalene	mg/kg	0.0269	0.0282	81.0	48-113	4.84	24	WG596579
2-Chloronaphthalene	mg/kg	0.0252	0.0272	76.0	51-114	7.86	24	WG596579
2-Methylnaphthalene	mg/kg	0.0262	0.0285	79.0	44-109	8.20	24	WG596579
Acenaphthene	mg/kg	0.0257	0.0269	78.0	52-108	4.83	22	WG596579
Acenaphthylene	mg/kg	0.0257	0.0279	78.0	51-110	8.08	21	WG596579
Anthracene	mg/kg	0.0286	0.0305	87.0	58-120	6.25	20	WG596579
Benzo(a)anthracene	mg/kg	0.0263	0.0270	80.0	54-110	2.48	22	WG596579
Benzo(a)pyrene	mg/kg	0.0270	0.0282	82.0	56-118	4.58	21	WG596579
Benzo(b)fluoranthene	mg/kg	0.0272	0.0290	82.0	55-114	6.61	20	WG596579
Benzo(g,h,i)perylene	mg/kg	0.0283	0.0294	86.0	48-130	4.03	20	WG596579
Benzo(k)fluoranthene	mg/kg	0.0279	0.0293	84.0	55-122	4.89	25	WG596579
Chrysene	mg/kg	0.0276	0.0295	84.0	57-118	6.80	20	WG596579
Dibenz(a,h)anthracene	mg/kg	0.0281	0.0293	85.0	53-122	4.30	20	WG596579
Fluoranthene	mg/kg	0.0271	0.0289	82.0	58-118	6.39	20	WG596579
Fluorene	mg/kg	0.0260	0.0277	79.0	54-109	6.33	20	WG596579
Indeno(1,2,3-cd)pyrene	mg/kg	0.0281	0.0290	85.0	51-125	3.25	21	WG596579
Naphthalene	mg/kg	0.0248	0.0275	75.0	45-105	10.4	24	WG596579
Phenanthrene	mg/kg	0.0262	0.0296	79.0	53-114	12.2	20	WG596579
Pyrene	mg/kg	0.0283	0.0294	86.0	53-121	3.76	20	WG596579
2-Fluorobiphenyl				74.94	34-129			WG596579
Nitrobenzene-d5				78.31	14-141			WG596579
p-Terphenyl-d14				97.14	25-139			WG596579
TPH (GC/FID) High Fraction	ppm	54.4	49.3	91.0	50-150	9.79	25	WG597332
o-Terphenyl				82.49	50-150			WG597332

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.225	0	.05	89.9	32-137	L578392-03	WG596238
Ethylbenzene	mg/kg	0.221	0	.05	88.6	10-150	L578392-03	WG596238
Toluene	mg/kg	0.231	0	.05	92.3	20-142	L578392-03	WG596238
Total Xylene	mg/kg	0.688	0	.15	91.8	16-141	L578392-03	WG596238
a,a,a-Trifluorotoluene(PID)					108.4	54-144		WG596238
TPH (GC/FID) Low Fraction	mg/kg	28.3	0	5.5	103.	55-109	L578392-03	WG596238
a,a,a-Trifluorotoluene(FID)					107.2	59-128		WG596238
Arsenic	mg/kg	54.4	6.10	50	96.6	75-125	L578413-10	WG596263
Barium	mg/kg	171.	135.	50	72.0*	75-125	L578413-10	WG596263
Cadmium	mg/kg	71.8	23.0	50	97.6	75-125	L578413-10	WG596263
Chromium	mg/kg	65.4	16.3	50	98.2	75-125	L578413-10	WG596263
Copper	mg/kg	78.4	27.3	50	102.	75-125	L578413-10	WG596263
Lead	mg/kg	90.2	36.0	50	108.	75-125	L578413-10	WG596263
Nickel	mg/kg	53.8	10.4	50	86.8	75-125	L578413-10	WG596263

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Selenium	mg/kg	43.1	0	50	86.2	75-125	L578413-10	WG596263
Silver	mg/kg	46.3	0	50	92.6	75-125	L578413-10	WG596263
Zinc	mg/kg	1310	1200	50	220.*	75-125	L578413-10	WG596263
TPH (GC/FID) High Fraction	ppm	37.9	0	60	63.2	50-150	L578301-01	WG596050
o-Terphenyl					72.18	50-150		WG596050
Mercury	mg/kg	0.420	0.0530	.125	147.*	70-130	L578550-01	WG596516
Chromium, Hexavalent	mg/kg	8.96	0	20	44.8*	50-150	L577984-05	WG596075
1-Methylnaphthalene	mg/kg	0.259	0.140	.033	361.*	25-155	L578550-01	WG596579
2-Chloronaphthalene	mg/kg	0.0231	0	.033	69.9	31-153	L578550-01	WG596579
2-Methylnaphthalene	mg/kg	0.469	0.270	.033	604.*	22-172	L578550-01	WG596579
Acenaphthene	mg/kg	0.0296	0	.033	89.7	43-133	L578550-01	WG596579
Acenaphthylene	mg/kg	0.0289	0	.033	87.6	42-146	L578550-01	WG596579
Anthracene	mg/kg	0.0294	0	.033	89.0	38-153	L578550-01	WG596579
Benzo(a)anthracene	mg/kg	0.0365	0.0180	.033	56.0	31-142	L578550-01	WG596579
Benzo(a)pyrene	mg/kg	0.0334	0.0180	.033	46.7	26-152	L578550-01	WG596579
Benzo(b)fluoranthene	mg/kg	0.0447	0.0270	.033	53.6	10-188	L578550-01	WG596579
Benzo(g,h,i)perylene	mg/kg	0.0103	0	.033	31.3	10-176	L578550-01	WG596579
Benzo(k)fluoranthene	mg/kg	0.0332	0.0110	.033	67.2	22-163	L578550-01	WG596579
Chrysene	mg/kg	0.0377	0.0200	.033	53.6	26-146	L578550-01	WG596579
Dibenz(a,h)anthracene	mg/kg	0.0100	0	.033	30.4	10-160	L578550-01	WG596579
Fluoranthene	mg/kg	0.0557	0.0340	.033	65.6	23-160	L578550-01	WG596579
Fluorene	mg/kg	0.0292	0	.033	88.5	44-143	L578550-01	WG596579
Indeno(1,2,3-cd)pyrene	mg/kg	0.0123	0	.033	37.2	10-157	L578550-01	WG596579
Naphthalene	mg/kg	0.304	0.160	.033	436.*	22-156	L578550-01	WG596579
Phenanthrene	mg/kg	0.107	0.0570	.033	150.	23-164	L578550-01	WG596579
Pyrene	mg/kg	0.0406	0.0250	.033	47.1	12-170	L578550-01	WG596579
2-Fluorobiphenyl					70.38	34-129		WG596579
Nitrobenzene-d5					77.59	14-141		WG596579
p-Terphenyl-d14					78.42	25-139		WG596579

