

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- 103-09706	OGCC Facility ID Number 316070	Survey Plat
6. Well/Facility Name: Cathedral Federal #27-13	7. Well/Facility Number 27-13	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): SWSW, Sec 27, 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: 44674		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 <input type="checkbox"/>	
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 Formation _____ Formation Code _____ Spacing order number _____ Unit Acreage _____ Unit configuration _____			<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual		<input type="checkbox"/> CHANGE WELL NAME From: _____ To: _____ Effective Date: _____	
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for Inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection: _____		<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No 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 Method used _____ Cementing tool setting/perf depth _____ Cement volume _____ Cement top _____ Cement bottom _____ Date _____ *submit cbl and cement job summaries			
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.			

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent Approximate Start Date: _____	<input checked="" type="checkbox"/> Report of Work Done Date Work Completed: 7/16/12	
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: 6-24-2013 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: 100185  | API Number: 05-103-09706    |
| 2. Name of Operator: Encana Oil and Gas (USA)                                  | OGCC Facility ID # 316070   |
| 3. Well/Facility Name: Cathedral Federal #27-13                                | Well/Facility Number: 27-13 |
| 4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSW, Sec 27, 02S, 101W, 6th PM |                             |

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 27-13)

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 #27-13 (COGCC facility #316070, COGCC remediation #7185). 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 16, 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 75 cubic yards of excavated material was removed from the pit and laid out in one (1) foot tall (44' x 35') 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 #27-13 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 (2.4ppm) and SAR (14). 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 (3.8 – 5.6 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 arsenic and SAR levels of the returned spoil material within the excavated footprint area 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 level of SAR 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 27-13)

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 #27-13 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 #7185.

#### NOTIFICATION OF COMPLETION

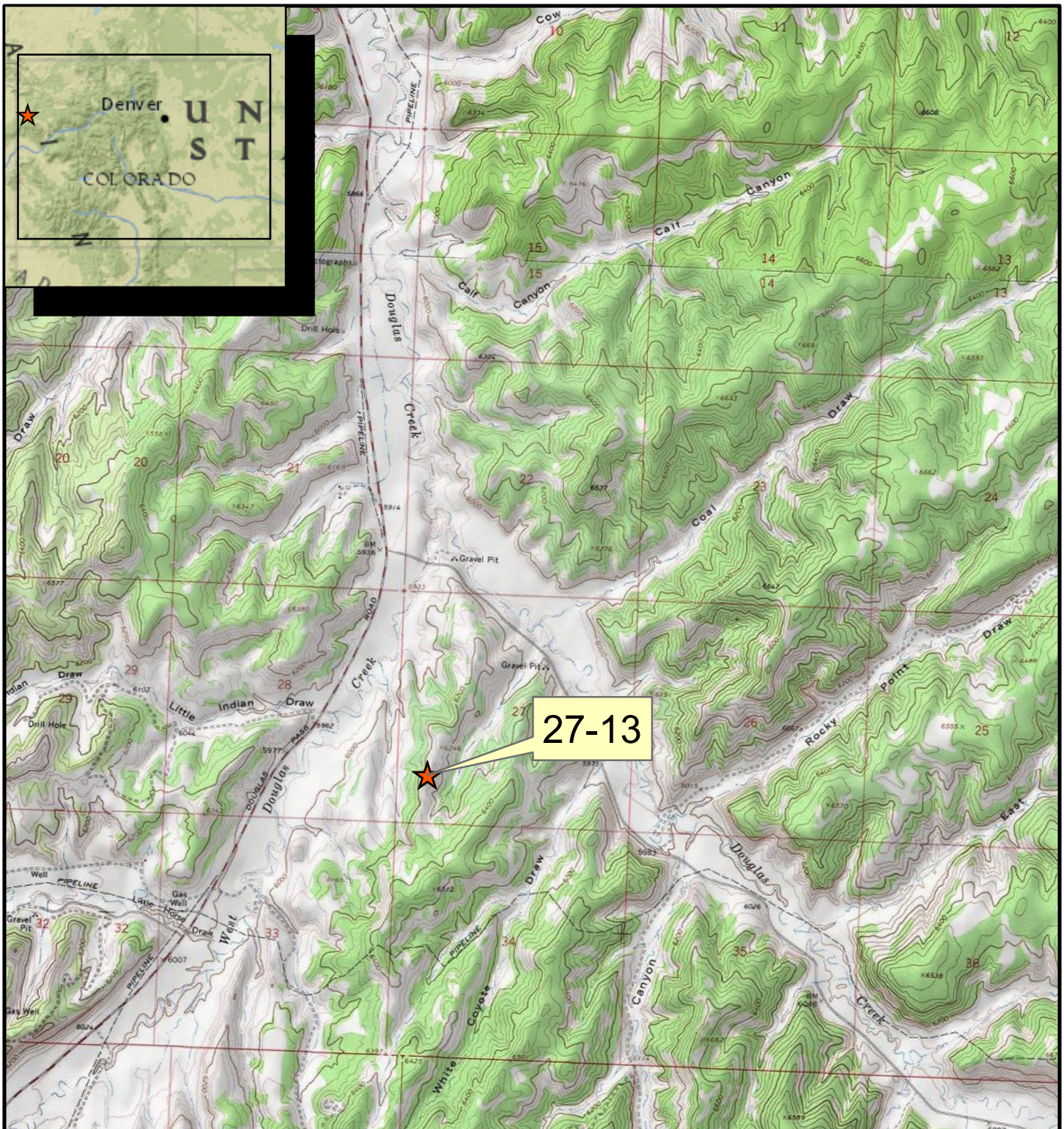
This Sundry Notice is also being submitted as the Notification of Completion for Remediation #7185. If the information provided here is satisfactory, please provide documentation of the closure of this remediation project.

