

FORM
4
Rev 12/05

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
<div>RECEIVED 3/24/2014</div>			

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 Charlie 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- 103-09708	OGCC Facility ID Number 316072	Survey Plat
6. Well/Facility Name: Cathedral Federal #3-7	7. Well/Facility Number 3-7	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): SWNE, Sec 3, 03S, 101W, 6th PM		Surface Eqpm Diagram
9. County: Rio Blanco	10. Field Name: Cathedral Federal Unit	Technical Info Page
11. Federal, Indian or State Lease Number: 44664		Other NOC

General Notice

☐ 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 _____

☐ CHANGE SPACING UNIT
Formation _____ Formation Code _____ Spacing order number _____ Unit Acreage _____ Unit configuration _____

☐ Remove from surface bond
Signed surface use agreement attached

☐ CHANGE OF OPERATOR (prior to drilling):
Effective Date: _____
Plugging Bond: ☐ Blanket ☐ Individual

☐ CHANGE WELL NAME
From: _____
To: _____
Effective Date: _____

NUMBER

☐ ABANDONED LOCATION:
Was location ever built? ☐ Yes ☐ No
Is site ready for Inspection? ☐ Yes ☐ No
Date Ready for Inspection: _____

☐ NOTICE OF CONTINUED SHUT IN STATUS
Date well shut in or temporarily abandoned: _____
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT _____

☐ SPUD DATE: _____

☐ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

☐ 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

☐ 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

☐ Notice of Intent
Approximate Start Date: _____

☒ Report of Work Done
Date Work Completed: 9/26/12

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: Charlie 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: 05-103-09708 |
| 2. Name of Operator: EnCana Oil and Gas (USA), Inc | OGCC Facility ID # 316072 |
| 3. Well/Facility Name: Cathedral Federal #3-7 | Well/Facility Number: 3-7 |
| 4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWNE, Sec 3, 03S, 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)

Culvert Pit Closure (CFU 3-7)

Document Date-6/24/13

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 #3-7 (COGCC facility #316072, COGCC remediation #7177). 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 12 & 13, 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 500 cubic yards of excavated material was removed from the pit and laid out in a five (5) foot tall (66' x 50') lift for evaluation of impacts. The lift of excavated material was sampled by way of a nine (9) point composite sample. 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 #3-7 well pad, had organic constituent concentrations below or within COGCC Table 910-1 except for Total Volatile and Extractable Petroleum Hydrocarbons (TPH) (1002.8 ppm) in the excavated material. Analytical results indicated the excavated material exceeded COGCC Table 910-1 allowable concentrations for arsenic (8.9 ppm). Though the arsenic concentration in the soil is above the allowable concentration identified in Table 910-1, the concentration is close to the range of arsenic background values (3.3 – 6.8 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. Please see Table 1 and Attachment A for the analytical results.

Though the elevated arsenic 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 arsenic will have no adverse effect on future re-vegetation efforts and receptors in the area. Please see Table 1 and Attachment A for analytical results.



NARRATIVE ATTACHMENT

FORM 4 (SUNDRY NOTICE)

Culvert Pit Closure (CFU 3-7)

Document Date-6/24/13

The lift of excavated material that exceeded COGCC Table 910-1 allowable concentration levels for TPH was amended with fertilizer and water. The material was saturated with water and mixed on a weekly basis. On September 26, 2012 the lift of material was sampled by way of a nine (9) point composite sample. Sample results indicate that the lift of excavated material was within or below COGCC Table 910-1 allowable concentration levels.

Conclusion

Based on the site investigation and analytical results, the culvert pit associated with the Cathedral Federal Unit #3-7 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 #7177.