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.204	0.225	81.4	32-137	9.86	39	L578392-03	WG596238
Ethylbenzene	mg/kg	0.188	0.221	75.2	10-150	16.4	44	L578392-03	WG596238
Toluene	mg/kg	0.195	0.231	78.0	20-142	16.7	42	L578392-03	WG596238
Total Xylene	mg/kg	0.586	0.688	78.1	16-141	16.1	46	L578392-03	WG596238
a,a,a-Trifluorotoluene(PID)				108.8	54-144				WG596238
TPH (GC/FID) Low Fraction	mg/kg	29.1	28.3	106.	55-109	3.05	20	L578392-03	WG596238
a,a,a-Trifluorotoluene(FID)				107.7	59-128				WG596238
Arsenic	mg/kg	50.4	54.4	88.6	75-125	7.63	20	L578413-10	WG596263
Barium	mg/kg	169.	171.	68.0*	75-125	1.18	20	L578413-10	WG596263
Cadmium	mg/kg	69.1	71.8	92.2	75-125	3.83	20	L578413-10	WG596263
Chromium	mg/kg	63.2	65.4	93.8	75-125	3.42	20	L578413-10	WG596263
Copper	mg/kg	74.7	78.4	94.8	75-125	4.83	20	L578413-10	WG596263
Lead	mg/kg	82.9	90.2	93.8	75-125	8.43	20	L578413-10	WG596263
Nickel	mg/kg	52.2	53.8	83.6	75-125	3.02	20	L578413-10	WG596263
Selenium	mg/kg	41.3	43.1	82.6	75-125	4.27	20	L578413-10	WG596263
Silver	mg/kg	44.1	46.3	88.2	75-125	4.87	20	L578413-10	WG596263

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Zinc	mg/kg	1300	1310	200.*	75-125	0.766	20	L578413-10	WG596263
TPH (GC/FID) High Fraction	ppm	39.9	37.9	66.6	50-150	5.22	40	L578301-01	WG596050
o-Terphenyl				68.95	50-150				WG596050
Mercury	mg/kg	0.0937	0.420	16.3*	70-130	127.*	20	L578550-01	WG596516
Chromium, Hexavalent	mg/kg	9.68	8.96	48.4*	50-150	7.73	20	L577984-05	WG596075
1-Methylnaphthalene	mg/kg	0.253	0.259	344.*	25-155	2.27	27	L578550-01	WG596579
2-Chloronaphthalene	mg/kg	0.0254	0.0231	77.1	31-153	9.84	22	L578550-01	WG596579
2-Methylnaphthalene	mg/kg	0.462	0.469	583.*	22-172	1.45	29	L578550-01	WG596579
Acenaphthene	mg/kg	0.0313	0.0296	95.0	43-133	5.73	26	L578550-01	WG596579
Acenaphthylene	mg/kg	0.0314	0.0289	95.3	42-146	8.37	22	L578550-01	WG596579
Anthracene	mg/kg	0.0336	0.0294	102.	38-153	13.6	27	L578550-01	WG596579
Benzo(a)anthracene	mg/kg	0.0382	0.0365	61.1	31-142	4.57	31	L578550-01	WG596579
Benzo(a)pyrene	mg/kg	0.0358	0.0334	54.0	26-152	6.91	32	L578550-01	WG596579
Benzo(b)fluoranthene	mg/kg	0.0458	0.0447	57.1	10-188	2.51	33	L578550-01	WG596579
Benzo(g,h,i)perylene	mg/kg	0.0133	0.0103	40.2	10-176	25.1	30	L578550-01	WG596579
Benzo(k)fluoranthene	mg/kg	0.0357	0.0332	74.9	22-163	7.36	29	L578550-01	WG596579
Chrysene	mg/kg	0.0397	0.0377	59.8	26-146	5.28	30	L578550-01	WG596579
Dibenz(a,h)anthracene	mg/kg	0.0130	0.0100	39.4	10-160	25.7	39	L578550-01	WG596579
Fluoranthene	mg/kg	0.0604	0.0557	80.0	23-160	8.15	22	L578550-01	WG596579
Fluorene	mg/kg	0.0316	0.0292	95.7	44-143	7.85	23	L578550-01	WG596579
Indeno(1,2,3-cd)pyrene	mg/kg	0.0152	0.0123	46.0	10-157	21.2	40	L578550-01	WG596579
Naphthalene	mg/kg	0.295	0.304	409.*	22-156	3.02	27	L578550-01	WG596579
Phenanthrene	mg/kg	0.108	0.107	155.	23-164	1.54	25	L578550-01	WG596579
Pyrene	mg/kg	0.0422	0.0406	52.1	12-170	3.93	24	L578550-01	WG596579
2-Fluorobiphenyl				75.98	34-129				WG596579
Nitrobenzene-d5				90.24	14-141				WG596579
p-Terphenyl-d14				91.97	25-139				WG596579

Batch number / Run number / Sample number cross reference

WG596238: R2198953: L578450-01 07 08
WG596050: R2199213: L578450-01 07
WG596263: R2199273: L578450-01 02 03 04 05 06 07 08
WG596516: R2200496: L578450-01 07 08
WG596289: R2200555: L578450-01 07 08
WG596466: R2200796: L578450-01 07 08
WG596075: R2201954: L578450-01 07 08
WG596347: R2202833: L578450-01 02 03 04 05 06 07 08
WG596776: R2203133: L578450-01 07 08
WG596579: R2203957: L578450-01 07 08
WG597332: R2207493: L578450-08

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Rangely, CO 81648-3600

Quality Assurance Report
Level II

L578450

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Est. 1970

June 13, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

Report Summary

Monday June 18, 2012

Report Number: L578737

Samples Received: 06/05/12

Client Project:

