

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109



DE	ET	OE	ES

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry Information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 100185	4. Contact Name Charles Jensen	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: Encana Oil and Gas (USA)	Phone: 970-285-2735	
3. Address: 143 Diamond Ave City: Parachute State: CO Zip:81635	Fax: 970-285-2705	
5. API Number 05- 103-09821	OGCC Facility ID Number 316117	Survey Plat
6. Well/Facility Name: Cathedral Federal #22-12	7. Well/Facility Number 22-12	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): NWSW, Sec 22, 02S, 101W, 6th PM		Surface Eqpmt Diagram
9. County: Rio Blanco	10. Field Name: Cathedral Federal Unit	Technical Info Page
11. Federal, Indian or State Lease Number: 44694		Other NOC

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)			
Change of Surface Footage from Exterior Section Lines:		FNL/FSL	FEL/FWL
Change of Surface Footage to Exterior Section Lines:			
Change of Bottomhole Footage from Exterior Section Lines:			
Change of Bottomhole Footage to Exterior Section Lines:			attach directional survey
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer			
Latitude	Distance to nearest property line	Distance to nearest bldg, public rd, utility or RR	
Longitude	Distance to nearest lease line	Is location in a High Density Area (rule 603b)?	Yes/No
Ground Elevation	Distance to nearest well same formation	Surface owner consultation date:	
GPS DATA:			
Date of Measurement PDOP Reading Instrument Operator's Name			
<input type="checkbox"/> CHANGE SPACING UNIT			<input type="checkbox"/> Remove from surface bond
Formation	Formation Code	Spacing order number	Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):		<input type="checkbox"/> CHANGE WELL NAME	
Effective Date:		From:	
Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual		To:	
		Effective Date:	
<input type="checkbox"/> ABANDONED LOCATION:		<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS	
Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No		Date well shut in or temporarily abandoned:	
Is site ready for Inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No		Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date Ready for Inspection:		MIT required if shut in longer than two years. Date of last MIT	
<input type="checkbox"/> SPUD DATE:		<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK			
*submit cbl and cement job summaries			
Method used	Cementing tool setting/perf depth	Cement volume	Cement top
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.			
Final reclamation will commence on approximately Final reclamation is completed and site is ready for inspection.			

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Report of Work Done	
Approximate Start Date:	Date Work Completed: 7/17/12	
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)		
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input checked="" type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other:	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Date: 6-24-13 Email: charles.jensen@Encana.com  
Print Name: Charles Jensen Title: Environmental Field Coordinator

COGCC Approved: Title: Date:

CONDITIONS OF APPROVAL, IF ANY:



## TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

- |   |                                    |
|---|------------------------------------|
| 1. OGCC Operator Number: <u>100185</u>  | API Number: <u>05-103-09821</u>    |
| 2. Name of Operator: <u>Encana Oil and Gas (USA)</u>                                  | OGCC Facility ID # <u>316117</u>   |
| 3. Well/Facility Name: <u>Cathedral Federal #22-12</u>                                | Well/Facility Number: <u>22-12</u> |
| 4. Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWSW, Sec 22, 02S, 101W, 6th PM</u> |                                    |

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

See Attached.

# NARRATIVE ATTACHMENT

## FORM 4 (SUNDRY NOTICE)

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### Culvert Pit Closure (CFU 22-12)

Document Date-06/24/2013

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#### Introduction

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 Sundry Notice to request final closure status for the culvert pit associated with the Cathedral Federal Unit #22-12 (COGCC facility #316117, COGCC remediation #7183). The site investigation was conducted by a third party contractor as authorized by Encana personnel and in accordance with the approved Form 27 previously submitted for this location. All samples were collected in accordance with Encana's Environmental Compliance Group's Sampling Procedures. The analytical results for the respective soil samples are provided in Table 1 and Attachment A of this submittal. The text below provides the details of the site investigation. For a visual description of the site please refer to Figures 1, 2, and 3 – Site Maps.

#### Assessment Activities

July 17, 2012 - The excavated soil surrounding the culvert pit was screened utilizing a photoionization detector (PID) prior to collecting soil samples for laboratory analysis. The culvert pit (steel ring, soil, cement bottom) was carefully removed using a trackhoe and placed onsite for later recycling or disposal. It should be noted that there was no liquid associated with the culvert pit during the time of removal. A grab sample was collected directly from the lowest point of the culvert pit after excavation was completed. In addition, four (4) grab samples were collected, one from each excavated sidewall. Approximately 105 cubic yards of excavated material was removed from the pit and laid out in ten (10) inches tall (65' x 45') lift for evaluation of impacts. The excavated material was sampled by way of a nine (9) point composite sample. Following analytical sample review, the excavated material was pushed back into the excavated area. Four (4) background samples were collected from approximately six (6) inches beneath the grounds surface for analysis with regards to arsenic.

#### Analytical Review

Sample results indicate that soil within the culvert pit footprint on Encana's Cathedral Federal Unit #22-12 well pad, had organic constituent concentrations of the excavated area and excavated material below or within COGCC Table 910-1. Analytical results indicated the excavated material exceeded COGCC Table 910-1 allowable concentrations for arsenic (5.1ppm), EC (4.50 mmhos/cm), and SAR (71). Though the arsenic concentration in the soil is above the allowable concentration identified in Table 910-1, the concentration is within the range of arsenic background values (1.1 – 9.4 ppm) in this area. Based on these results and footnote 1 to COGCC Table 910-1, Encana requests that the COGCC consider the higher range of background arsenic value(s) as the allowable concentration for this constituent.

Though the elevated SAR and EC levels of the returned spoil material is above the allowable levels identified in Table 910-1; it will be buried greater than three feet bgs of existing pad footprint material to assure that material with elevated levels of SAR and EC will have no adverse effect on future re-vegetation efforts in the area. Please see Table 1 and Attachment A for analytical results.



# NARRATIVE ATTACHMENT

## FORM 4 (SUNDRY NOTICE)

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### Culvert Pit Closure (CFU 22-12)

Document Date-06/24/2013

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#### Conclusion

Based on the site investigation and analytical results, the culvert pit associated with the Cathedral Federal Unit #22-12 is in compliance with the standards specified within COGCC Table 910-1. Encana respectfully requests that final closure be granted for the respective pit, COGCC remediation #7183.