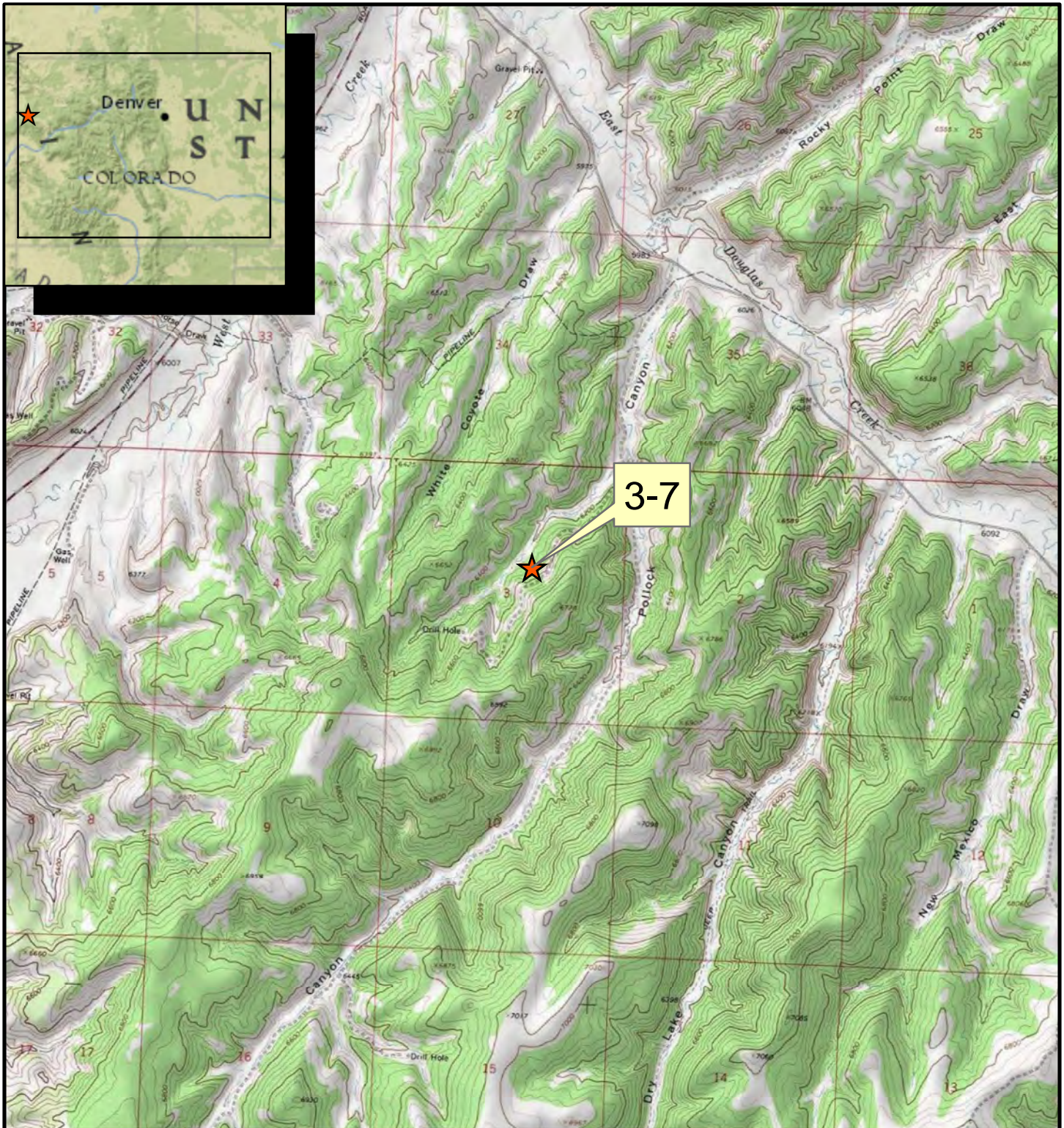
Notification of Completion

This Sundry Notice is also being submitted as the Notification of Completion for Remediation #7177. If the information provided here is satisfactory, please provide documentation of the closure of this remediation project.

Attachments

Topographic Location Map (Figure 1)
3-7 Aerial map with sample locations (Figure 2)
3-7 Site Diagram of Excavation and sample locations (Figure 3)
Laboratory Results Summary Table 1 – 3-7 Site Investigation (Table 1)
Attachment A- Laboratory Reports