#### ATTACHMENTS

Topographic Location Map (Figure 1)  
27-13 Aerial map with sample locations (Figure 2)  
27-13 Site Diagram of Excavation and sample locations (Figure 3)  
Laboratory Results Summary Table 1 – 27-13 Site Investigation (Table 1)  
Attachment A- Laboratory Reports







## Legend



27-13 Site Location



0 0.25 0.5 1 1.5 Miles

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

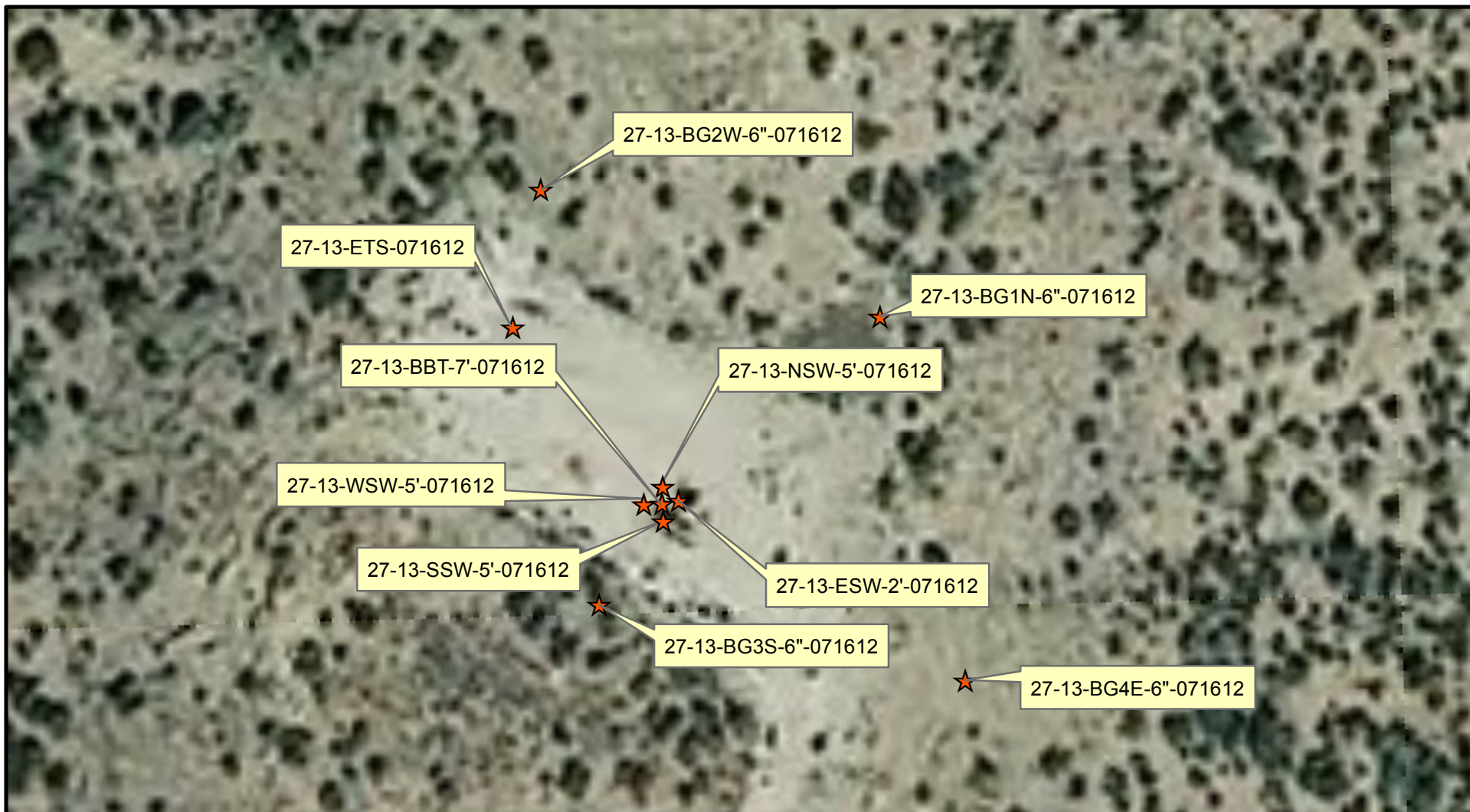


**27-13**  
**Site Location Map**

DATE: 9/03/2012 JG FILE: \\Encana\Figures\Rangely\22-13\120903 Site Location Map.pdf

FIGURE: 1





## Legend

★ Soil Sample Location

0 37.5 75 150 225 Feet



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

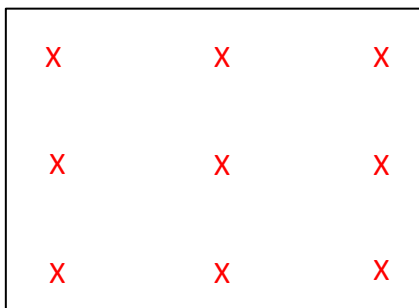


**27-13**  
**Sample Location Map**

DATE: 9/03/2012 JG FILE: \\EnCana\Figures\Rangely\22-13\120903 Sample Location Map.pdf FIGURE: 2

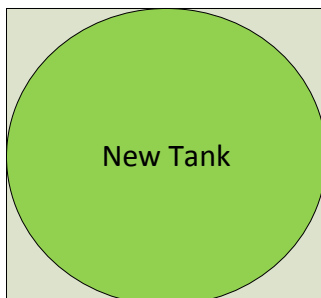


27-13-ETS-071612

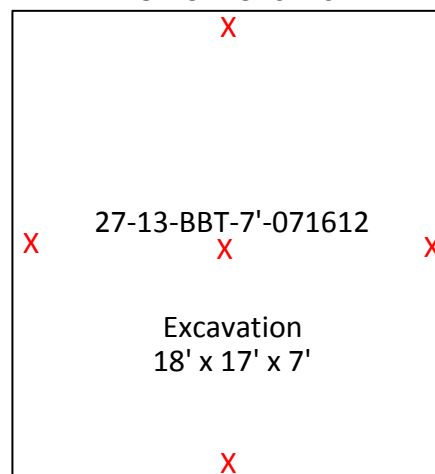


Lift  
44' x 35'