Description: Earthen Pit Closure Project

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

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
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,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES1-06042012
Collected By : KHR
Collection Date : 06/04/12 10:45

ESC Sample # : L578737-01

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.50	mg/kg	8021/8015	06/06/12	1000
Toluene	10.	5.0	mg/kg	8021/8015	06/06/12	1000
Ethylbenzene	7.6	0.50	mg/kg	8021/8015	06/06/12	1000
Total Xylene	140	1.5	mg/kg	8021/8015	06/06/12	1000
TPH (GC/FID) Low Fraction	3100	100	mg/kg	GRO	06/06/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	06/06/12	1000
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	06/06/12	1000
TPH (GC/FID) High Fraction	2500	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	52.4		% Rec.	3546/DRO	06/13/12	20

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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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES2-06042012
Collected By : KHR
Collection Date : 06/04/12 10:50

ESC Sample # : L578737-02

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/06/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/06/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/06/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/06/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/06/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	06/06/12	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	06/06/12	5
TPH (GC/FID) High Fraction	4.3	4.0	mg/kg	3546/DRO	06/13/12	1
Surrogate recovery(%)						
o-Terphenyl	57.5		% Rec.	3546/DRO	06/13/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES3-06042012
Collected By : KHR
Collection Date : 06/04/12 10:55

ESC Sample # : L578737-03

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	17.	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	90.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	20.	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	250	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	6000	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	3000	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	28.0		% Rec.	3546/DRO	06/13/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES4-06042012
Collected By : KHR
Collection Date : 06/04/12 11:00

ESC Sample # : L578737-04

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	4.9	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	58.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	17.	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	220	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	5000	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.0		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	2800	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	50.6		% Rec.	3546/DRO	06/13/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES5-06042012
Collected By : KHR
Collection Date : 06/04/12 11:05

ESC Sample # : L578737-05

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.95	0.50	mg/kg	8021/8015	06/07/12	1000
Toluene	12.	5.0	mg/kg	8021/8015	06/07/12	1000
Ethylbenzene	9.1	0.50	mg/kg	8021/8015	06/07/12	1000
Total Xylene	150	1.5	mg/kg	8021/8015	06/07/12	1000
TPH (GC/FID) Low Fraction	3600	100	mg/kg	GRO	06/07/12	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.4		% Rec.	8021/8015	06/07/12	1000
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/07/12	1000
TPH (GC/FID) High Fraction	2000	80.	mg/kg	3546/DRO	06/13/12	20
Surrogate recovery(%)						
o-Terphenyl	31.5		% Rec.	3546/DRO	06/13/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 18, 2012

Date Received : June 05, 2012
Description : Earthen Pit Closure Project
Sample ID : 7712-ES6-06042012
Collected By : KHR
Collection Date : 06/04/12 11:10

ESC Sample # : L578737-06

Site ID : DPU 7712

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.052	0.025	mg/kg	8021/8015	06/08/12	50
Toluene	BDL	0.25	mg/kg	8021/8015	06/08/12	50
Ethylbenzene	0.61	0.025	mg/kg	8021/8015	06/08/12	50
Total Xylene	2.0	0.075	mg/kg	8021/8015	06/08/12	50
TPH (GC/FID) Low Fraction	180	5.0	mg/kg	GRO	06/08/12	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.7		% Rec.	8021/8015	06/08/12	50
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	06/08/12	50
TPH (GC/FID) High Fraction	220	4.0	mg/kg	3546/DRO	06/18/12	1
Surrogate recovery(%)						
o-Terphenyl	60.4		% Rec.	3546/DRO	06/18/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L578737-01	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-03	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-04	WG596582	SAMP	o-Terphenyl	R2205858	J7
L578737-05	WG596582	SAMP	o-Terphenyl	R2205858	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

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.

Summary of Remarks For Samples Printed
06/18/12 at 15:22:36

TSR Signing Reports: 358
R5 - Desired TAT

Log all projects under the project codes with the project managers last name unless multiple project managers are listed.

Sample: L578737-01 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-02 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-03 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-04 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-05 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22
Sample: L578737-06 Account: ENCANRCO Received: 06/05/12 16:00 Due Date: 06/13/12 00:00 RPT Date: 06/18/12 15:22



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June 18, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG596531	06/06/12 19:00
Ethylbenzene	< .0005	mg/kg			WG596531	06/06/12 19:00
Toluene	< .005	mg/kg			WG596531	06/06/12 19:00
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596531	06/06/12 19:00
Total Xylene	< .0015	mg/kg			WG596531	06/06/12 19:00
a,a,a-Trifluorotoluene(FID)		% Rec.	98.75	59-128	WG596531	06/06/12 19:00
a,a,a-Trifluorotoluene(PID)		% Rec.	102.8	54-144	WG596531	06/06/12 19:00
Benzene	< .0005	mg/kg			WG596832	06/08/12 16:01
Ethylbenzene	< .0005	mg/kg			WG596832	06/08/12 16:01
Toluene	< .005	mg/kg			WG596832	06/08/12 16:01
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596832	06/08/12 16:01
Total Xylene	< .0015	mg/kg			WG596832	06/08/12 16:01
a,a,a-Trifluorotoluene(FID)		% Rec.	94.06	59-128	WG596832	06/08/12 16:01
a,a,a-Trifluorotoluene(PID)		% Rec.	100.9	54-144	WG596832	06/08/12 16:01
TPH (GC/FID) High Fraction	< 4	ppm			WG596582	06/11/12 21:03
o-Terphenyl		% Rec.	79.55	50-150	WG596582	06/11/12 21:03
TPH (GC/FID) High Fraction	< 4	ppm			WG598379	06/18/12 09:51
o-Terphenyl		% Rec.	77.58	50-150	WG598379	06/18/12 09:51