Legend

★ 3-7 Site Location



0 0.25 0.5 1 1.5 Miles

Rule Engineering, LLC
Solutions to Regulations for Industry



3-7
Site Location Map

DATE: 10/13/2012 JG FILE: \\Encana\Figures\Rangely\3-7\121013 Figure 1.pdf

FIGURE: 1



Legend

★ Soil Sample Location

0 37.5 75 150 225 Feet



Rule Engineering, LLC
Solutions to Regulations for Industry



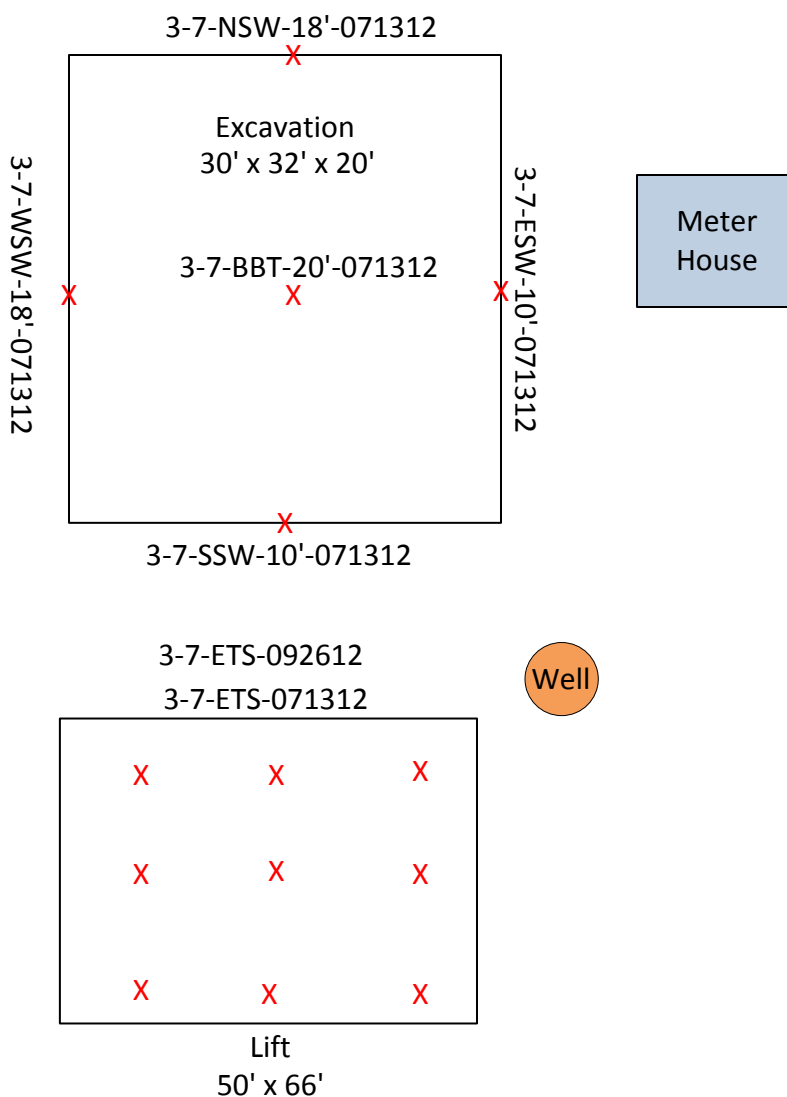
3-7
Sample Location Map

DATE: 10/13/2012 JG FILE: \\EnCana\Figures\Rangely\3-7\121013 Sample Location Map.pdf

FIGURE: 2



Direction of
Flow



Legend
X-Sample



Well: Figure 3. 3-7 Site Diagram

Area: Cathedral Federal Unit

Legal: SWNE, Sec 3, 03S, 101W, 6th PM

Date: 10/09/12

Drawn By: Shad Johnson

Revision Date:

Scale: None

[illegible]

Appendix 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

Friday August 03, 2012

Report Number: L585652


Samples Received: 07/18/12

Client Project: 3-7

Description: 3-7 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:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-SSW-10-071312
Collected By : Brad Ward
Collection Date : 07/13/12 10:30

ESC Sample # : L585652-01

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/19/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/19/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/19/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/19/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/19/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.8		% Rec.	8021/8015	07/19/12	5
a,a,a-Trifluorotoluene(PID)	98.3		% Rec.	8021/8015	07/19/12	5
TPH (GC/FID) High Fraction	7.3	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	56.7		% 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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Tax I.D. 62-0814289

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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-ESW-10-071312
Collected By : Brad Ward
Collection Date : 07/13/12 10:00

ESC Sample # : L585652-02

Site ID : 3-7

Project # : 3-7

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)	92.8		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	5.3	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	67.5		% 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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-BBT-20-071312
Collected By : Brad Ward
Collection Date : 07/13/12 10:55

ESC Sample # : L585652-03

Site ID : 3-7

Project # : 3-7

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)	93.0		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	97.7		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	14.	4.0	mg/kg	3546/DRO	07/20/12	1
Surrogate recovery(%)						
o-Terphenyl	63.1		% Rec.	3546/DRO	07/20/12	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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-ETS-071312
Collected By : Brad Ward
Collection Date : 07/13/12 13:30

ESC Sample # : L585652-04

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	4.0	mg/kg	3060A/7196A	07/20/12	2
Chromium,Trivalent	8.4	4.0	mg/kg	Calc.	07/27/12	1
ORP	270		mV	2580	07/20/12	1
pH	7.8		su	9045D	07/20/12	1
Sodium Adsorption Ratio	5.0			Calc.	07/25/12	1
Specific Conductance	2900		umhos/cm	9050AMod	07/23/12	1
Mercury	0.030	0.020	mg/kg	7471	07/20/12	1
Arsenic	8.9	1.0	mg/kg	6010B	07/27/12	1
Barium	52.	0.25	mg/kg	6010B	07/27/12	1
Cadmium	BDL	0.25	mg/kg	6010B	07/27/12	1
Chromium	8.4	0.50	mg/kg	6010B	07/27/12	1
Copper	12.	1.0	mg/kg	6010B	07/27/12	1
Lead	20.	0.25	mg/kg	6010B	07/27/12	1
Nickel	11.	1.0	mg/kg	6010B	07/28/12	1
Selenium	1.3	1.0	mg/kg	6010B	07/27/12	1
Silver	BDL	0.50	mg/kg	6010B	07/27/12	1
Zinc	63.	1.5	mg/kg	6010B	07/27/12	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	0.010	0.0025	mg/kg	8021/8015	07/20/12	5
Total Xylene	0.029	0.0075	mg/kg	8021/8015	07/20/12	5
TPH (GC/FID) Low Fraction	2.8	0.50	mg/kg	GRO	07/20/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	85.0		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	92.0		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	1000	80.	mg/kg	3546/DRO	07/23/12	20
Surrogate recovery(%)						
o-Terphenyl	98.0		% Rec.	3546/DRO	07/23/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Acenaphthene	0.012	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)
L585652-04 (PH) - 7.8@20.9c
L585652-04 (CR6) - diluted due to sample color interference