Direction of  
Flow



27-13-NSW-5'-071612



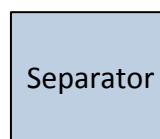
27-13-BBT-7'-071612

Excavation  
18' x 17' x 7'

27-13-WSW-5'-071612

27-13-ESW-2'-071612

27-13-SSW-5'-071612



Legend  
X-Sample



Well: Figure 3. 27-13 Site Diagram

Area: Cathedral Federal Unit

Legal: SWSW, Sec 27, 02S, 101W, 6<sup>th</sup> PM

Date: 09/11/12

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

Tax I.D. 62-0814289

Est. 1970

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

## Report Summary

Thursday August 02, 2012

Report Number: L585527


Samples Received: 07/18/12

Client Project: 27-13

Description: 27-13 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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-NSW-5-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 14:45

ESC Sample # : L585527-01

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.6		% Rec.	8021/8015	07/18/12	5
a,a,a-Trifluorotoluene(PID)	97.9		% Rec.	8021/8015	07/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/24/12	1
Surrogate recovery(%)						
o-Terphenyl	52.9		% Rec.	3546/DRO	07/24/12	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-WSW-5-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 14:55

ESC Sample # : L585527-02

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.2		% Rec.	8021/8015	07/18/12	5
a,a,a-Trifluorotoluene(PID)	97.2		% Rec.	8021/8015	07/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/24/12	1
Surrogate recovery(%)						
o-Terphenyl	60.9		% Rec.	3546/DRO	07/24/12	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-SSW-5-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 15:00

ESC Sample # : L585527-03

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.0		% Rec.	8021/8015	07/18/12	5
a,a,a-Trifluorotoluene(PID)	97.3		% Rec.	8021/8015	07/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/19/12	1
Surrogate recovery(%)						
o-Terphenyl	55.9		% Rec.	3546/DRO	07/19/12	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-ESW-2-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 14:40

ESC Sample # : L585527-04

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.2		% Rec.	8021/8015	07/18/12	5
a,a,a-Trifluorotoluene(PID)	97.5		% Rec.	8021/8015	07/18/12	5
TPH (GC/FID) High Fraction	4.1	4.0	mg/kg	3546/DRO	07/19/12	1
Surrogate recovery(%)						
o-Terphenyl	60.2		% Rec.	3546/DRO	07/19/12	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-BBT-7-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 15:15

ESC Sample # : L585527-05

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.3		% Rec.	8021/8015	07/18/12	5
a,a,a-Trifluorotoluene(PID)	97.6		% Rec.	8021/8015	07/18/12	5
TPH (GC/FID) High Fraction	89.	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	67.1		% 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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
  
Sample ID : 27-13-ETS-071612  
  
Collected By : Brad Ward  
Collection Date : 07/16/12 16:35

ESC Sample # : L585527-06  
  
Site ID : 27-13  
  
Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/20/12	1
Chromium, Trivalent	8.9	2.0	mg/kg	Calc.	07/27/12	1
ORP	180		mV	2580	07/20/12	1
pH	8.5		su	9045D	07/20/12	1
Sodium Adsorption Ratio	14.			Calc.	07/19/12	1
Specific Conductance	2000		umhos/cm	9050AMod	07/23/12	1
Mercury	0.041	0.020	mg/kg	7471	07/20/12	1
Arsenic	2.4	1.0	mg/kg	6010B	07/27/12	1
Barium	140	0.25	mg/kg	6010B	07/27/12	1
Cadmium	0.31	0.25	mg/kg	6010B	07/27/12	1
Chromium	8.9	0.50	mg/kg	6010B	07/27/12	1
Copper	20.	1.0	mg/kg	6010B	07/27/12	1
Lead	22.	0.25	mg/kg	6010B	07/27/12	1
Nickel	15.	1.0	mg/kg	6010B	07/27/12	1
Selenium	BDL	1.0	mg/kg	6010B	07/27/12	1
Silver	BDL	0.50	mg/kg	6010B	07/27/12	1
Zinc	520	1.5	mg/kg	6010B	07/27/12	1
Benzene	BDL	0.025	mg/kg	8021/8015	07/18/12	50
Toluene	BDL	0.25	mg/kg	8021/8015	07/18/12	50
Ethylbenzene	0.16	0.025	mg/kg	8021/8015	07/18/12	50
Total Xylene	0.37	0.075	mg/kg	8021/8015	07/18/12	50
TPH (GC/FID) Low Fraction	120	5.0	mg/kg	GRO	07/18/12	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.2		% Rec.	8021/8015	07/18/12	50
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	07/18/12	50
TPH (GC/FID) High Fraction	230	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	78.9		% Rec.	3546/DRO	07/20/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Acenaphthene	0.0066	0.0060	mg/kg	8270C-SIM	07/19/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L585527-06 (PH) - 8.5@21.2c





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# REPORT OF ANALYSIS

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

August 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-ETS-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 16:35

ESC Sample # : L585527-06

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Fluorene	0.0068	0.0060	mg/kg	8270C-SIM	07/19/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Naphthalene	0.069	0.0060	mg/kg	8270C-SIM	07/19/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
1-Methylnaphthalene	0.12	0.0060	mg/kg	8270C-SIM	07/19/12	1
2-Methylnaphthalene	0.16	0.0060	mg/kg	8270C-SIM	07/19/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/19/12	1
Surrogate Recovery						
Nitrobenzene-d5	106.		% Rec.	8270C-SIM	07/19/12	1
2-Fluorobiphenyl	73.7		% Rec.	8270C-SIM	07/19/12	1
p-Terphenyl-d14	69.0		% Rec.	8270C-SIM	07/19/12	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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L585527-06 (PH) - 8.5@21.2c