#### NOTIFICATION OF COMPLETION

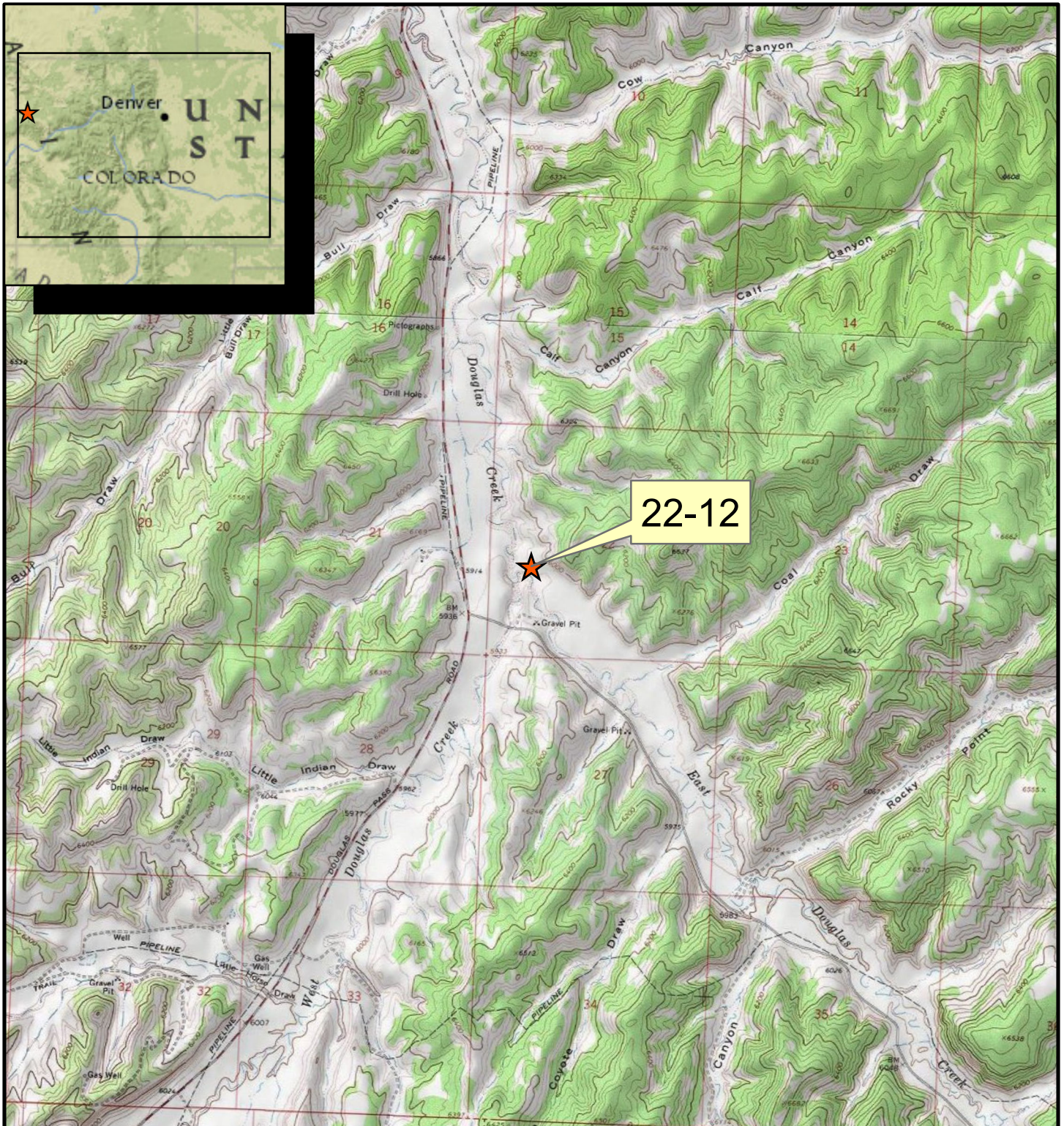
This Sundry Notice is also being submitted as the Notification of Completion for Remediation #7183. If the information provided here is satisfactory, please provide documentation of the closure of this remediation project.

#### ATTACHMENTS

Topographic Location Map (Figure 1)  
22-12 Aerial map with sample locations (Figure 2)  
22-12 Site Diagram of Excavation and sample locations (Figure 3)  
Laboratory Results Summary Table 1 – 22-12 Site Investigation (Table 1)  
Attachment A- Laboratory Reports







## Legend

★ 22-12 Site Location



0 0.25 0.5 1 1.5 Miles

**Rule** Engineering, LLC  
Solutions to Regulations for Industry



**22-12**  
**Site Location Map**

DATE: 9/06/2012 JG FILE: \\Encana\Figures\Rangely\22-12\120906 Site Location Map.pdf