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REPORT OF ANALYSIS

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

August 03, 2012

Date Received : July 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-ETS-071312
Collected By : Brad Ward
Collection Date : 07/13/12 13:30

ESC Sample # : L585652-04

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.014	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	0.019	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	0.017	0.0060	mg/kg	8270C-SIM	07/20/12	1
Fluorene	0.019	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	0.096	0.060	mg/kg	8270C-SIM	07/21/12	10
Phenanthrene	0.059	0.0060	mg/kg	8270C-SIM	07/20/12	1
Pyrene	0.0073	0.0060	mg/kg	8270C-SIM	07/20/12	1
1-Methylnaphthalene	0.20	0.060	mg/kg	8270C-SIM	07/21/12	10
2-Methylnaphthalene	0.20	0.060	mg/kg	8270C-SIM	07/21/12	10
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/20/12	1
Surrogate Recovery						
Nitrobenzene-d5	169.		% Rec.	8270C-SIM	07/21/12	10
2-Fluorobiphenyl	127.		% Rec.	8270C-SIM	07/20/12	1
p-Terphenyl-d14	112.		% Rec.	8270C-SIM	07/20/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L585652-04 (PH) - 7.8@20.9c

L585652-04 (CR6) - diluted due to sample color interference



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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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-NSW-18-071312
Collected By : Brad Ward
Collection Date : 07/13/12 10:15

ESC Sample # : L585652-05

Site ID : 3-7

Project # : 3-7

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)	92.9		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	07/20/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/24/12	1
Surrogate recovery(%)						
o-Terphenyl	59.7		% Rec.	3546/DRO	07/24/12	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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7-WSW-18-071312
Collected By : Brad Ward
Collection Date : 07/13/12 10:45

ESC Sample # : L585652-06

Site ID : 3-7

Project # : 3-7

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)	93.0		% Rec.	8021/8015	07/20/12	5
a,a,a-Trifluorotoluene(PID)	98.2		% 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	70.0		% 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 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7BG1N-6IN-071212
Collected By : Brad Ward
Collection Date : 07/12/12 08:40

ESC Sample # : L585652-07

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.4	1.0	mg/kg	6010B	07/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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

August 03, 2012

Date Received : July 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7BG2W-6IN-071212
Collected By : Brad Ward
Collection Date : 07/12/12 08:50

ESC Sample # : L585652-08

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.8	1.0	mg/kg	6010B	08/02/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Rangely, CO 81648-3600

August 03, 2012

Date Received : July 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7BG3S-6IN-071212
Collected By : Brad Ward
Collection Date : 07/12/12 09:00

ESC Sample # : L585652-09

Site ID : 3-7
Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.3	1.0	mg/kg	6010B	08/02/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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August 03, 2012

Date Received : July 18, 2012
Description : 3-7 Site Clearance
Sample ID : 3-7BG4E-6IN-071212
Collected By : Brad Ward
Collection Date : 07/12/12 09:10

ESC Sample # : L585652-10

Site ID : 3-7
Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.4	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
L585652-04	WG603530	SAMP	Nitrobenzene-d5	R2265053	J1
	WG603576	SAMP	pH	R2265315	T8
	WG603113	SAMP	Chromium, Hexavalent	R2264833	O
	WG603529	SAMP	o-Terphenyl	R2264513	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG603399	07/19/12 15:09
Ethylbenzene	< .0005	mg/kg			WG603399	07/19/12 15:09
Toluene	< .005	mg/kg			WG603399	07/19/12 15:09
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG603399	07/19/12 15:09
Total Xylene	< .0015	mg/kg			WG603399	07/19/12 15:09
a,a,a-Trifluorotoluene(FID)		% Rec.	93.21	59-128	WG603399	07/19/12 15:09
a,a,a-Trifluorotoluene(PID)		% Rec.	98.67	54-144	WG603399	07/19/12 15:09
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
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
Mercury	< .02	mg/kg			WG603548	07/20/12 12:04
Chromium, Hexavalent	< 2	mg/kg			WG603113	07/20/12 14:59
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			WG603715	07/20/12 18:59
Ethylbenzene	< .0005	mg/kg			WG603715	07/20/12 18:59
Toluene	< .005	mg/kg			WG603715	07/20/12 18:59
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG603715	07/20/12 18:59
Total Xylene	< .0015	mg/kg			WG603715	07/20/12 18:59
a,a,a-Trifluorotoluene(FID)		% Rec.	84.94	59-128	WG603715	07/20/12 18:59
a,a,a-Trifluorotoluene(PID)		% Rec.	92.78	54-144	WG603715	07/20/12 18:59