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# REPORT OF ANALYSIS

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

August 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-BG1N-6IN-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 15:55

ESC Sample # : L585527-08

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.8	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-BG2W-6IN-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 16:05

ESC Sample # : L585527-09

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.1	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-BG3S-6IN-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 16:15

ESC Sample # : L585527-10

Site ID : 27-13

Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.7	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 02, 2012

Date Received : July 18, 2012  
Description : 27-13 Site Clearance  
Sample ID : 27-13-BG4E-6IN-071612  
Collected By : Brad Ward  
Collection Date : 07/16/12 16:25

ESC Sample # : L585527-11  
  
Site ID : 27-13  
Project # : 27-13

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.6	1.0	mg/kg	6010B	07/28/12	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
L585527-02	WG603277	SAMP	TPH (GC/FID) Low Fraction	R2261293	J3
L585527-06	WG603302	SAMP	Arsenic	R2274753	P1
	WG603302	SAMP	Barium	R2274753	J6
	WG603302	SAMP	Lead	R2274753	J6
	WG603302	SAMP	Zinc	R2274753	J3V
	WG603304	SAMP	Fluorene	R2262153	J3
	WG603576	SAMP	pH	R2265315	T8

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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			
Benzene	< .0005	mg/kg			WG603277	07/18/12 19:30
Ethylbenzene	< .0005	mg/kg			WG603277	07/18/12 19:30
Toluene	< .005	mg/kg			WG603277	07/18/12 19:30
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG603277	07/18/12 19:30
Total Xylene	< .0015	mg/kg			WG603277	07/18/12 19:30
a,a,a-Trifluorotoluene(FID)		% Rec.	93.16	59-128	WG603277	07/18/12 19:30
a,a,a-Trifluorotoluene(PID)		% Rec.	98.43	54-144	WG603277	07/18/12 19:30
1-Methylnaphthalene	< .006	mg/kg			WG603304	07/19/12 04:12
2-Chloronaphthalene	< .006	mg/kg			WG603304	07/19/12 04:12
2-Methylnaphthalene	< .006	mg/kg			WG603304	07/19/12 04:12
Acenaphthene	< .006	mg/kg			WG603304	07/19/12 04:12
Acenaphthylene	< .006	mg/kg			WG603304	07/19/12 04:12
Anthracene	< .006	mg/kg			WG603304	07/19/12 04:12
Benzo(a)anthracene	< .006	mg/kg			WG603304	07/19/12 04:12
Benzo(a)pyrene	< .006	mg/kg			WG603304	07/19/12 04:12
Benzo(b)fluoranthene	< .006	mg/kg			WG603304	07/19/12 04:12
Benzo(g,h,i)perylene	< .006	mg/kg			WG603304	07/19/12 04:12
Benzo(k)fluoranthene	< .006	mg/kg			WG603304	07/19/12 04:12
Chrysene	< .006	mg/kg			WG603304	07/19/12 04:12
Dibenz(a,h)anthracene	< .006	mg/kg			WG603304	07/19/12 04:12
Fluoranthene	< .006	mg/kg			WG603304	07/19/12 04:12
Fluorene	< .006	mg/kg			WG603304	07/19/12 04:12
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG603304	07/19/12 04:12
Naphthalene	< .006	mg/kg			WG603304	07/19/12 04:12
Phenanthrene	< .006	mg/kg			WG603304	07/19/12 04:12
Pyrene	< .006	mg/kg			WG603304	07/19/12 04:12
2-Fluorobiphenyl		% Rec.	71.04	34-129	WG603304	07/19/12 04:12
Nitrobenzene-d5		% Rec.	68.81	14-141	WG603304	07/19/12 04:12
p-Terphenyl-d14		% Rec.	87.63	25-139	WG603304	07/19/12 04:12
TPH (GC/FID) High Fraction	< 4	ppm			WG603297	07/19/12 16:52
o-Terphenyl		% Rec.	56.52	50-150	WG603297	07/19/12 16:52
TPH (GC/FID) High Fraction	< 4	ppm			WG603385	07/20/12 04:02
o-Terphenyl		% Rec.	71.42	50-150	WG603385	07/20/12 04:02
Mercury	< .02	mg/kg			WG603463	07/20/12 10:34
Chromium,Hexavalent	< 2	mg/kg			WG603113	07/20/12 14:59
pH	7.11	su			WG603576	07/20/12 14:15
Specific Conductance	2.17	umhos/cm			WG603840	07/23/12 17:34
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			WG603302	07/27/12 01:36
Barium	< .25	mg/kg			WG603302	07/27/12 01:36

\* 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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August 02, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Cadmium	< .25	mg/kg			WG603302	07/27/12 01:36
Chromium	< .5	mg/kg			WG603302	07/27/12 01:36
Copper	< 1	mg/kg			WG603302	07/27/12 01:36
Lead	< .25	mg/kg			WG603302	07/27/12 01:36
Nickel	< 1	mg/kg			WG603302	07/27/12 01:36
Selenium	< 1	mg/kg			WG603302	07/27/12 01:36
Silver	< .5	mg/kg			WG603302	07/27/12 01:36
Zinc	< 1.5	mg/kg			WG603302	07/27/12 01:36
Arsenic	< 1	mg/kg			WG604897	07/28/12 12:14
Arsenic	< 1	mg/kg			WG605732	08/02/12 11:09