FIGURE: 1



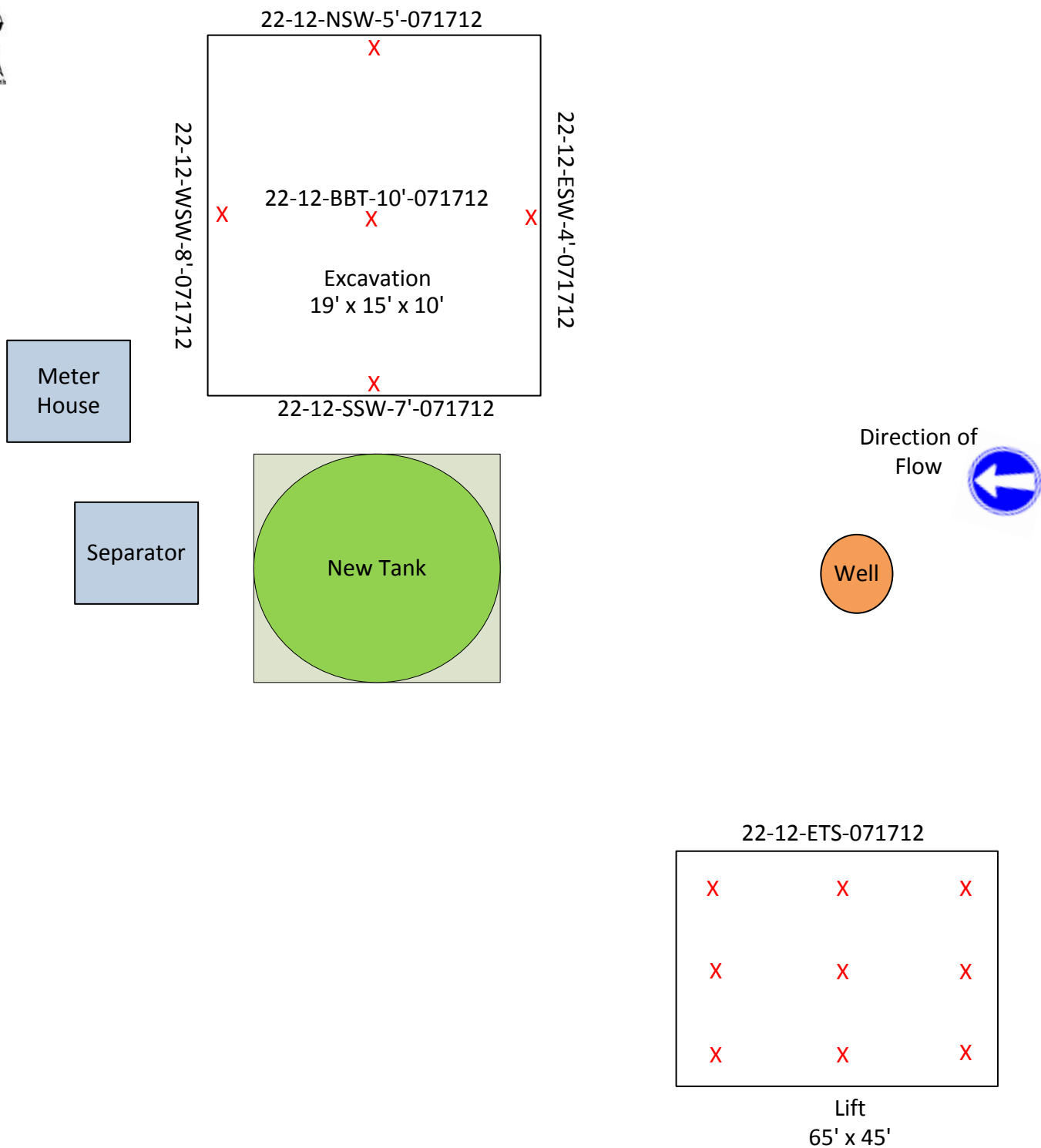


## Legend

★ Soil Sample Location

0 37.5 75 150 225 Feet





Legend  
X-Sample



Well: Figure 3. 22-12 Site Diagram

Area: Cathedral Federal Unit

Legal: NWSW, Sec 22, 02S, 101W, 6<sup>th</sup> PM

Date: 09/12/12

Drawn By: Brad Ward

Revision Date:

Scale: None





# Attachment A



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

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Est. 1970

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

## Report Summary

Friday August 03, 2012

Report Number: L585883


Samples Received: 07/19/12

Client Project: 22-12

Description: 22-12 Site Clearance

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

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.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-NSW-5-071712  
Collected By : SRM  
Collection Date : 07/17/12 12:50

ESC Sample # : L585883-01

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	5.4	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	52.5		% Rec.	3546/DRO	07/20/12	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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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-ESW-4-071712  
Collected By : SRM  
Collection Date : 07/17/12 13:00

ESC Sample # : L585883-02

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.4		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.0		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	08/03/12	1
Surrogate recovery(%)						
o-Terphenyl	73.2		% Rec.	3546/DRO	08/03/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-SSW-7-071712  
Collected By : SRM  
Collection Date : 07/17/12 13:10

ESC Sample # : L585883-03

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.1		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.5		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	9.6	4.0	mg/kg	3546/DRO	07/24/12	1
Surrogate recovery(%)						
o-Terphenyl	54.7		% Rec.	3546/DRO	07/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Fax (615) 758-5859

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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-WSW-8-071712  
Collected By : SRM  
Collection Date : 07/17/12 13:20

ESC Sample # : L585883-04

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.7		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	99.0		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	08/03/12	1
Surrogate recovery(%)						
o-Terphenyl	68.5		% Rec.	3546/DRO	08/03/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-BBT-10-071712  
Collected By : SRM  
Collection Date : 07/17/12 13:30

ESC Sample # : L585883-05

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.6		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.9		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	4.2	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	56.1		% Rec.	3546/DRO	07/20/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-ETS-071712 2-9IN  
Collected By : SRM  
Collection Date : 07/17/12 13:45

ESC Sample # : L585883-06

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/23/12	1
Chromium, Trivalent	12.	2.0	mg/kg	Calc.	07/28/12	1
ORP	210		mV	2580	07/21/12	1
pH	8.5		su	9045D	07/20/12	1
Sodium Adsorption Ratio	71.			Calc.	07/25/12	1
Specific Conductance	4500		umhos/cm	9050AMod	07/21/12	1
Mercury	0.021	0.020	mg/kg	7471	07/21/12	1
Arsenic	5.1	1.0	mg/kg	6010B	07/28/12	1
Barium	170	0.25	mg/kg	6010B	07/28/12	1
Cadmium	BDL	0.25	mg/kg	6010B	07/28/12	1
Chromium	12.	0.50	mg/kg	6010B	07/28/12	1
Copper	16.	1.0	mg/kg	6010B	07/28/12	1
Lead	11.	0.25	mg/kg	6010B	07/28/12	1
Nickel	3.5	1.0	mg/kg	6010B	07/28/12	1
Selenium	BDL	1.0	mg/kg	6010B	07/28/12	1
Silver	BDL	0.50	mg/kg	6010B	07/28/12	1
Zinc	79.	1.5	mg/kg	6010B	07/28/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/20/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/20/12	5
Ethylbenzene	0.0051	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	0.0096	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	3.8	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.5		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	99.1		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	68.	4.0	mg/kg	3546/DRO	07/24/12	1
Surrogate recovery(%)						
o-Terphenyl	51.5		% Rec.	3546/DRO	07/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.016	0.0060	mg/kg	8270C-SIM	07/20/12	1
Acenaphthene	0.021	0.0060	mg/kg	8270C-SIM	07/20/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L585883-06 (PH) - 8.5@21.4c





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Mt. Juliet, TN 37122  
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Est. 1970

# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-ETS-071712 2-9IN  
Collected By : SRM  
Collection Date : 07/17/12 13:45