* 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			
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			WG603508	07/27/12 08:09
Barium	< .25	mg/kg			WG603508	07/27/12 08:09
Cadmium	< .25	mg/kg			WG603508	07/27/12 08:09
Chromium	< .5	mg/kg			WG603508	07/27/12 08:09
Copper	< 1	mg/kg			WG603508	07/27/12 08:09
Lead	< .25	mg/kg			WG603508	07/27/12 08:09
Selenium	< 1	mg/kg			WG603508	07/27/12 08:09
Silver	< .5	mg/kg			WG603508	07/27/12 08:09
Zinc	< 1.5	mg/kg			WG603508	07/27/12 08:09
Arsenic	< 1	mg/kg			WG604897	07/28/12 12:14
Nickel	< 1	mg/kg			WG603508	07/28/12 12:59
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
Arsenic	< 1	mg/kg			WG605113	08/02/12 14:00

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
ORP	mV	220.	210.	2.35	20	L585068-01	WG603522
Mercury	mg/kg	0.110	0.0620	59.1*	20	L585618-05	WG603548
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	8.90	10.0	11.3	20	L585816-04	WG603508
Barium	mg/kg	200.	158.	23.0*	20	L585816-04	WG603508
Cadmium	mg/kg	0	0	0	20	L585816-04	WG603508
Chromium	mg/kg	14.0	13.6	0.733	20	L585816-04	WG603508
Copper	mg/kg	16.0	13.7	13.0	20	L585816-04	WG603508
Selenium	mg/kg	1.40	1.14	17.6	20	L585816-04	WG603508
Zinc	mg/kg	47.0	43.7	6.42	20	L585816-04	WG603508
Lead	mg/kg	25.0	0	NA	20	L585816-04	WG603508
Silver	mg/kg	0	0	0	20	L585816-04	WG603508

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Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	12.0	9.30	22.9*	20	L587099-14	WG604897
Nickel	mg/kg	16.0	0	NA	20	L585816-04	WG603508
Arsenic	mg/kg	7.30	6.80	6.82	20	L585652-08	WG605113
Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch	
		Known Val	Result				
Benzene	mg/kg	.05	0.0480	96.1	76-113	WG603399	
Ethylbenzene	mg/kg	.05	0.0532	106.	78-115	WG603399	
Toluene	mg/kg	.05	0.0501	100.	76-114	WG603399	
Total Xylene	mg/kg	.15	0.156	104.	81-118	WG603399	
a,a,a-Trifluorotoluene(PID)	mg/kg	5.5	7.34	98.25	54-144	WG603399	
TPH (GC/FID) Low Fraction				133.	67-135	WG603399	
a,a,a-Trifluorotoluene(FID)				96.32	59-128	WG603399	
TPH (GC/FID) High Fraction	ppm	60	52.4	87.4	50-150	WG603385	
o-Terphenyl				72.32	50-150	WG603385	
TPH (GC/FID) High Fraction	ppm	60	40.8	67.9	50-150	WG603529	
o-Terphenyl				52.82	50-150	WG603529	
ORP	mV	228	226.	99.1	95.6-104.	WG603522	
Mercury	mg/kg	12.4	13.2	106.	71.6-128	WG603548	
Chromium,Hexavalent	mg/kg	150	133.	88.7	50-150	WG603113	
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	
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	