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0449	89.7	76-113	WG596531
Ethylbenzene	mg/kg	.05	0.0442	88.3	78-115	WG596531
Toluene	mg/kg	.05	0.0445	89.0	76-114	WG596531
Total Xylene	mg/kg	.15	0.134	89.2	81-118	WG596531
a,a,a-Trifluorotoluene(PID)				103.3	54-144	WG596531
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.75	105.	67-135	WG596531
a,a,a-Trifluorotoluene(FID)				103.8	59-128	WG596531
Benzene	mg/kg	.05	0.0416	83.2	76-113	WG596832
Ethylbenzene	mg/kg	.05	0.0421	84.2	78-115	WG596832
Toluene	mg/kg	.05	0.0415	83.1	76-114	WG596832
Total Xylene	mg/kg	.15	0.131	87.0	81-118	WG596832
a,a,a-Trifluorotoluene(PID)				101.1	54-144	WG596832
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.27	114.	67-135	WG596832
a,a,a-Trifluorotoluene(FID)				99.63	59-128	WG596832
TPH (GC/FID) High Fraction	ppm	60	38.7	64.6	50-150	WG596582
o-Terphenyl				64.71	50-150	WG596582
TPH (GC/FID) High Fraction	ppm	60	42.9	71.5	50-150	WG598379
o-Terphenyl				72.59	50-150	WG598379

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0444	0.0449	89.0	76-113	0.930	20	WG596531
Ethylbenzene	mg/kg	0.0438	0.0442	88.0	78-115	0.950	20	WG596531
Toluene	mg/kg	0.0438	0.0445	88.0	76-114	1.61	20	WG596531

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

June 18, 2012

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Total Xylene	mg/kg	0.132	0.134	88.0	81-118	1.18	20	WG596531
a,a,a-Trifluorotoluene(PID)				104.0	54-144			WG596531
TPH (GC/FID) Low Fraction	mg/kg	6.05	5.75	110.	67-135	5.08	20	WG596531
a,a,a-Trifluorotoluene(FID)				104.7	59-128			WG596531
Benzene	mg/kg	0.0429	0.0416	86.0	76-113	3.07	20	WG596832
Ethylbenzene	mg/kg	0.0426	0.0421	85.0	78-115	1.26	20	WG596832
Toluene	mg/kg	0.0424	0.0415	85.0	76-114	2.10	20	WG596832
Total Xylene	mg/kg	0.133	0.131	88.0	81-118	1.65	20	WG596832
a,a,a-Trifluorotoluene(PID)				100.4	54-144			WG596832
TPH (GC/FID) Low Fraction	mg/kg	6.47	6.27	118.	67-135	3.18	20	WG596832
a,a,a-Trifluorotoluene(FID)				100.2	59-128			WG596832
TPH (GC/FID) High Fraction	ppm	49.6	38.7	83.0	50-150	24.7*	23	WG596582
o-Terphenyl				82.79	50-150			WG596582

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
Benzene	mg/kg	0.215	0	.05	85.9	32-137	L578737-02	WG596531
Ethylbenzene	mg/kg	0.205	0	.05	82.1	10-150	L578737-02	WG596531
Toluene	mg/kg	0.212	0	.05	84.8	20-142	L578737-02	WG596531
Total Xylene	mg/kg	0.617	0	.15	82.3	16-141	L578737-02	WG596531
a,a,a-Trifluorotoluene(PID)					103.0	54-144		WG596531
TPH (GC/FID) Low Fraction	mg/kg	26.2	0	5.5	95.2	55-109	L596737-02	WG596531
a,a,a-Trifluorotoluene(FID)					102.6	59-128		WG596531
Benzene	mg/kg	0.211	0	.05	84.4	32-137	L579203-01	WG596832
Ethylbenzene	mg/kg	0.215	0	.05	86.1	10-150	L579203-01	WG596832
Toluene	mg/kg	0.219	0	.05	87.6	20-142	L579203-01	WG596832
Total Xylene	mg/kg	0.678	0	.15	90.3	16-141	L579203-01	WG596832
a,a,a-Trifluorotoluene(PID)					101.9	54-144		WG596832
TPH (GC/FID) Low Fraction	mg/kg	29.8	0	5.5	108.	55-109	L579203-01	WG596832
a,a,a-Trifluorotoluene(FID)					99.16	59-128		WG596832
TPH (GC/FID) High Fraction	ppm	37.3	5.58	60	52.9	50-150	L578835-01	WG596582
o-Terphenyl					48.19*	50-150		WG596582

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.213	0.215	85.2		32-137	0.868	39	L578737-02	WG596531
Ethylbenzene	mg/kg	0.198	0.205	79.2		10-150	3.54	44	L578737-02	WG596531
Toluene	mg/kg	0.204	0.212	81.7		20-142	3.82	42	L578737-02	WG596531
Total Xylene	mg/kg	0.596	0.617	79.5		16-141	3.45	46	L578737-02	WG596531
a,a,a-Trifluorotoluene(PID)				103.1		54-144				WG596531
TPH (GC/FID) Low Fraction	mg/kg	26.5	26.2	96.3		55-109	1.16	20	L596737-02	WG596531
a,a,a-Trifluorotoluene(FID)				102.3		59-128				WG596531
Benzene	mg/kg	0.210	0.211	84.0		32-137	0.560	39	L579203-01	WG596832
Ethylbenzene	mg/kg	0.209	0.215	83.8		10-150	2.67	44	L579203-01	WG596832
Toluene	mg/kg	0.210	0.219	83.9		20-142	4.22	42	L579203-01	WG596832
Total Xylene	mg/kg	0.651	0.678	86.8		16-141	3.95	46	L579203-01	WG596832
a,a,a-Trifluorotoluene(PID)				99.58		54-144				WG596832

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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EnCana Oil & Gas - Rangely, CO
Blake Ford and Kate Ramsay
1125 Escalante Drive

Rangely, CO 81648-3600

Quality Assurance Report
Level II

L578737

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 18, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	30.2	29.8	110.*	55-109	1.34	20	L579203-01	WG596832
a,a,a-Trifluorotoluene(FID)				99.34	59-128				WG596832
TPH (GC/FID) High Fraction	ppm	38.4	37.3	54.6	50-150	2.73	40	L578835-01	WG596582
o-Terphenyl				48.23*	50-150				WG596582

Batch number /Run number / Sample number cross reference

WG596531: R2201653: L578737-01 02 03 04 05
WG596832: R2203713: L578737-06
WG596582: R2205858: L578737-01 02 03 04 05
WG598379: R2215634: L578737-06