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
ORP	mV	220.	210.	2.35	20	L585068-01	WG603522
Mercury	mg/kg	0	0	0	20	L585715-09	WG603463
Chromium, Hexavalent	mg/kg	0	0	0	20	L585229-02	WG603113
pH	su	8.10	8.10	0.370	1	L585285-93	WG603576
pH	su	9.80	9.80	0.512	1	L585909-01	WG603576
Specific Conductance	umhos/cm	380.	330.	13.8	20	L585352-05	WG603840
Specific Conductance	umhos/cm	1400	1400	1.42	20	L586202-02	WG603840
Arsenic	mg/kg	0	2.40	NA	20	L585527-06	WG603302
Barium	mg/kg	140.	140.	1.44	20	L585527-06	WG603302
Cadmium	mg/kg	0.260	0.310	17.2	20	L585527-06	WG603302
Chromium	mg/kg	9.60	8.90	7.67	20	L585527-06	WG603302
Copper	mg/kg	18.0	20.0	11.1	20	L585527-06	WG603302
Lead	mg/kg	20.0	22.0	7.06	20	L585527-06	WG603302
Nickel	mg/kg	15.0	15.0	1.32	20	L585527-06	WG603302
Selenium	mg/kg	0	0	0	20	L585527-06	WG603302
Silver	mg/kg	0	0	0	20	L585527-06	WG603302
Zinc	mg/kg	320.	520.	47.0*	20	L585527-06	WG603302
Arsenic	mg/kg	12.0	9.30	22.9*	20	L587099-14	WG604897
Arsenic	mg/kg	5.30	4.70	11.8	20	L585527-10	WG605732

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0476	95.2	76-113	WG603277
Ethylbenzene	mg/kg	.05	0.0516	103.	78-115	WG603277
Toluene	mg/kg	.05	0.0491	98.1	76-114	WG603277
Total Xylene	mg/kg	.15	0.151	101.	81-118	WG603277

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
a,a,a-Trifluorotoluene(PID)				98.00	54-144	
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.28	132.	67-135	WG603277
a,a,a-Trifluorotoluene(FID)				95.87	59-128	WG603277
1-Methylnaphthalene	mg/kg	.033	0.0214	64.9	48-113	WG603304
2-Chloronaphthalene	mg/kg	.033	0.0212	64.2	51-114	WG603304
2-Methylnaphthalene	mg/kg	.033	0.0206	62.3	44-109	WG603304
Acenaphthene	mg/kg	.033	0.0221	66.9	52-108	WG603304
Acenaphthylene	mg/kg	.033	0.0230	69.7	51-110	WG603304
Anthracene	mg/kg	.033	0.0264	80.0	58-120	WG603304
Benzo(a)anthracene	mg/kg	.033	0.0316	95.9	54-110	WG603304
Benzo(a)pyrene	mg/kg	.033	0.0303	92.0	56-118	WG603304
Benzo(b)fluoranthene	mg/kg	.033	0.0312	94.6	55-114	WG603304
Benzo(g,h,i)perylene	mg/kg	.033	0.0301	91.3	48-130	WG603304
Benzo(k)fluoranthene	mg/kg	.033	0.0297	89.9	55-122	WG603304
Chrysene	mg/kg	.033	0.0291	88.3	57-118	WG603304
Dibenz(a,h)anthracene	mg/kg	.033	0.0301	91.1	53-122	WG603304
Fluoranthene	mg/kg	.033	0.0290	87.7	58-118	WG603304
Fluorene	mg/kg	.033	0.0240	72.7	54-109	WG603304
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0297	89.9	51-125	WG603304
Naphthalene	mg/kg	.033	0.0198	60.1	45-105	WG603304
Phenanthrene	mg/kg	.033	0.0249	75.4	53-114	WG603304
Pyrene	mg/kg	.033	0.0288	87.1	53-121	WG603304
2-Fluorobiphenyl				64.42	34-129	WG603304
Nitrobenzene-d5				60.83	14-141	WG603304
p-Terphenyl-d14				85.14	25-139	WG603304
TPH (GC/FID) High Fraction	ppm	60	48.2	80.4	50-150	WG603297
o-Terphenyl				58.21	50-150	WG603297
TPH (GC/FID) High Fraction	ppm	60	52.4	87.4	50-150	WG603385
o-Terphenyl				72.32	50-150	WG603385
ORP	mV	228	226.	99.1	95.6-104.	WG603522
Mercury	mg/kg	12.4	12.8	103.	71.6-128	WG603463
Chromium,Hexavalent	mg/kg	150	133.	88.7	50-150	WG603113
pH	su	5.7	5.76	101.*	98-101	WG603576
Specific Conductance	umhos/cm	495	511.	103.	85-115	WG603840
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	215.	90.7	83.1-117	WG603302
Barium	mg/kg	252	238.	94.4	84.1-116	WG603302
Cadmium	mg/kg	191	176.	92.1	83.2-117	WG603302

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

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Chromium	mg/kg	128	121.	94.5	81.3-118	WG603302
Copper	mg/kg	123	115.	93.5	83.7-116	WG603302
Lead	mg/kg	103	97.5	94.7	83.1-117	WG603302
Nickel	mg/kg	118	108.	91.5	82-118	WG603302
Selenium	mg/kg	110	102.	92.7	78.7-122	WG603302
Silver	mg/kg	47.3	41.3	87.3	66.2-134	WG603302
Zinc	mg/kg	183	165.	90.2	82-118	WG603302
Arsenic	mg/kg	237	250.	105.	83.1-117	WG604897
Arsenic	mg/kg	237	228.	96.2	83.1-117	WG605732