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	5.7	5.76	101.*	98-101	WG603576
Benzene	mg/kg	.05	0.0492	98.4	76-113	WG603715
Ethylbenzene	mg/kg	.05	0.0504	101.	78-115	WG603715
Toluene	mg/kg	.05	0.0487	97.4	76-114	WG603715
Total Xylene	mg/kg	.15	0.155	103.	81-118	WG603715
a,a,a-Trifluorotoluene(PID)				91.41	54-144	WG603715
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.04	91.7	67-135	WG603715
a,a,a-Trifluorotoluene(FID)				87.61	59-128	WG603715
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	210.	88.6	83.1-117	WG603508
Barium	mg/kg	252	230.	91.3	84.1-116	WG603508
Cadmium	mg/kg	191	166.	86.9	83.2-117	WG603508
Chromium	mg/kg	128	110.	85.9	81.3-118	WG603508
Copper	mg/kg	123	111.	90.2	83.7-116	WG603508
Lead	mg/kg	103	101.	98.1	83.1-117	WG603508
Selenium	mg/kg	110	98.2	89.3	78.7-122	WG603508
Silver	mg/kg	47.3	40.7	86.0	66.2-134	WG603508
Zinc	mg/kg	183	158.	86.3	82-118	WG603508
Arsenic	mg/kg	237	250.	105.	83.1-117	WG604897
Nickel	mg/kg	118	110.	93.2	82-118	WG603508
TPH (GC/FID) High Fraction	ppm	60	52.0	86.6	50-150	WG605762
o-Terphenyl				71.80	50-150	WG605762
Arsenic	mg/kg	237	223.	94.1	83.1-117	WG605113

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0472	0.0480	94.0	76-113	1.83	20	WG603399
Ethylbenzene	mg/kg	0.0520	0.0532	104.	78-115	2.26	20	WG603399
Toluene	mg/kg	0.0491	0.0501	98.0	76-114	2.03	20	WG603399
Total Xylene	mg/kg	0.153	0.156	102.	81-118	2.09	20	WG603399
a,a,a-Trifluorotoluene(PID)				98.25	54-144			WG603399
TPH (GC/FID) Low Fraction	mg/kg	7.34	7.34	133.	67-135	0.0400	20	WG603399
a,a,a-Trifluorotoluene(FID)				96.05	59-128			WG603399
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
TPH (GC/FID) High Fraction	ppm	42.0	40.8	70.0	50-150	2.99	25	WG603529

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Quality Assurance Report
Level II

L585652

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Est. 1970

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
o-Terphenyl				55.97	50-150			
ORP	mV	226.	226.	99.0	95.6-104.	0	20	WG603522
Chromium, Hexavalent	mg/kg	131.	133.	87.0	50-150	1.52	20	WG603113
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	0.0508	0.0492	102.	76-113	3.29	20	WG603715
Ethylbenzene	mg/kg	0.0521	0.0504	104.	78-115	3.26	20	WG603715
Toluene	mg/kg	0.0502	0.0487	100.	76-114	3.08	20	WG603715
Total Xylene	mg/kg	0.160	0.155	106.	81-118	3.10	20	WG603715
a,a,a-Trifluorotoluene(PID)				91.66	54-144			WG603715
TPH (GC/FID) Low Fraction	mg/kg	5.49	5.04	100.	67-135	8.53	20	WG603715
a,a,a-Trifluorotoluene(FID)				89.54	59-128			WG603715
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
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			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.237	0	.05	94.9	32-137	L585647-06	WG603399
Ethylbenzene	mg/kg	0.242	0	.05	96.9	10-150	L585647-06	WG603399
Toluene	mg/kg	0.235	0	.05	94.0	20-142	L585647-06	WG603399

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Total Xylene	mg/kg	0.680	0	.15	90.7	16-141	L585647-06	WG603399
a,a,a-Trifluorotoluene(PID)					97.86	54-144		WG603399
TPH (GC/FID) Low Fraction	mg/kg	29.4	0	5.5	107.	55-109	L585647-06	WG603399
a,a,a-Trifluorotoluene(FID)					94.78	59-128		WG603399
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	0.320	0.0620	.25	103.	80-120	L585618-05	WG603548
Chromium, Hexavalent	mg/kg	14.5	0	20	72.5	50-150	L585229-02	WG603113
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	0.224	0	.05	89.6	32-137	L586013-06	WG603715
Ethylbenzene	mg/kg	0.226	0	.05	90.4	10-150	L586013-06	WG603715
Toluene	mg/kg	0.225	0	.05	89.9	20-142	L586013-06	WG603715
Total Xylene	mg/kg	0.704	0	.15	93.8	16-141	L586013-06	WG603715
a,a,a-Trifluorotoluene(PID)					90.89	54-144		WG603715
TPH (GC/FID) Low Fraction	mg/kg	22.5	0	5.5	81.8	55-109	L586013-06	WG603715
a,a,a-Trifluorotoluene(FID)					86.66	59-128		WG603715
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
Arsenic	mg/kg	56.0	10.0	50	92.0	75-125	L585816-04	WG603508
Barium	mg/kg	230.	158.	50	144.*	75-125	L585816-04	WG603508

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Cadmium	mg/kg	47.0	0	50	94.0	75-125	L585816-04	WG603508
Chromium	mg/kg	60.8	13.6	50	94.4	75-125	L585816-04	WG603508
Copper	mg/kg	64.4	13.7	50	101.	75-125	L585816-04	WG603508
Selenium	mg/kg	45.2	1.14	50	88.1	75-125	L585816-04	WG603508
Zinc	mg/kg	95.9	43.7	50	104.	75-125	L585816-04	WG603508
Lead	mg/kg	88.0	0	50	176.*	75-125	L585816-04	WG603508
Silver	mg/kg	53.4	0	50	107.	75-125	L585816-04	WG603508