ESC Sample # : L585883-06

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Fluorene	0.041	0.0060	mg/kg	8270C-SIM	07/20/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Naphthalene	0.094	0.0060	mg/kg	8270C-SIM	07/20/12	1
Phenanthrene	0.062	0.0060	mg/kg	8270C-SIM	07/20/12	1
Pyrene	0.012	0.0060	mg/kg	8270C-SIM	07/20/12	1
1-Methylnaphthalene	0.22	0.0060	mg/kg	8270C-SIM	07/20/12	1
2-Methylnaphthalene	0.22	0.0060	mg/kg	8270C-SIM	07/20/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Surrogate Recovery						
Nitrobenzene-d5	114.		% Rec.	8270C-SIM	07/20/12	1
2-Fluorobiphenyl	74.8		% Rec.	8270C-SIM	07/20/12	1
p-Terphenyl-d14	71.6		% Rec.	8270C-SIM	07/20/12	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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L585883-06 (PH) - 8.5@21.4c



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Est. 1970

# REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-BG1N-6IN-071712  
Collected By : SRM  
Collection Date : 07/17/12 12:15

ESC Sample # : L585883-07

Site ID : 22-12

Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	1.3	1.0	mg/kg	6010B	08/02/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-BG2E-6IN-071712  
Collected By : SRM  
Collection Date : 07/17/12 12:25

ESC Sample # : L585883-08  
  
Site ID : 22-12  
Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.4	1.0	mg/kg	6010B	08/02/12	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
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REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-BG3S-6IN-071712  
Collected By : SRM  
Collection Date : 07/17/12 12:35

ESC Sample # : L585883-09  
Site ID : 22-12  
Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	1.0	1.0	mg/kg	6010B	08/02/12	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:  
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REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 19, 2012  
Description : 22-12 Site Clearance  
Sample ID : 22-12-BG4W-6IN-071712  
Collected By : SRM  
Collection Date : 07/17/12 12:45

ESC Sample # : L585883-10  
  
Site ID : 22-12  
Project # : 22-12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	1.1	1.0	mg/kg	6010B	08/02/12	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
L585883-01	WG603597	SAMP	TPH (GC/FID) Low Fraction	R2265873	J5
L585883-06	WG603576	SAMP	pH	R2265315	T8
	WG603681	SAMP	ORP	R2266754	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
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.



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG603529	07/20/12 11:28
o-Terphenyl		% Rec.	52.90	50-150	WG603529	07/20/12 11:28
1-Methylnaphthalene	< .006	mg/kg			WG603530	07/20/12 01:42
2-Chloronaphthalene	< .006	mg/kg			WG603530	07/20/12 01:42
2-Methylnaphthalene	< .006	mg/kg			WG603530	07/20/12 01:42
Acenaphthene	< .006	mg/kg			WG603530	07/20/12 01:42
Acenaphthylene	< .006	mg/kg			WG603530	07/20/12 01:42
Anthracene	< .006	mg/kg			WG603530	07/20/12 01:42
Benzo(a)anthracene	< .006	mg/kg			WG603530	07/20/12 01:42
Benzo(a)pyrene	< .006	mg/kg			WG603530	07/20/12 01:42
Benzo(b)fluoranthene	< .006	mg/kg			WG603530	07/20/12 01:42
Benzo(g,h,i)perylene	< .006	mg/kg			WG603530	07/20/12 01:42
Benzo(k)fluoranthene	< .006	mg/kg			WG603530	07/20/12 01:42
Chrysene	< .006	mg/kg			WG603530	07/20/12 01:42
Dibenz(a,h)anthracene	< .006	mg/kg			WG603530	07/20/12 01:42
Fluoranthene	< .006	mg/kg			WG603530	07/20/12 01:42
Fluorene	< .006	mg/kg			WG603530	07/20/12 01:42
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG603530	07/20/12 01:42
Naphthalene	< .006	mg/kg			WG603530	07/20/12 01:42
Phenanthrene	< .006	mg/kg			WG603530	07/20/12 01:42
Pyrene	< .006	mg/kg			WG603530	07/20/12 01:42
2-Fluorobiphenyl		% Rec.	80.67	34-129	WG603530	07/20/12 01:42
Nitrobenzene-d5		% Rec.	77.91	14-141	WG603530	07/20/12 01:42
p-Terphenyl-d14		% Rec.	87.20	25-139	WG603530	07/20/12 01:42
pH	7.11	su			WG603576	07/20/12 14:15
Benzene	< .0005	mg/kg			WG603597	07/20/12 14:48
Ethylbenzene	< .0005	mg/kg			WG603597	07/20/12 14:48
Toluene	< .005	mg/kg			WG603597	07/20/12 14:48
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG603597	07/20/12 14:48
Total Xylene	< .0015	mg/kg			WG603597	07/20/12 14:48
a,a,a-Trifluorotoluene(FID)		% Rec.	93.72	59-128	WG603597	07/20/12 14:48
a,a,a-Trifluorotoluene(PID)		% Rec.	99.09	54-144	WG603597	07/20/12 14:48
Mercury	< .02	mg/kg			WG603749	07/21/12 12:25
Specific Conductance	5.05	umhos/cm			WG603531	07/21/12 14:03
Chromium,Hexavalent	< 2	mg/kg			WG603725	07/23/12 12:02
TPH (GC/FID) High Fraction	< 4	ppm			WG604113	07/24/12 11:08
o-Terphenyl		% Rec.	73.23	50-150	WG604113	07/24/12 11:08
Arsenic	< 1	mg/kg			WG603579	07/28/12 15:39
Barium	< .25	mg/kg			WG603579	07/28/12 15:39
Cadmium	< .25	mg/kg			WG603579	07/28/12 15:39
Chromium	< .5	mg/kg			WG603579	07/28/12 15:39
Copper	< 1	mg/kg			WG603579	07/28/12 15:39
Lead	< .25	mg/kg			WG603579	07/28/12 15:39

\* 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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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Nickel	< 1	mg/kg			WG603579	07/28/12 15:39
Selenium	< 1	mg/kg			WG603579	07/28/12 15:39
Silver	< .5	mg/kg			WG603579	07/28/12 15:39
Zinc	< 1.5	mg/kg			WG603579	07/28/12 15:39
Arsenic	< 1	mg/kg			WG604796	08/02/12 19:03
TPH (GC/FID) High Fraction	< 4	ppm			WG605762	08/03/12 09:38
o-Terphenyl		% Rec.	68.87	50-150	WG605762	08/03/12 09:38