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

June 18, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

APPENDIX B
SOIL BORING LITHOLOGIC LOGS



AST
○↑
N

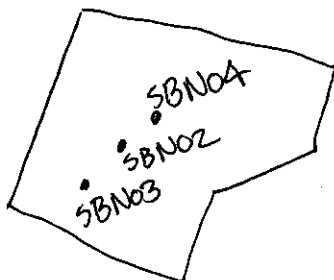
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBNO1/SVENO1		Project:	7712
Date:	8.7.13		Project Number:	033412042.11
Logged By:	Chris McKisson		Drilled By:	Precision Sampling
Drilling Method:	Hollow Stem Auger		Sampling Method:	Split Spoon
Seal:	bentonite		Grout:	NA
Elevation:	7,249 feet		Detector:	PID
Gravel Pack:	Silica sand		Diameter:	2"
Casing Type:	PVC		Length:	20
Screen Type:	PVC		Hole Diameter:	8"
Slot:	0.010		Depth to Liquid:	
Diameter:	2"		Total Depth:	42'
Length:	20		Depth to Water:	

Penetration Resistance	Staining?	Odor?	Moisture Content	PID (ppm)	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
						0				
						2				
11/17/8/9	N	N	dry	0.1	1222	4	X		brown, silty sand, dry no odor	
						6	X			
						8				
5/10/6/7	N	N	dry	0.5	1230	10	X			
						12				
						14				
14/11/9/16	N	N	dry	0.4	1240	16	X		light brown/gray, sandstone, weathered/fragmented	
						18				
						20				
4/4/3/5	N	N	dry	0.0	1250	22	X		brown/gray, silty sand and gravel, shale fragments.	
						24				
						26	X			
6/6/6/7	N	N	dry	0.8	1300	28				
						30				
						32	X			
						34				
						36	X			
5/5/5/7	N	N	dry	0.0	1330	38				
						40				
5/5/6/7	N	N	dry	0.1	1350	42	X		TD=42'	

Location Map:



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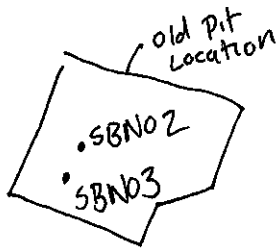
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBNO2	Project:	7712
Date:	8/7/13 + 8/8/13	Project Number:	033412042
Logged By:	CM	Drilled By:	Precision Sampling
Drilling Method:	Hollow Stem	Sampling Method:	Split Spoon
Elevation:	7249	Detector:	P11
Depth to Liquid:		Depth to Water:	
Total Depth:	45'	Hole Diameter:	8"
Grout:			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			
					4			
3/3/5/4	dry	2746	yes	1510	8			Black, silty sand, shale frags, gravelly odor
3/3/5/7	dry	581	no	1520	12			Brown, silty sand and gravel, odor
6/4/7/12	dry	432	no	1525	16			
					20			
9/3/4/3	dry	211	no	1535	24			
4/3/3/2	slight	141	yes	1542	28			Brown/gray, sandy clay w/ gravel, odor (degraded), shale fragments
3/4/3/4	slight	255	yes	1550	32			
7/11/8/8	slight	445	yes	1600	36			
					40			
5/11/13/10	slight	4753	yes	0900	44			
					48			
					52			
					56			
					60			
					64			
					70			

TD = 45'. Crew lost 10' of center rod down hole. Abandoned borehole and stepped out

Location Map:



N



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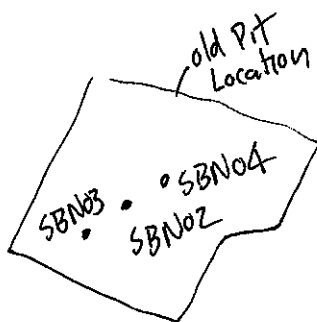
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBNO3	Project:	7712
Date:	8/8/13	Project Number:	033412042
Logged By:	CM	Drilled By:	Precision Sampling
Drilling Method:	Hollow Stem	Sampling Method:	Split Spoon
Elevation:	7249	Detector:	PID
Depth to Liquid:		Depth to Water:	
Total Depth:		32'	
Hole Diameter:		8"	
Grout:			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			
					4			
					8			
					12			
					16			
					20			
					24			
					28			
					32			
					36			
					40			
					44			
					48			
					52			
					56			
					60			
					64			
					70			

Brown, silty sand and gravel
 Stepped out ~5' north to
 get back into impacts.
 The borhole was backfilled w/
 cuttings and bentonite.

Location Map:



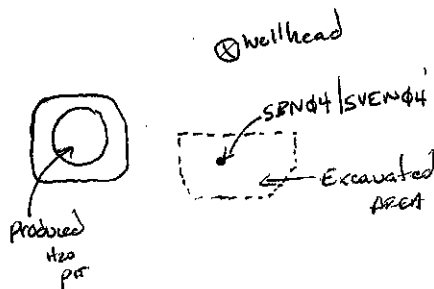
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBN04	Project:	7712
Date:	8/8/13	Project Number:	033412042
Logged By:	CM	Drilled By:	Precision Sampling
Drilling Method:	Hollow Stem	Sampling Method:	Split Spoon
Elevation:	7249	Detector:	PID
Depth to Liquid:		Depth to Water:	
Total Depth:	60'	Hole Diameter:	8"
Grout:			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			
					4			
					8			
					12			
					16			
					20			
					24			
					28			
					32			
5/7/7/7	dry	3,873	yes	1255	36			Gray/Black, silty sand and gravel, odor
3/3/3/5	slight	3,874	yes	1315	40			Black, clayey silt, very fine, odor
14/10/9/10	dry	3,780	N	1330	44			Brown, sand, gravelly, odor
5/8/20/14	slight	3,941	N	1350	48			Light Brown, gravelly sand, odor
2/3/10/14	slight	3,876	N	1415	52			-The borhole will be advanced farther when crew returns w/ more auger.
6/7/14/8	slight	3,792	N	1440	56			
					60			
					64			
					70			

Location Map: 7712



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SBND4 / SVND4	Project: Rangely Site Assessment
Date: 8/12/13	Project Number: 033412042
Logged By:	Drilled By: Precision Sampling
Elevation:	Drilling Method: Hollow Stem Auger
Detector: PID	Sampling Method: Split Spoon
Gravel Pack: Silica Sand	Seal: Bentonite
Casing Type: PVC	Grout: NA
Slot: 0.020	Hole Diameter: 8"
Screen Type: PVC	Depth to Liquid: NA
Diameter: 2"	Length: 8.8"
Diameter: 2"	Length: 60'
Total Depth: 68.8"	Depth to Water: NA

Penetration Resistance	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Soil/Rock Type	Lithology/Remarks	Well Completion
				0			
				4			
				8			
				12			
				16			
				20			
				24			
				28			
				32			
				36			
				40			
				44	sc/cl		
				48			
				52			
				56			
				60	sp		
				64			
9, 9, 12, 14	8240 ppm		1400	68			
100/1	BS ppm	NO	1455	72			

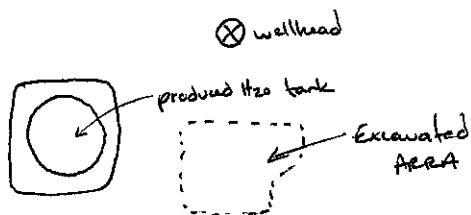
Boring started on 8/8/13 -
 crew returned w/ more auger
 to continue advancement of
 boring.