Arsenic	mg/kg	60.5	9.30	50	102.	75-125	L587099-14	WG604897
Nickel	mg/kg	70.5	0	10	141.*	75-125	L585816-04	WG603508
Arsenic	mg/kg	54.5	6.80	50	95.4	75-125	L585652-08	WG605113

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.229	0.237	91.7	32-137	3.42	39	L585647-06	WG603399
Ethylbenzene	mg/kg	0.218	0.242	87.2	10-150	10.5	44	L585647-06	WG603399
Toluene	mg/kg	0.220	0.235	87.9	20-142	6.67	42	L585647-06	WG603399
Total Xylene	mg/kg	0.634	0.680	84.5	16-141	7.11	46	L585647-06	WG603399
a,a,a-Trifluorotoluene(PID)				97.42	54-144				WG603399
TPH (GC/FID) Low Fraction	mg/kg	25.7	29.4	93.6	55-109	13.2	20	L585647-06	WG603399
a,a,a-Trifluorotoluene(FID)				94.09	59-128				WG603399
TPH (GC/FID) High Fraction	ppm	53.6	55.9	89.4	50-150	4.20	25	L585647-10	WG603385
o-Terphenyl				69.10	50-150				WG603385
Mercury	mg/kg	0.323	0.320	104.	80-120	0.933	20	L585618-05	WG603548
Chromium,Hexavalent	mg/kg	16.1	14.5	80.5	50-150	10.5	20	L585229-02	WG603113
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

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Nitrobenzene-d5				75.44	14-141					
p-Terphenyl-d14				86.30	25-139					
Benzene	mg/kg	0.253	0.224	101.	32-137	12.3	39	L586013-06	WG603715	
Ethylbenzene	mg/kg	0.251	0.226	100.	10-150	10.6	44	L586013-06	WG603715	
Toluene	mg/kg	0.243	0.225	97.4	20-142	7.96	42	L586013-06	WG603715	
Total Xylene	mg/kg	0.777	0.704	104.	16-141	9.85	46	L586013-06	WG603715	
a,a,a-Trifluorotoluene(PID)				91.38	54-144					
TPH (GC/FID) Low Fraction	mg/kg	19.9	22.5	72.5	55-109	12.0	20	L586013-06	WG603715	
a,a,a-Trifluorotoluene(FID)				86.27	59-128					
TPH (GC/FID) High Fraction	ppm	330.	212.	133.	50-150	43.7*	25	L585816-07	WG603529	
o-Terphenyl				46.57*	50-150					
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					
Arsenic	mg/kg	56.0	56.0	92.0	75-125	0	20	L585816-04	WG603508	
Barium	mg/kg	202.	230.	88.0	75-125	13.0	20	L585816-04	WG603508	
Cadmium	mg/kg	48.3	47.0	96.6	75-125	2.73	20	L585816-04	WG603508	
Chromium	mg/kg	60.6	60.8	94.0	75-125	0.329	20	L585816-04	WG603508	
Copper	mg/kg	63.1	64.4	98.8	75-125	2.04	20	L585816-04	WG603508	
Selenium	mg/kg	46.1	45.2	89.9	75-125	1.97	20	L585816-04	WG603508	
Zinc	mg/kg	89.8	95.9	92.2	75-125	6.57	20	L585816-04	WG603508	
Lead	mg/kg	80.2	88.0	160.*	75-125	9.27	20	L585816-04	WG603508	
Silver	mg/kg	51.9	53.4	104.	75-125	2.85	20	L585816-04	WG603508	
Arsenic	mg/kg	58.7	60.5	98.8	75-125	3.02	20	L587099-14	WG604897	
Nickel	mg/kg	67.0	70.5	134.*	75-125	5.09	20	L585816-04	WG603508	
Arsenic	mg/kg	56.0	54.5	98.4	75-125	2.71	20	L585652-08	WG605113	

Batch number /Run number / Sample number cross reference

WG603399: R2264333: L585652-01 02 03 05 06
WG603385: R2264495: L585652-01 02 03
WG603529: R2264513: L585652-04
WG603522: R2264533: L585652-04
WG603548: R2264674: L585652-04
WG603113: R2264833: L585652-04
WG603530: R2265053: L585652-04
WG603576: R2265315: L585652-04
WG603715: R2265793: L585652-04
WG603840: R2268793: L585652-04
WG604113: R2271914: L585652-05
WG603925: R2273096: L585652-04
WG603508: R2275833: L585652-04
WG604897: R2276794: L585652-07
WG605762: R2286733: L585652-06
WG605113: R2286774: L585652-08 09 10