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
pH	su	8.10	8.10		0.370	1	L585285-93	WG603576
pH	su	9.80	9.80		0.512	1	L585909-01	WG603576
Mercury	mg/kg	0	0		0	20	L585840-02	WG603749
Specific Conductance	umhos/cm	1800	1700		6.27	20	L586556-105	WG603531
Specific Conductance	umhos/cm	5200	4500		13.9	20	L585883-06	WG603531
ORP	mV	240.	220.		6.59	20	L585715-08	WG603681
ORP	mV	88.0	97.0		9.73	20	L585900-12	WG603681
Chromium, Hexavalent	mg/kg	0	0		0	20	L585715-17	WG603725
Chromium, Hexavalent	mg/kg	0	0		0	20	L586108-06	WG603725
Barium	mg/kg	870.	134.		147.*	20	L585908-01	WG603579
Chromium	mg/kg	18.0	20.4		10.9	20	L585908-01	WG603579
Copper	mg/kg	76.0	126.		49.9*	20	L585908-01	WG603579
Nickel	mg/kg	30.0	14.0		72.7*	20	L585908-01	WG603579
Selenium	mg/kg	4.00	3.64		10.4	20	L585908-01	WG603579
Zinc	mg/kg	300.	95.5		103.*	20	L585908-01	WG603579
Arsenic	mg/kg	5.30	11.7		74.8*	20	L585908-01	WG603579
Cadmium	mg/kg	0	0.629		NA	20	L585908-01	WG603579
Lead	mg/kg	100.	110.		5.61	20	L585908-01	WG603579
Silver	mg/kg	0	0		0	20	L585908-01	WG603579
Arsenic	mg/kg	3.40	2.40		35.3*	20	L586720-01	WG604796

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	40.8	67.9	50-150	WG603529
o-Terphenyl				52.82	50-150	WG603529
1-Methylnaphthalene	mg/kg	.033	0.0175	53.2	48-113	WG603530
2-Chloronaphthalene	mg/kg	.033	0.0184	55.9	51-114	WG603530
2-Methylnaphthalene	mg/kg	.033	0.0168	50.9	44-109	WG603530
Acenaphthene	mg/kg	.033	0.0200	60.7	52-108	WG603530

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Acenaphthylene	mg/kg	.033	0.0207	62.7	51-110	WG603530
Anthracene	mg/kg	.033	0.0251	76.0	58-120	WG603530
Benzo(a)anthracene	mg/kg	.033	0.0285	86.3	54-110	WG603530
Benzo(a)pyrene	mg/kg	.033	0.0269	81.4	56-118	WG603530
Benzo(b)fluoranthene	mg/kg	.033	0.0264	80.0	55-114	WG603530
Benzo(g,h,i)perylene	mg/kg	.033	0.0259	78.4	48-130	WG603530
Benzo(k)fluoranthene	mg/kg	.033	0.0276	83.6	55-122	WG603530
Chrysene	mg/kg	.033	0.0262	79.3	57-118	WG603530
Dibenz(a,h)anthracene	mg/kg	.033	0.0257	78.0	53-122	WG603530
Fluoranthene	mg/kg	.033	0.0268	81.3	58-118	WG603530
Fluorene	mg/kg	.033	0.0233	70.5	54-109	WG603530
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0258	78.3	51-125	WG603530
Naphthalene	mg/kg	.033	0.0164	49.6	45-105	WG603530
Phenanthrene	mg/kg	.033	0.0235	71.3	53-114	WG603530
Pyrene	mg/kg	.033	0.0255	77.3	53-121	WG603530
2-Fluorobiphenyl				56.67	34-129	WG603530
Nitrobenzene-d5				50.15	14-141	WG603530
p-Terphenyl-d14				79.21	25-139	WG603530
pH	su	5.7	5.76	101.*	98-101	WG603576
Benzene	mg/kg	.05	0.0501	100.	76-113	WG603597
Ethylbenzene	mg/kg	.05	0.0509	102.	78-115	WG603597
Toluene	mg/kg	.05	0.0495	99.0	76-114	WG603597
Total Xylene	mg/kg	.15	0.149	99.5	81-118	WG603597
a,a,a-Trifluorotoluene(PID)				98.86	54-144	WG603597
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.24	132.	67-135	WG603597
a,a,a-Trifluorotoluene(FID)				96.82	59-128	WG603597
Mercury	mg/kg	12.4	14.2	115.	71.6-128	WG603749
Specific Conductance	umhos/cm	495	507.	102.	85-115	WG603531
ORP	mV	228	224.	98.2	95.6-104.	WG603681
Chromium,Hexavalent	mg/kg	150	126.	84.0	50-150	WG603725
TPH (GC/FID) High Fraction	ppm	60	48.7	81.2	50-150	WG604113
o-Terphenyl				64.81	50-150	WG604113
Arsenic	mg/kg	237	236.	99.6	83.1-117	WG603579
Barium	mg/kg	252	263.	104.	84.1-116	WG603579
Cadmium	mg/kg	191	187.	97.9	83.2-117	WG603579
Chromium	mg/kg	128	133.	104.	81.3-118	WG603579
Copper	mg/kg	123	126.	102.	83.7-116	WG603579
Lead	mg/kg	103	100.	97.1	83.1-117	WG603579
Nickel	mg/kg	118	109.	92.4	82-118	WG603579
Selenium	mg/kg	110	108.	98.2	78.7-122	WG603579
Silver	mg/kg	47.3	47.4	100.	66.2-134	WG603579
Zinc	mg/kg	183	179.	97.8	82-118	WG603579

\* Performance of this Analyte is outside of established criteria.

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Arsenic	mg/kg	237	221.	93.2	83.1-117	WG604796
TPH (GC/FID) High Fraction	ppm	60	52.0	86.6	50-150	WG605762
o-Terphenyl				71.80	50-150	WG605762