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0479	0.0476	96.0	76-113	0.610	20	WG603277
Ethylbenzene	mg/kg	0.0517	0.0516	103.	78-115	0.240	20	WG603277
Toluene	mg/kg	0.0491	0.0491	98.0	76-114	0.0800	20	WG603277
Total Xylene	mg/kg	0.151	0.151	101.	81-118	0.200	20	WG603277
a,a,a-Trifluorotoluene(PID)	mg/kg	7.20	7.28	97.47	54-144	0.980	20	WG603277
TPH (GC/FID) Low Fraction				131.	67-135			WG603277
a,a,a-Trifluorotoluene(FID)				95.35	59-128			WG603277
1-Methylnaphthalene	mg/kg	0.0171	0.0214	52.0	48-113	22.6	24	WG603304
2-Chloronaphthalene	mg/kg	0.0174	0.0212	53.0	51-114	19.5	24	WG603304
2-Methylnaphthalene	mg/kg	0.0167	0.0206	50.0	44-109	20.8	24	WG603304
Acenaphthene	mg/kg	0.0184	0.0221	56.0	52-108	18.4	22	WG603304
Acenaphthylene	mg/kg	0.0189	0.0230	57.0	51-110	19.8	21	WG603304
Anthracene	mg/kg	0.0220	0.0264	66.0	58-120	18.2	20	WG603304
Benzo(a)anthracene	mg/kg	0.0297	0.0316	90.0	54-110	6.26	22	WG603304
Benzo(a)pyrene	mg/kg	0.0284	0.0303	86.0	56-118	6.57	21	WG603304
Benzo(b)fluoranthene	mg/kg	0.0285	0.0312	86.0	55-114	9.14	20	WG603304
Benzo(g,h,i)perylene	mg/kg	0.0283	0.0301	86.0	48-130	6.20	20	WG603304
Benzo(k)fluoranthene	mg/kg	0.0285	0.0297	86.0	55-122	3.95	25	WG603304
Chrysene	mg/kg	0.0276	0.0291	84.0	57-118	5.48	20	WG603304
Dibenz(a,h)anthracene	mg/kg	0.0284	0.0301	86.0	53-122	5.85	20	WG603304
Fluoranthene	mg/kg	0.0260	0.0290	79.0	58-118	10.9	20	WG603304
Fluorene	mg/kg	0.0195	0.0240	59.0	54-109	20.7*	20	WG603304
Indeno(1,2,3-cd)pyrene	mg/kg	0.0279	0.0297	84.0	51-125	6.10	21	WG603304
Naphthalene	mg/kg	0.0157	0.0198	48.0	45-105	23.3	24	WG603304
Phenanthrene	mg/kg	0.0212	0.0249	64.0	53-114	16.1	20	WG603304
Pyrene	mg/kg	0.0267	0.0288	81.0	53-121	7.34	20	WG603304
2-Fluorobiphenyl				51.73	34-129			WG603304
Nitrobenzene-d5				47.79	14-141			WG603304
p-Terphenyl-d14				77.94	25-139			WG603304
TPH (GC/FID) High Fraction	ppm	44.5	48.2	74.0	50-150	7.91	25	WG603297
o-Terphenyl				53.86	50-150			WG603297
TPH (GC/FID) High Fraction	ppm	53.0	52.4	88.0	50-150	1.04	25	WG603385
o-Terphenyl				72.84	50-150			WG603385
ORP	mV	226.	226.	99.0	95.6-104.	0	20	WG603522

\* 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

L585527

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 02, 2012

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium, Hexavalent	mg/kg	131.	133.	87.0	50-150	1.52	20	WG603113
pH	su	5.74	5.76	101.	98-101	0.348	20	WG603576
Specific Conductance	umhos/	510.	511.	103.	85-115	0.196	20	WG603840
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

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
Benzene	mg/kg	0.223	0	.05	89.2	32-137	L585527-02	WG603277
Ethylbenzene	mg/kg	0.229	0	.05	91.8	10-150	L585527-02	WG603277
Toluene	mg/kg	0.228	0	.05	91.2	20-142	L585527-02	WG603277
Total Xylene	mg/kg	0.666	0	.15	88.8	16-141	L585527-02	WG603277
a,a,a-Trifluorotoluene(PID)					99.49	54-144		WG603277
TPH (GC/FID) Low Fraction	mg/kg	16.8	0	5.5	61.1	55-109	L585527-02	WG603277
a,a,a-Trifluorotoluene(FID)					92.69	59-128		WG603277
1-Methylnaphthalene	mg/kg	0.0225	0	.033	68.1	25-155	L585569-01	WG603304
2-Chloronaphthalene	mg/kg	0.0202	0	.033	61.1	31-153	L585569-01	WG603304
2-Methylnaphthalene	mg/kg	0.0228	0	.033	69.2	22-172	L585569-01	WG603304
Acenaphthene	mg/kg	0.0248	0	.033	75.2	43-133	L585569-01	WG603304
Acenaphthylene	mg/kg	0.0204	0	.033	61.8	42-146	L585569-01	WG603304
Anthracene	mg/kg	0.0230	0	.033	69.8	38-153	L585569-01	WG603304
Benzo(a)anthracene	mg/kg	0.0229	0	.033	69.4	31-142	L585569-01	WG603304
Benzo(a)pyrene	mg/kg	0.0218	0	.033	66.2	26-152	L585569-01	WG603304
Benzo(b)fluoranthene	mg/kg	0.0238	0	.033	72.2	10-188	L585569-01	WG603304
Benzo(g,h,i)perylene	mg/kg	0.0196	0	.033	59.4	10-176	L585569-01	WG603304
Benzo(k)fluoranthene	mg/kg	0.0199	0	.033	60.2	22-163	L585569-01	WG603304
Chrysene	mg/kg	0.0221	0	.033	67.1	26-146	L585569-01	WG603304
Dibenz(a,h)anthracene	mg/kg	0.0189	0	.033	57.2	10-160	L585569-01	WG603304
Fluoranthene	mg/kg	0.0265	0	.033	80.2	23-160	L585569-01	WG603304
Fluorene	mg/kg	0.0289	0.0110	.033	54.1	44-143	L585569-01	WG603304
Indeno(1,2,3-cd)pyrene	mg/kg	0.0196	0	.033	59.4	10-157	L585569-01	WG603304
Naphthalene	mg/kg	0.0208	0	.033	63.0	22-156	L585569-01	WG603304
Phenanthrene	mg/kg	0.0310	0.0160	.033	45.6	23-164	L585569-01	WG603304
Pyrene	mg/kg	0.0252	0.0100	.033	46.1	12-170	L585569-01	WG603304
2-Fluorobiphenyl					61.40	34-129		WG603304
Nitrobenzene-d5					61.44	14-141		WG603304
p-Terphenyl-d14					57.74	25-139		WG603304
TPH (GC/FID) High Fraction	ppm	47.4	0	60	79.0	50-150	L585362-05	WG603297
o-Terphenyl					52.82	50-150		WG603297
TPH (GC/FID) High Fraction	ppm	55.9	0	60	93.2	50-150	L585647-10	WG603385
o-Terphenyl					73.58	50-150		WG603385
Mercury	mg/kg	0.282	0	.25	113.	80-120	L585715-09	WG603463