65'-67' - brown thick clay w/ interbedded
 sand lenses, odor, dry, interbedded
 pebbles, angular-subangular, 1-5 mm,
 sandstone lenses, e end of split spoon -
 well sorted, well rounded, dry
 -submer

70'-72' - thick interbedded sandstone
 dense, odor, dry - confining layer
 @ 68.8' bgs

Location Map: 7712

1N



• SBSΦ1



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SBSΦ1	Project: Rangely Site Assessments
Date: 8/13/13	Project Number: 33412042
Logged By: Dustin Held	Drilled By: Precision Sampling
Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Hole Diameter: 8"	Grout: NA

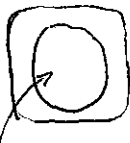
Elevation:	Detector: PID	Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Depth to Liquid: NA	Depth to Water: NA	Total Depth: 62	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			
					4		SL/CL	0-40' - light brown, fine silty sands, well / sub-rounded, intermixed limestone pieces, no odor clayey, dry
					8			
					12			
					16			
					20			
					24			
					28			
					32			
					36			
7.6, 7.10					40			40-42' light brown, fine silty sands, calcite lenses, dry, no odor, oxides, angular calcite frags.
11.10, 13.14	DET	34 ppm	NO	6945	44			
24.18, 29.28		85 ppm		1000	48		SL/CL	45-47' - same as above (Rock descrip) - no odor
		62 ppm		1100	52			50-52' - dark brown, fine silty sands, calcite lenses, intermixed sandstone frags. no odor, dry, dense clayey
22.19, 19.31	DET	39.9 ppm	NO	1135	56			55-57' - light brown, fine silty sands w/ interbedded sandstone lenses, very fine grained sandstone, well sorted, angular - sub angular, no odor, calcite lenses - <u>submit</u>
13.13, 28.25		1.9 ppm		1205	60			60-62' light brown, fine silty sands, w/ calcite lenses oxides, dry w/ angular - sub angular sandstone frags. - <u>submit</u>
					64		SL/CL	
					68			
					72			
					76			
					80			

Location Map: 7712

1st

⊗ wellhead



produced h2o tank



• SBE41



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

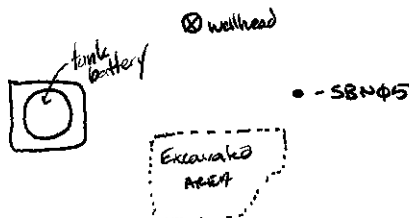
Boring/Well Number:	Project:
SBE41	Rangely Site Assessments
Date:	Project Number:
8/13/13	33412042
Logged By:	Drilled By:
Dustin Held	Precision Sampling
Drilling Method:	Sampling Method:
Hollow Stem Auger	Split Spoon
Hole Diameter:	Grout:
8"	NA

Elevation:	Detector:	Drilling Method:	Sampling Method:
	PID	Hollow Stem Auger	Split Spoon
Depth to Liquid:	Depth to Water:	Total Depth:	Hole Diameter:
NA	NA	69'	8"

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			5'-7' light brown, fine silty sands, clayey, dry, well rounded / rounded sandstone fragments, no odor
9.8, 8.9		0.0ppm		1325	4		sc/cr	10'-12' brown, fine silty sands dense, dry, oxides, angular sub angular, sandstone fragments
6.4, 5.8		0.0ppm	NO	1335	8			15'-22' brown fine gr. silty sands, w/ interbedded sandstone lenses, oxides, calcite lenses, sub-angular sandstone frags. - no odor
2.3, 4.5	DR1	0.0ppm		1340	12			25'-32' - brown, fine gr. silty sands, loose, subangular angular, no odor, sandstone lenses
9.8, 9.8		0.0ppm		1350	16			35'-42' - brown, fine silty sands, oxides, angular - sub angular sandstone frags. light clay, no odor, dry
9.12, 7.8		0.0ppm		1400	20		sc/cr	45'-62' brown, fine gr. silty sands interbed w/ clay lenses (thick), calcite lenses/nodules, angular sub angular sandstone pieces, hydrated, no odor
6.5, 8.10		0.0ppm	NO	1410	24			65'-71' dark brown, thick clay, dense, fine gr. silty sands, organics (woodchips), oxides hydrated, calcite lenses, no odor
7.9, 7.6	DR1	0.0ppm		1425	28			- submit
5.5, 7.9		0.0ppm		1435	32		sc/cr	
9.6, 3.3		2.2ppm		1455	36			
9.8, 8.14		1.6ppm		1510	40			
3.10, 9.9	Hydrated	25.2ppm		1540	44			
3.11, 10.10		18.5ppm	NO	1600	48			
5.7, 10.13		26.1ppm		1620	52			
5.6, 9.11		20.1ppm		1640	56			
					60			
					64			
					68			
					72			
					76			
					80			

Location Map: 712

1N



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SBN#5	Project: Rangely Site Assessment
Date: 8/15/13	Project Number: 033412042
Logged By: Dustin Held	Drilled By: Precision Sampling
Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Gravel Pack: Silica Sand	Seal: Bentonite
Casing Type: PVC	Grout: NA
Screen Type: PVC	Diameter: 2"
Slot: 0.020	Length: 30'
	Hole Diameter: 8"
	Depth to Liquid: NA
	Total Depth: 70'
	Depth to Water: NA