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	42.0	40.8	70.0	50-150	2.99	25	WG603529
o-Terphenyl				55.97	50-150			WG603529
1-Methylnaphthalene	mg/kg	0.0171	0.0175	52.0	48-113	2.77	24	WG603530
2-Chloronaphthalene	mg/kg	0.0179	0.0184	54.0	51-114	2.73	24	WG603530
2-Methylnaphthalene	mg/kg	0.0164	0.0168	50.0	44-109	2.26	24	WG603530
Acenaphthene	mg/kg	0.0194	0.0200	59.0	52-108	3.03	22	WG603530
Acenaphthylene	mg/kg	0.0199	0.0207	60.0	51-110	4.11	21	WG603530
Anthracene	mg/kg	0.0262	0.0251	79.0	58-120	4.53	20	WG603530
Benzo(a)anthracene	mg/kg	0.0284	0.0285	86.0	54-110	0.0823	22	WG603530
Benzo(a)pyrene	mg/kg	0.0278	0.0269	84.0	56-118	3.35	21	WG603530
Benzo(b)fluoranthene	mg/kg	0.0290	0.0264	88.0	55-114	9.35	20	WG603530
Benzo(g,h,i)perylene	mg/kg	0.0271	0.0259	82.0	48-130	4.68	20	WG603530
Benzo(k)fluoranthene	mg/kg	0.0280	0.0276	85.0	55-122	1.63	25	WG603530
Chrysene	mg/kg	0.0272	0.0262	82.0	57-118	4.04	20	WG603530
Dibenz(a,h)anthracene	mg/kg	0.0274	0.0257	83.0	53-122	6.09	20	WG603530
Fluoranthene	mg/kg	0.0275	0.0268	83.0	58-118	2.45	20	WG603530
Fluorene	mg/kg	0.0225	0.0233	68.0	54-109	3.30	20	WG603530
Indeno(1,2,3-cd)pyrene	mg/kg	0.0273	0.0258	82.0	51-125	5.38	21	WG603530
Naphthalene	mg/kg	0.0160	0.0164	49.0	45-105	1.88	24	WG603530
Phenanthrene	mg/kg	0.0249	0.0235	76.0	53-114	5.79	20	WG603530
Pyrene	mg/kg	0.0271	0.0255	82.0	53-121	6.01	20	WG603530
2-Fluorobiphenyl				54.89	34-129			WG603530
Nitrobenzene-d5				48.22	14-141			WG603530
p-Terphenyl-d14				80.89	25-139			WG603530
pH	su	5.74	5.76	101.	98-101	0.348	20	WG603576
Benzene	mg/kg	0.0506	0.0501	101.	76-113	0.950	20	WG603597
Ethylbenzene	mg/kg	0.0511	0.0509	102.	78-115	0.380	20	WG603597
Toluene	mg/kg	0.0499	0.0495	100.	76-114	0.770	20	WG603597
Total Xylene	mg/kg	0.149	0.149	100.	81-118	0.130	20	WG603597
a,a,a-Trifluorotoluene(PID)				99.22	54-144			WG603597
TPH (GC/FID) Low Fraction	mg/kg	7.32	7.24	133.	67-135	1.08	20	WG603597
a,a,a-Trifluorotoluene(FID)				96.85	59-128			WG603597
Specific Conductance	umhos/	506.	507.	102.	85-115	0.197	20	WG603531
ORP	mV	223.	224.	98.0	95.6-104.	0.447	20	WG603681
Chromium,Hexavalent	mg/kg	129.	126.	86.0	50-150	2.35	20	WG603725

\* Performance of this Analyte is outside of established criteria.  
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**YOUR LAB OF CHOICE**

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

Rangely, CO 81648-3600

Quality Assurance Report  
Level II

L585883

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

August 03, 2012

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	50.7	48.7	84.0	50-150	3.97	25	WG604113
o-Terphenyl				65.67	50-150			WG604113
TPH (GC/FID) High Fraction	ppm	54.2	52.0	90.0	50-150	4.21	25	WG605762
o-Terphenyl				72.60	50-150			WG605762

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
1-Methylnaphthalene	mg/kg	0.0258	0	.033	78.2	25-155	L585825-03	WG603530
2-Chloronaphthalene	mg/kg	0.0263	0	.033	79.6	31-153	L585825-03	WG603530
2-Methylnaphthalene	mg/kg	0.0246	0	.033	74.6	22-172	L585825-03	WG603530
Acenaphthene	mg/kg	0.0266	0	.033	80.6	43-133	L585825-03	WG603530
Acenaphthylene	mg/kg	0.0279	0	.033	84.5	42-146	L585825-03	WG603530
Anthracene	mg/kg	0.0305	0	.033	92.3	38-153	L585825-03	WG603530
Benzo(a)anthracene	mg/kg	0.0299	0	.033	90.7	31-142	L585825-03	WG603530
Benzo(a)pyrene	mg/kg	0.0277	0	.033	84.0	26-152	L585825-03	WG603530
Benzo(b)fluoranthene	mg/kg	0.0277	0	.033	84.0	10-188	L585825-03	WG603530
Benzo(g,h,i)perylene	mg/kg	0.0247	0	.033	75.0	10-176	L585825-03	WG603530
Benzo(k)fluoranthene	mg/kg	0.0287	0	.033	86.9	22-163	L585825-03	WG603530
Chrysene	mg/kg	0.0292	0	.033	88.5	26-146	L585825-03	WG603530
Dibenz(a,h)anthracene	mg/kg	0.0258	0	.033	78.2	10-160	L585825-03	WG603530
Fluoranthene	mg/kg	0.0305	0	.033	92.5	23-160	L585825-03	WG603530
Fluorene	mg/kg	0.0282	0	.033	85.5	44-143	L585825-03	WG603530
Indeno(1,2,3-cd)pyrene	mg/kg	0.0252	0	.033	76.4	10-157	L585825-03	WG603530
Naphthalene	mg/kg	0.0249	0	.033	75.3	22-156	L585825-03	WG603530
Phenanthrene	mg/kg	0.0290	0	.033	88.0	23-164	L585825-03	WG603530
Pyrene	mg/kg	0.0289	0	.033	87.6	12-170	L585825-03	WG603530
2-Fluorobiphenyl					81.99	34-129		WG603530
Nitrobenzene-d5					74.78	14-141		WG603530
p-Terphenyl-d14					90.26	25-139		WG603530
Benzene	mg/kg	0.235	0	.05	93.9	32-137	L585883-01	WG603597
Ethylbenzene	mg/kg	0.236	0	.05	94.3	10-150	L585883-01	WG603597
Toluene	mg/kg	0.234	0	.05	93.4	20-142	L585883-01	WG603597
Total Xylene	mg/kg	0.687	0	.15	91.6	16-141	L585883-01	WG603597
a,a,a-Trifluorotoluene(PID)					98.65	54-144		WG603597
TPH (GC/FID) Low Fraction	mg/kg	30.8	0	5.5	112.*	55-109	L585883-01	WG603597
a,a,a-Trifluorotoluene(FID)					95.24	59-128		WG603597
Mercury	mg/kg	0.272	0	.25	109.	80-120	L585840-02	WG603749
Chromium,Hexavalent	mg/kg	17.1	0	20	85.5	50-150	L585715-17	WG603725
TPH (GC/FID) High Fraction	ppm	212.	250.	60	0*	50-150	L585816-07	WG603529
o-Terphenyl					43.93*	50-150		WG603529
TPH (GC/FID) High Fraction	ppm	47.5	4.50	60	71.7	50-150	L585314-03	WG604113
o-Terphenyl					41.50*	50-150		WG604113
Barium	mg/kg	463.	134.	50	658.*	75-125	L585908-01	WG603579
Chromium	mg/kg	71.3	20.4	50	102.	75-125	L585908-01	WG603579

\* Performance of this Analyte is outside of established criteria.