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

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

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

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

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

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ENCANRCO

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Email to:

blake.ford@encana.com

Analysis/Container/Preservative

Chain of Custody
Page 1 of 1

ESC
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

CoCode ENCANRCO (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant

Sample # (lab only)

Project Description: 3-7 Site Clearance		City/State Collected: Rangely CO	
Phone: (970) 675-4414	Client Project #: 3-7	ESC Key: ENCANRCO	
FAX:	Site/Facility ID#: 3-7	P.O.#:	
Collected by: Brad Ward	Collected by (signature): [Signature]		
Immediately Packed on Ice N (Y)		Rush? (Lab MUST Be Notified) Same Day.....200% Next Day.....100% Two Day.....50% 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	
Sample ID	Comp/Grab	Matrix*	Depth
3-7-SSW-10'-071312	G	SS	10'
3-7-ESW-10'-071312	G	SS	10'
3-7-BBT-20'-071312	G	SS	20'
3-7-ETS-071312	COMP	SS	1-4'
3-7-NSW-18'-071312	G	SS	18'
3-7-WSW-18'-071312	G	SS	18'

BTEXGRO / DRO - 8021/8015

SV8270PAHSIM - 8270SIM

SPCON - 9050AMod

SAR - Calc.

RCRA8 Metals + Cu, Ni, and Zn - 6010/7470

CR6SS - 3060A/7196 ,CR3 - Calc.

As

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

pH _____ Temp _____

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

5086 58264386

Other _____

Relinquished by: (Signature) [Signature]	Date: 7/17/12	Time: 0700	Received by: (Signature) [Signature]	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Condition: (06) (lab use only)
Relinquished by: (Signature) [Signature]	Date: 7/17/12	Time: 1300	Received by: (Signature) [Signature]	Temp: 3.6°	Bottles Received: 13-402
Relinquished by: (Signature) [Signature]	Date:	Time:	Received for lab by: (Signature) [Signature]	Date: 7/18/12	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*

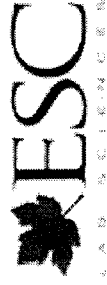
Please scan with coc. Thanks

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
Phone: 800-767-5859 Ext. 9678
Direct: (615) 773-9678
www.esclabsciences.com



07-0029

Chain of Custody
Page 1 of 112065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859

Phone: (615) 758-5858

Fax: (615) 758-5859

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

Project
Description:

16-13 Culvert Removal

City/State
Collected

Rangely CO

Phone: (970) 675-4414
FAX:

Client Project #:

16-13

ESC Key:

ENCANRCO

Collected by: Brad Ward

Site/Facility ID#:

16-13

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 ☐ Yes

No.

of

Cntrs

Immediately Packed on Ice N

Sample ID

Comp/Grab

Matrix*

Depth

Date

Time

16-13-NSW-4'-071112

G

SS

4'

7/11/12

1200

2

X

16-13-WSW-4'-071112

G

SS

4'

7/11/12

1105

2

X

16-13-SSW-2'-071112

G

SS

2'

7/11/12

1130

2

X

16-13-ESW-4'-071112

G

SS

4'

7/11/12

1145

2

X

3-7-BG1N-6"-071212

G

SS

6"

7/12/12

840

1

3-7-BG2W-6"-071212

G

SS

6"

7/12/12

850

1

3-7-BG3S-6"-071212

G

SS

6"

7/12/12

0900

1

3-7-BG4E-6"-071212

G

SS

6"

7/12/12

0910

1

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

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

pH Temp

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

5040 06334419

Other

Relinquished by: (Signature)	Date: 7/13/12	Time: 7:00	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: 4.1°C	Bottles Received: 12-5/12
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/14/12	Time: 0900
				CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked: NCF:



12065 Lebanon Rd.
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(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

Wednesday October 03, 2012

Report Number: L598095


Samples Received: 09/28/12

Client Project: 3-7

Description: 3-7 Remediation

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.

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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

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

October 03, 2012

Date Received : September 28, 2012
Description : 3-7 Remediation
Sample ID : 3-7-ETS-092612
Collected By : SRM
Collection Date : 09/26/12 12:15

ESC Sample # : L598095-01

Site ID : 3-7

Project # : 3-7

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/30/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/30/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/30/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/30/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/30/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.6		% Rec.	8021/8015	09/30/12	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	09/30/12	5
TPH (GC/FID) High Fraction	26.	4.0	mg/kg	3546/DRO	10/03/12	1
Surrogate recovery(%)						
o-Terphenyl	76.7		% Rec.	3546/DRO	10/03/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 10/03/12 16:56 Printed: 10/03/12 17:14