Penetration Resistance	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Soil/Rock Type	Lithology/Remarks	Well Completion
				0			
				4	SC/CL	0-40' - brown, fine silty sands, interbedded clay lenses, no odor, hydrated, dense, calcite lenses	
				8			
				12			
				16			
				20			
				24			
				28			
				32			
				36			
3.6 8.9	80.3 ppm	NO	1305	40			
				44	SC/CL	40-42' brown, fine gr. silty sand lenses, intermixed w/ silty clay lenses, oxides, calcite lenses, well rounded/ sorted sand lenses, odor	
				48		- Submit	
11.10 7.10	158 ppm	NO	1325	52		50-52' - Same as above (Rock descrip)	
				56		- odor	
				60			
6.5 7.12	87.2 ppm	NO	1400	64	SC/CL	60-62' - Same as above (Rock descrip)	
				68		- odor	
				72		70-72' - Same as above (Rock descrip)	
7.7 9.3	0.0 ppm	NO	1635			- no odor - Submit	

Location Map: 712

1N

produced H₂O tankSB#46
SB#45

Excavated Area



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB#46	Project: Rangely Site Assessments
Date: 8/11/13	Project Number: 33412042
Logged By: Dustin Held	Drilled By: Precision Sampling
Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Hole Diameter: 8"	Grout: NA

Elevation:

Detector:

PID

Depth to Liquid:

NA

Depth to Water:

NA

Total Depth:

70"

Hole Diameter:

8"

Grout:

NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			
					4		SC/CL	0-40' brown, fine silty sands interbedded w/ silty clay lenses, no odor, dense
					8			
					12			
					16			
					20			
					24			
					28			
					32			
					36			
4.3 5.0	DRY	0.0ppm	NO	1330	40		SC/CL	40-42' brown, fine gr. silty sandy clay lenses, w/ interbedded sandstone frags, no odor, dry oxides, calcite lens - submit
					44			
					48			
6.8 3.5	DRY	0.0ppm		1400	52			50-52' same as above (Rock descrip) - no odor
					56			
					60			
7.7 9.10	DRY	0.0ppm	NO	1450	64			60-62' same as above (Rock descrip) w/ limestone fragments, no odor
					68		SC/CL	
					72			70-72' same as above (Rock descrip) - no odor - submit
9.9 14.14	DRY	0.0ppm		1525	76			
					80			

produced the tank

Excavated AREA



Compliance • Engineering • Remediation
LT Environmental, Inc.
820 Megan Avenue, unit B
Rifle, Colorado 81623

Boring/Well Number: SBW01	Project: Rangely Site Assessments
Date: 8/16/13	Project Number: 33412042
Logged By: Dustin Held	Drilled By: Precision Sampling
Drilling Method: Hollow Stem Auger	Sampling Method: Split Spoon
Hole Diameter: 8"	Grout: NA

Elevation:		Detector:		Drilling Method:	Sampling Method:
		PID		Hollow Stem Auger	Split Spoon
Depth to Liquid:	Depth to Water:	Total Depth:	Hole Diameter:	Grout:	
NA	NA	76'	8"	NA	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Time	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0		s/c	0'-40' - brown, fine silty sands, interbedded w/ silty clay lenses, no odor, hydrated, dense
					4			
					8			
					12			
					16			
					20			
					24			
					28			
					32			
					36			
7.9 10.5	hydrated	0.9ppm	NO	1005	40		s/c	40'-42' - brown, fine gr. silty sand lenses, interbedded w/ silty clay lenses, well sorted, sub angular-angular, grains, no odor, hydrated - submit
					44			
					48			
10.10 7.9	hydrated	0.0ppm	NO		52			
					56			
7.5 8.13	hydrated	0.0ppm	NO	1110	60		s/c	50'-52' - brown, fine gr. silty sand lenses, interbedded silty clayey lenses, well sorted, angular-sub angular oxides, no odor, hydrated
					64			
6.16 8.10	hydrated	0.0ppm	NO	1145	68		s/c	60'-62' - brown, oxides, fine gr. silty sands, clay lenses angular-sub angular, no odor, wood chips (organics) calcite lenses, angular-sub angular sandstone frags
					72			
					76			
					80			

APPENDIX C
LABORATORY ANALYTICAL REPORTS





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

Est. 1970

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

Report Summary

Monday August 19, 2013

Report Number: L651142


Samples Received: 08/10/13

Client Project: 7712

Description: 7712

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:


Jarred 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

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

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

August 19, 2013

Date Received : August 10, 2013
Description : 7712
Sample ID : 080713-7712 SBN01 40-42
Collected By : Chris McKisson
Collection Date : 08/07/13 13:50

ESC Sample # : L651142-01

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/13/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/13/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/13/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/13/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/13/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	8021/8015	08/13/13	5
a,a,a-Trifluorotoluene(PID)	99.0		% Rec.	8021/8015	08/13/13	5
TPH (GC/FID) High Fraction	58.	4.0	mg/kg	8015D/DRO	08/13/13	1
Surrogate recovery(%)						
o-Terphenyl	86.2		% Rec.	8015D/DRO	08/13/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/16/13 08:36 Revised: 08/19/13 08:00



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REPORT OF ANALYSIS

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

August 19, 2013

Date Received : August 10, 2013
Description : 7712
Sample ID : 080813-7712 SBN02 40-42
Collected By : Chris McKisson
Collection Date : 08/08/13 09:00

ESC Sample # : L651142-02

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.24	0.025	mg/kg	8021/8015	08/16/13	50
Toluene	0.36	0.25	mg/kg	8021/8015	08/16/13	50
Ethylbenzene	1.9	0.025	mg/kg	8021/8015	08/16/13	50
Total Xylene	22.	0.30	mg/kg	8021/8015	08/16/13	200
TPH (GC/FID) Low Fraction	530	20.	mg/kg	GRO	08/16/13	200
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	08/16/13	200
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	08/16/13	50
TPH (GC/FID) High Fraction	1300	80.	mg/kg	8015D/DRO	08/13/13	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	8015D/DRO	08/13/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

August 19, 2013

Date Received : August 10, 2013
Description : 7712
Sample ID : 080813-7712 SBN04 60-62
Collected By : Chris McKisson
Collection Date : 08/08/13 14:40

ESC Sample # : L651142-03

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.025	mg/kg	8021/8015	08/15/13	50
Toluene	0.36	0.025	mg/kg	8021/8015	08/13/13	5
Ethylbenzene	0.23	0.0025	mg/kg	8021/8015	08/13/13	5
Total Xylene	14.	0.075	mg/kg	8021/8015	08/15/13	50
TPH (GC/FID) Low Fraction	510	5.0	mg/kg	GRO	08/15/13	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.6		% Rec.	8021/8015	08/13/13	5
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	08/13/13	5
TPH (GC/FID) High Fraction	850	20.	mg/kg	8015D/DRO	08/13/13	5
Surrogate recovery(%)						
o-Terphenyl	65.3		% Rec.	8015D/DRO	08/13/13	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/16/13 08:36 Revised: 08/19/13 08:00

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L651142-02	WG676408	SAMP	o-Terphenyl	R2778522	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

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.