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Tax I.D. 62-0814289

Est. 1970

August 03, 2012

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Copper	mg/kg	153.	126.	50	54.0*	75-125	L585908-01	WG603579
Nickel	mg/kg	74.5	14.0	50	121.	75-125	L585908-01	WG603579
Selenium	mg/kg	49.8	3.64	50	92.3	75-125	L585908-01	WG603579
Zinc	mg/kg	136.	95.5	50	81.0	75-125	L585908-01	WG603579
Arsenic	mg/kg	58.0	11.7	10	92.6	75-125	L585908-01	WG603579
Cadmium	mg/kg	56.1	0.629	10	111.	75-125	L585908-01	WG603579
Lead	mg/kg	172.	110.	10	124.	75-125	L585908-01	WG603579
Silver	mg/kg	56.8	0	10	114.	75-125	L585908-01	WG603579
Barium	mg/kg	63.5	11.0	50	105.	75-125	L585895-04	WG603579
Chromium	mg/kg	64.0	8.70	50	111.	75-125	L585895-04	WG603579
Selenium	mg/kg	63.0	12.0	50	102.	75-125	L585895-04	WG603579
Arsenic	mg/kg	52.7	0.730	25	104.	75-125	L585895-04	WG603579
Cadmium	mg/kg	50.2	0	25	100.	75-125	L585895-04	WG603579
Lead	mg/kg	54.6	2.20	25	105.	75-125	L585895-04	WG603579
Silver	mg/kg	56.5	0	25	113.	75-125	L585895-04	WG603579
Arsenic	mg/kg	43.1	2.40	50	81.4	75-125	L586720-01	WG604796
Arsenic	mg/kg	43.3	1.10	50	84.4	75-125	L586921-01	WG604796

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0261	0.0258	79.0	25-155	1.00	27	L585825-03	WG603530
2-Chloronaphthalene	mg/kg	0.0265	0.0263	80.3	31-153	0.907	22	L585825-03	WG603530
2-Methylnaphthalene	mg/kg	0.0251	0.0246	76.0	22-172	1.83	29	L585825-03	WG603530
Acenaphthene	mg/kg	0.0273	0.0266	82.6	43-133	2.48	26	L585825-03	WG603530
Acenaphthylene	mg/kg	0.0280	0.0279	84.9	42-146	0.472	22	L585825-03	WG603530
Anthracene	mg/kg	0.0293	0.0305	88.9	38-153	3.81	27	L585825-03	WG603530
Benzo(a)anthracene	mg/kg	0.0289	0.0299	87.5	31-142	3.62	31	L585825-03	WG603530
Benzo(a)pyrene	mg/kg	0.0270	0.0277	81.8	26-152	2.56	32	L585825-03	WG603530
Benzo(b)fluoranthene	mg/kg	0.0266	0.0277	80.7	10-188	3.96	33	L585825-03	WG603530
Benzo(g,h,i)perylene	mg/kg	0.0242	0.0247	73.4	10-176	2.07	30	L585825-03	WG603530
Benzo(k)fluoranthene	mg/kg	0.0282	0.0287	85.5	22-163	1.60	29	L585825-03	WG603530
Chrysene	mg/kg	0.0281	0.0292	85.2	26-146	3.75	30	L585825-03	WG603530
Dibenz(a,h)anthracene	mg/kg	0.0253	0.0258	76.6	10-160	2.13	39	L585825-03	WG603530
Fluoranthene	mg/kg	0.0290	0.0305	87.9	23-160	5.08	22	L585825-03	WG603530
Fluorene	mg/kg	0.0276	0.0282	83.6	44-143	2.20	23	L585825-03	WG603530
Indeno(1,2,3-cd)pyrene	mg/kg	0.0245	0.0252	74.2	10-157	2.89	40	L585825-03	WG603530
Naphthalene	mg/kg	0.0244	0.0249	74.0	22-156	1.73	27	L585825-03	WG603530
Phenanthrene	mg/kg	0.0271	0.0290	82.2	23-164	6.74	25	L585825-03	WG603530
Pyrene	mg/kg	0.0280	0.0289	84.8	12-170	3.19	24	L585825-03	WG603530
2-Fluorobiphenyl				79.91	34-129				WG603530
Nitrobenzene-d5				75.44	14-141				WG603530
p-Terphenyl-d14				86.30	25-139				WG603530
Benzene	mg/kg	0.221	0.235	88.5	32-137	5.97	39	L585883-01	WG603597
Ethylbenzene	mg/kg	0.216	0.236	86.3	10-150	8.92	44	L585883-01	WG603597
Toluene	mg/kg	0.216	0.234	86.2	20-142	8.04	42	L585883-01	WG603597
Total Xylene	mg/kg	0.628	0.687	83.8	16-141	8.99	46	L585883-01	WG603597
a,a,a-Trifluorotoluene(PID)				98.19	54-144				WG603597
TPH (GC/FID) Low Fraction	mg/kg	28.8	30.8	105.	55-109	6.74	20	L585883-01	WG603597
a,a,a-Trifluorotoluene(FID)				94.77	59-128				WG603597
Mercury	mg/kg	0.238	0.272	95.2	80-120	13.3	20	L585840-02	WG603749