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 02, 2012

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Chromium,Hexavalent	mg/kg	14.5	0	20	72.5	50-150	L585229-02	WG603113
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
Arsenic	mg/kg	40.4	2.40	50	76.0	75-125	L585527-06	WG603302
Barium	mg/kg	174.	140.	50	68.0*	75-125	L585527-06	WG603302
Cadmium	mg/kg	43.4	0.310	50	86.2	75-125	L585527-06	WG603302
Chromium	mg/kg	48.4	8.90	50	79.0	75-125	L585527-06	WG603302
Copper	mg/kg	63.2	20.0	50	86.4	75-125	L585527-06	WG603302
Lead	mg/kg	58.4	22.0	50	72.8*	75-125	L585527-06	WG603302
Nickel	mg/kg	48.8	15.0	50	67.6*	75-125	L585527-06	WG603302
Selenium	mg/kg	37.9	0	50	75.8	75-125	L585527-06	WG603302
Silver	mg/kg	43.6	0	50	87.2	75-125	L585527-06	WG603302
Zinc	mg/kg	456.	520.	50	0*	75-125	L585527-06	WG603302
Arsenic	mg/kg	60.5	9.30	50	102.	75-125	L587099-14	WG604897
Arsenic	mg/kg	52.3	4.70	50	95.2	75-125	L585527-10	WG605732

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.224	0.223	89.5	32-137	0.290	39	L585527-02	WG603277
Ethylbenzene	mg/kg	0.227	0.229	90.9	10-150	0.940	44	L585527-02	WG603277
Toluene	mg/kg	0.225	0.228	90.1	20-142	1.30	42	L585527-02	WG603277
Total Xylene	mg/kg	0.662	0.666	88.2	16-141	0.630	46	L585527-02	WG603277
a,a,a-Trifluorotoluene(PID)				97.13	54-144				WG603277
TPH (GC/FID) Low Fraction	mg/kg	28.9	16.8	105.	55-109	53.0*	20	L585527-02	WG603277
a,a,a-Trifluorotoluene(FID)				94.11	59-128				WG603277
1-Methylnaphthalene	mg/kg	0.0293	0.0225	88.9	25-155	26.4	27	L585569-01	WG603304
2-Chloronaphthalene	mg/kg	0.0240	0.0202	72.8	31-153	17.5	22	L585569-01	WG603304
2-Methylnaphthalene	mg/kg	0.0302	0.0228	91.4	22-172	27.6	29	L585569-01	WG603304
Acenaphthene	mg/kg	0.0304	0.0248	92.0	43-133	20.2	26	L585569-01	WG603304
Acenaphthylene	mg/kg	0.0249	0.0204	75.4	42-146	19.9	22	L585569-01	WG603304
Anthracene	mg/kg	0.0285	0.0230	86.4	38-153	21.3	27	L585569-01	WG603304
Benzo(a)anthracene	mg/kg	0.0314	0.0229	95.0	31-142	31.2*	31	L585569-01	WG603304
Benzo(a)pyrene	mg/kg	0.0285	0.0218	86.2	26-152	26.4	32	L585569-01	WG603304
Benzo(b)fluoranthene	mg/kg	0.0328	0.0238	99.3	10-188	31.5	33	L585569-01	WG603304
Benzo(g,h,i)perylene	mg/kg	0.0225	0.0196	68.2	10-176	13.9	30	L585569-01	WG603304
Benzo(k)fluoranthene	mg/kg	0.0268	0.0199	81.2	22-163	29.8*	29	L585569-01	WG603304
Chrysene	mg/kg	0.0288	0.0221	87.3	26-146	26.2	30	L585569-01	WG603304
Dibenz(a,h)anthracene	mg/kg	0.0223	0.0189	67.5	10-160	16.4	39	L585569-01	WG603304
Fluoranthene	mg/kg	0.0357	0.0265	108.	23-160	29.7*	22	L585569-01	WG603304
Fluorene	mg/kg	0.0363	0.0289	76.6	44-143	22.8	23	L585569-01	WG603304
Indeno(1,2,3-cd)pyrene	mg/kg	0.0234	0.0196	70.9	10-157	17.6	40	L585569-01	WG603304
Naphthalene	mg/kg	0.0250	0.0208	75.7	22-156	18.3	27	L585569-01	WG603304
Phenanthrene	mg/kg	0.0440	0.0310	84.8	23-164	34.5*	25	L585569-01	WG603304
Pyrene	mg/kg	0.0342	0.0252	73.2	12-170	30.2*	24	L585569-01	WG603304
2-Fluorobiphenyl				70.86	34-129				WG603304
Nitrobenzene-d5				76.27	14-141				WG603304
p-Terphenyl-d14				69.22	25-139				WG603304