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

Report Summary

Friday September 06, 2013

Report Number: L652065


Samples Received: 08/15/13

Client Project: 7712

Description: 7712

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:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

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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

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REPORT OF ANALYSIS

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

September 06, 2013

Date Received : August 15, 2013
Description : 7712
Sample ID : 081213-7712 (SBN04) 65-67FT
Collected By : Dustin Held
Collection Date : 08/12/13 14:00

ESC Sample # : L652065-01

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.13	0.050	mg/kg	8021/8015	08/19/13	100
Toluene	3.3	0.50	mg/kg	8021/8015	08/19/13	100
Ethylbenzene	0.78	0.050	mg/kg	8021/8015	08/19/13	100
Total Xylene	18.	0.15	mg/kg	8021/8015	08/19/13	100
TPH (GC/FID) Low Fraction	270	10.	mg/kg	GRO	08/19/13	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	08/19/13	100
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	08/19/13	100
TPH (GC/FID) High Fraction	360	20.	mg/kg	8015D/DRO	08/20/13	5
Surrogate recovery(%)						
o-Terphenyl	70.6		% Rec.	8015D/DRO	08/20/13	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/20/13 11:35 Revised: 09/06/13 13:19



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REPORT OF ANALYSIS

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

September 06, 2013

Date Received : August 15, 2013
Description : 7712
Sample ID : 081313-7712 (SBS01) 55-57FT
Collected By : Dustin Held
Collection Date : 08/13/13 11:35

ESC Sample # : L652065-02

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0057	0.0025	mg/kg	8021/8015	08/16/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/16/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/16/13	5
Total Xylene	0.0085	0.0075	mg/kg	8021/8015	08/16/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/16/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	08/16/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	08/16/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/19/13	1
Surrogate recovery(%)						
o-Terphenyl	136.		% Rec.	8015D/DRO	08/19/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

September 06, 2013

Date Received : August 15, 2013
Description : 7712
Sample ID : 081313-7712 (SBS01) 60-62FT
Collected By : Dustin Held
Collection Date : 08/13/13 12:05

ESC Sample # : L652065-03

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/19/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/19/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/19/13	5
Total Xylene	0.0077	0.0075	mg/kg	8021/8015	08/19/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/19/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	08/19/13	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	08/19/13	5
TPH (GC/FID) High Fraction	140	4.0	mg/kg	8015D/DRO	08/16/13	1
Surrogate recovery(%)						
o-Terphenyl	108.		% Rec.	8015D/DRO	08/16/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

September 06, 2013

Date Received : August 15, 2013
Description : 7712
Sample ID : 081313-7712 (SBE01) 65-67FT
Collected By : Dustin Held
Collection Date : 08/13/13 16:20

ESC Sample # : L652065-04

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/16/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/16/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/16/13	5
Total Xylene	0.0088	0.0075	mg/kg	8021/8015	08/16/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/16/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	08/16/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	08/16/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/17/13	1
Surrogate recovery(%)						
o-Terphenyl	94.0		% Rec.	8015D/DRO	08/17/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/20/13 11:35 Revised: 09/06/13 13:19



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REPORT OF ANALYSIS

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

September 06, 2013

Date Received : August 15, 2013
Description : 7712
Sample ID : 081313-7712 (SBE01) 69-71FT
Collected By : Dustin Held
Collection Date : 08/13/13 16:40

ESC Sample # : L652065-05

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/16/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/16/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/16/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/16/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/16/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	08/16/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	08/16/13	5
TPH (GC/FID) High Fraction	7.2	4.0	mg/kg	8015D/DRO	08/17/13	1
Surrogate recovery(%)						
o-Terphenyl	83.1		% Rec.	8015D/DRO	08/17/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/20/13 11:35 Revised: 09/06/13 13:19

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L652065-02	WG677307	SAMP	Benzene	R2782242	J3
	WG677307	SAMP	Toluene	R2782242	J3
	WG677307	SAMP	Ethylbenzene	R2782242	J3
	WG677307	SAMP	Total Xylene	R2782242	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

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)."

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- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



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Est. 1970

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

Report Summary

Thursday December 19, 2013

Report Number: L653262


Samples Received: 08/21/13

Client Project: 7712

Description: 7712

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:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
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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

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Est. 1970

REPORT OF ANALYSIS

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

December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081513-7712 SBN05 50-52FT
Collected By :
Collection Date : 08/15/13 13:25

ESC Sample # : L653262-01

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0050	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	0.039	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	0.060	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	1.0	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	93.9		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081513-7712 SBN05 70-72FT
Collected By :
Collection Date : 08/15/13 16:35

ESC Sample # : L653262-02

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	102.		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081613-7712 SBN06 40-42FT
Collected By :
Collection Date : 08/16/13 10:05

ESC Sample # : L653262-03

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	110.		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081613-7712 SBN06 70-72FT
Collected By :
Collection Date : 08/16/13 11:45

ESC Sample # : L653262-04

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.1		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	101.		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081613-7712 SBW01 40-42FT
Collected By :
Collection Date : 08/16/13 13:30

ESC Sample # : L653262-05

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.7		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	5.0	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	99.9		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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December 19, 2013

Date Received : August 21, 2013
Description : 7712
Sample ID : 081613-7712 SBW01 70-72FT
Collected By :
Collection Date : 08/16/13 15:25

ESC Sample # : L653262-06

Site ID : 7712

Project # : 7712

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/23/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/23/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/23/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/23/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	8021/8015	08/23/13	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	08/23/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	08/27/13	1
Surrogate recovery(%)						
o-Terphenyl	90.6		% Rec.	8015D/DRO	08/27/13	1

BDL - Below Detection Limit

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