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Level II

L585883

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1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 03, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium,Hexavalent	mg/kg	16.3	17.1	81.5	50-150	4.79	20	L585715-17	WG603725
TPH (GC/FID) High Fraction	ppm	330.	212.	133.	50-150	43.7*	25	L585816-07	WG603529
o-Terphenyl				46.57*	50-150				WG603529
TPH (GC/FID) High Fraction	ppm	44.8	47.5	67.1	50-150	5.94	25	L585314-03	WG604113
o-Terphenyl				45.45*	50-150				WG604113
Barium	mg/kg	332.	63.5	642.*	75-125	136.*	20	L585895-04	WG603579
Chromium	mg/kg	67.9	64.0	118.	75-125	5.91	20	L585895-04	WG603579
Copper	mg/kg	101.	153.	0*	75-125	40.9*	20	L585908-01	WG603579
Nickel	mg/kg	54.5	74.5	81.0	75-125	31.0*	20	L585908-01	WG603579
Selenium	mg/kg	46.3	63.0	68.6*	75-125	30.6*	20	L585895-04	WG603579
Zinc	mg/kg	124.	136.	57.0*	75-125	9.23	20	L585908-01	WG603579
Arsenic	mg/kg	50.2	58.0	77.0	75-125	14.4	20	L585908-01	WG603579
Cadmium	mg/kg	50.1	56.1	98.9	75-125	11.3	20	L585908-01	WG603579
Lead	mg/kg	130.	172.	40.0*	75-125	27.8*	20	L585908-01	WG603579
Silver	mg/kg	52.2	56.8	104.	75-125	8.44	20	L585908-01	WG603579
Barium	mg/kg	62.4	63.5	103.	75-125	1.75	20	L585895-04	WG603579
Chromium	mg/kg	59.4	64.0	101.	75-125	7.46	20	L585895-04	WG603579
Selenium	mg/kg	63.9	63.0	104.	75-125	1.42	20	L585895-04	WG603579
Arsenic	mg/kg	51.5	52.7	102.	75-125	2.30	20	L585895-04	WG603579
Cadmium	mg/kg	48.0	50.2	96.0	75-125	4.48	20	L585895-04	WG603579
Lead	mg/kg	53.6	54.6	103.	75-125	1.85	20	L585895-04	WG603579
Silver	mg/kg	56.1	56.5	112.	75-125	0.710	20	L585895-04	WG603579
Arsenic	mg/kg	47.6	43.1	90.4	75-125	9.92	20	L586720-01	WG604796
Arsenic	mg/kg	44.0	43.3	85.8	75-125	1.60	20	L586921-01	WG604796

Batch number /Run number / Sample number cross reference

WG603529: R2264513: L585883-01 05  
WG603530: R2265053: L585883-06  
WG603576: R2265315: L585883-06  
WG603597: R2265873: L585883-01 02 03 04 05 06  
WG603749: R2266233: L585883-06  
WG603531: R2266653: L585883-06  
WG603681: R2266754: L585883-06  
WG603725: R2267673: L585883-06  
WG604113: R2271914: L585883-03 06  
WG603925: R2273096: L585883-06  
WG603579: R2277553: L585883-06  
WG604796: R2286593: L585883-07 08 09 10  
WG605762: R2286733: L585883-02 04

\* \* 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.

<b>Encana Oil &amp; Gas</b> <b>1125 Escalante Drive</b> <b>Rangely, CO 81648-3600</b> <b>*ENCANRCO*</b>				Billing Information: Blake Ford 1125 Escalante Drive Rangely, CO 81648-3600 (970) 675-4414				Analysis/Container/Preservative				Chain of Custody Page 1 of 2  <b>ESC</b> L-A-B S-C-I-E-N-C-E-S 12065 Lebanon Road Mt. Juliet, TN 37122  Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859  J210  CoCode ENCANRCO (lab use only) Template/Prelogin 07-0035  Shipped Via:	
				Report to: Blake Ford				BTXGRO / DRO - 8021/8015 SV8270PAHSIM - 8270SIM SPCON - 9050AMod SAR - Calc. RCRA8 Metals + Cu, Ni, and Zn - 6010/7470 CR6SS - 3060A/7196 CR3 - Calc.  SAR, As					
				Email to: blake.ford@encana.com									
				Project Description: 22-12 Site Clearance City/State Collected:									
Phone: (970) 675-4414 FAX:		Client Project #: 22-12		ESC Key: ENCANRCO									
Collected by: SRM		Site/Facility ID#: 22-12		P.O.#:									
Collected by (signature):		<b>Rush?</b> (Lab MUST Be Notified) <input type="checkbox"/> Same Day.....200% <input type="checkbox"/> Next Day.....100% <input type="checkbox"/> Two Day.....50% <input type="checkbox"/> Three Day.....25%		Date Results Needed: Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes		No. of Cntrs							
Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>													
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time							
22-12-BG1N-6"-071712		Grab	SS	6"	7/17/12	1215	1						
22-12-BG2E-6"-071712		Grab	SS	6"	7/17/12	1225	1						
22-12-BG3S-6"-071712		Grab	SS	6"	7/17/12	1235	1						
22-12-BG4W-6"-071712		Grab	SS	6"	7/17/12	1245	1						
22-12-NSW-5'-071712		Grab	SS	5'	7/17/12	1250	2	X					
22-12-ESW-4'-071712		Grab	SS	4'	7/17/12	1300	2	X					
22-12-SSW-7'-071712		Grab	SS	7'	7/17/12	1310	2	X					
22-12-WSW-8'-071712		Grab	SS	8'	7/17/12	1320	2	X					
22-12-BBT-10'-071712		Grab	SS	10'	7/17/12	1330	2	X					
							Remarks/Contaminant		Sample # (lab only)				
							PLEASE 170417		L585883				

\*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other \_\_\_\_\_

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks: Please CC:smann@ruleengineering.com; bward@ruelengineering.com

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)		Date: 7/18/12	Time: 1400	Received by: (Signature)		Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier		Condition: JF (lab use only)	
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Temp: 31	Bottles Received: 17	CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature)		Date: 07-19-12	Time: 0900	pH Checked: NCF:	



## **Susan Peach**

---

**From:** Andy Vann  
**Sent:** Thursday, July 26, 2012 1:49 PM  
**To:** Reporting  
**Subject:** FW: Add the HOLD samples received from \*ENCANRCO-RULEENG\*

Please scan with coc. Thanks

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**From:** Jarred Willis  
**Sent:** Thursday, July 26, 2012 11:38 AM  
**To:** Login  
**Subject:** Add the HOLD samples received from \*ENCANRCO-RULEENG\*

We received 4 SS per login on the L#s listed below from \*ENCANRCO-RULEENG\* that were marked on the COC to be on HOLD. All of these samples should be marked with a "BG" in the sample ID. Please log all of these samples for ASICP, and add them to the original L#s that they were received with. Do NOT create completely new L#s for these. Change due date to 8/2.

L586506  
L586499  
L585898  
L585883  
L585527  
L585111 - Add to L585652. Do NOT add to L585111.

Thanks,  
**Jarred Willis**  
Technical Service Representative (TSR)  
E-mail: [jwillis@esclabsciences.com](mailto:jwillis@esclabsciences.com)  
Phone: 800-767-5859 Ext. 9678  
Direct: (615) 773-9678  
[www.esclabsciences.com](http://www.esclabsciences.com)