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Rangely, CO 81648-3600

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Level II

L585527

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 02, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction o-Terphenyl	ppm	42.6	47.4	71.0 49.21*	50-150 50-150	10.7	25	L585362-05	WG603297 WG603297
TPH (GC/FID) High Fraction o-Terphenyl	ppm	53.6	55.9	89.4 69.10	50-150 50-150	4.20	25	L585647-10	WG603385 WG603385
Mercury	mg/kg	0.256	0.282	102.	80-120	9.67	20	L585715-09	WG603463
Chromium, Hexavalent	mg/kg	16.1	14.5	80.5	50-150	10.5	20	L585229-02	WG603113
TPH (GC/FID) High Fraction o-Terphenyl	ppm	44.8	47.5	67.1 45.45*	50-150 50-150	5.94	25	L585314-03	WG604113 WG604113
Arsenic	mg/kg	46.6	40.4	88.4	75-125	14.3	20	L585527-06	WG603302
Barium	mg/kg	192.	174.	104.	75-125	9.84	20	L585527-06	WG603302
Cadmium	mg/kg	45.8	43.4	91.0	75-125	5.38	20	L585527-06	WG603302
Chromium	mg/kg	57.9	48.4	98.0	75-125	17.9	20	L585527-06	WG603302
Copper	mg/kg	65.4	63.2	90.8	75-125	3.42	20	L585527-06	WG603302
Lead	mg/kg	66.2	58.4	88.4	75-125	12.5	20	L585527-06	WG603302
Nickel	mg/kg	60.0	48.8	90.0	75-125	20.6*	20	L585527-06	WG603302
Selenium	mg/kg	43.9	37.9	87.8	75-125	14.7	20	L585527-06	WG603302
Silver	mg/kg	45.1	43.6	90.2	75-125	3.38	20	L585527-06	WG603302
Zinc	mg/kg	410.	456.	0*	75-125	10.6	20	L585527-06	WG603302
Arsenic	mg/kg	58.7	60.5	98.8	75-125	3.02	20	L587099-14	WG604897
Arsenic	mg/kg	55.7	52.3	102.	75-125	6.30	20	L585527-10	WG605732

Batch number / Run number / Sample number cross reference

WG603277: R2261293: L585527-01 02 03 04 05 06  
WG603304: R2262153: L585527-06  
WG603257: R2263933: L585527-06  
WG603297: R2264494: L585527-03 04  
WG603385: R2264495: L585527-05 06  
WG603522: R2264533: L585527-06  
WG603463: R2264673: L585527-06  
WG603113: R2264833: L585527-06  
WG603576: R2265315: L585527-06  
WG603840: R2268793: L585527-06  
WG604113: R2271914: L585527-01 02  
WG603302: R2274753: L585527-06  
WG604897: R2276794: L585527-11  
WG605732: R2284994 R2284995: L585527-09 08 10

\* \* 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.

A177

Chain of Custody  
Page 1 of 212065 Lebanon Road  
Mt. Juliet, TN 37122

Phone: (800) 767-5859

Phone: (615) 758-5858

Fax: (615) 758-5859

07-0032

CoCode ENCANRCO (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant Sample # (lab only)

Encana Oil & Gas  
1125 Escalante Drive  
Rangely, CO 81648-3600  
\*ENCANRCO\*

## Billing Information:

Blake Ford  
1125 Escalante Drive  
Rangely, CO 81648-3600  
(970) 675-4414

Report to:

Blake Ford

Email to:

blake.ford@encana.com

## Analysis/Container/Preservative

BTEXGRO / DRO - 8021/8015	SV8270PAHSIM - 8270SIM	SPCON - 9050AMod	SAR - Calc.	RCRA8 Metals + Cu, Ni, and Zn - 6010/7470	CR6SS - 3060A/7196, CR3 - Calc.	SAR, As
---------------------------	------------------------	------------------	-------------	---	---------------------------------	---------

Project Description: 27-13 Site Clearance

City/State Collected: Rangely CO  
ESC Key: ENCANRCOPhone: (970) 675-4414  
FAX:

Client Project #: 27-13

Collected by: Brad Ward

Site/Facility ID#: 27-13

P.O.#:

Collected by (signature):

**Rush?** (Lab MUST Be Notified)

☐ Same Day.....200%  
☐ Next Day.....100%  
☐ Two Day.....50%  
☐ Three Day.....25%

Date Results Needed:

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.  
of  
Cntrs

Immediately Packed on Ice N

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Cntrs	BTE	SV8	SPC	SAR	RCR	CR6	SAR	Shipped Via:		
														Remarks/Contaminant	Sample # (lab only)	
27-13-BG1N-6"-071612	Grab	SS	6"	7/16/12	1555	1								Please Hand ↓		
27-13-BG2W-6"-071612	Grab	SS		7/16/12	1605	1										
27-13-BG3S-6"-071612	Grab	SS		7/16/12	1615	1										
27-13-BG4E-6"-071612	Grab	SS		7/16/12	1625	1										
27-13-NSW-5'-071612	Grab	SS	5'	7/16/12	1445	2	X								L565527-01	
27-13-WSW-5'-071612	Grab	SS	5'	7/16/12	1455	2	X								-02	
27-13-SSW-5'-071612	Grab	SS	5'	7/16/12	1500	2	X								-03	
27-13-ESW-2'-071612	Grab	SS	2'	7/16/12	1440	2	X								-04	
27-13-BBT-7'-071612	Grab	SS	7'	7/16/12	1515	2	X								-05	

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

pH Temp

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

508638 26 413.56 Flow Other

Relinquished by: (Signature)	Date: 7/17/12	Time: 1000	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.6°C	Bottles Received: 17-402
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/18/12	Time: 0900
				pH Checked:	NCF:

CoC Seals Intact: ☒ Y ☐ N ☐ NA

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp:	Bottles Received:
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:

## Susan Peach

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**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)

