

Page 1

FORM
4
Rev 12/05State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 601, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109



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)

RECEIVED
10/16/2012

1. OGCC Operator Number: 10341	4. Contact Name: Karen LeBaron	Complete the Attachment Checklist OP OGCC
2. Name of Operator: Puckett Land Company	Phone: (303) 763 - 1000	
3. Address: 5460 South Quebec Street, Suite 250 City: Greenwood Village State: CO Zip: 80111	Fax: (303) 763 - 1040	
5. API Number: 05-316684 [Location ID]	OGCC Facility ID Number: 428040 & 428041	Survey Plat
6. Well/Facility Name: N. & S. RESERVE PITS	7. Well/Facility Number: 499-14-22	Directional Survey
8. Location (Qtr/Sec, Twp, Rng, Meridian): NWNW, Sec 14, T4S-R99W, 6th PM		Surface Eqmt Diagram
9. County: Rio Blanco	10. Field Name: Wildcat	Technical Info Page
11. Federal, Indian or State Lease Number: NA		Other

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:		

Bottomhole location 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 NUMBER
From: _____
To: _____
Effective Date: _____

☐ 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: _____

☐ 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: August, 2012

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 checked="" type="checkbox"/> Other: Pit Closure	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: Karen LeBaron Date: 10-15-12 Email: klebaron@puckettland.com
Print Name: Karen LeBaron Title: Petroleum Landman

COGCC Approved: Chris Canfield Title: FOR Date: 11/06/2012
CONDITIONS OF APPROVAL, IF ANY:

CONDITIONS:

- Operator must submit a one page material management plan for impacted material moved to pad 4 99-12-67 (Location ID # 316610)
- Notify COGCC when treatment and final disposal of material has been completed.

Chris Canfield
EPS NW Region

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____ API Number: _____

2. Name of Operator: _____ OGCC Facility ID # _____

3. Well/Facility Name: _____ Well/Facility Number: _____

4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____

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

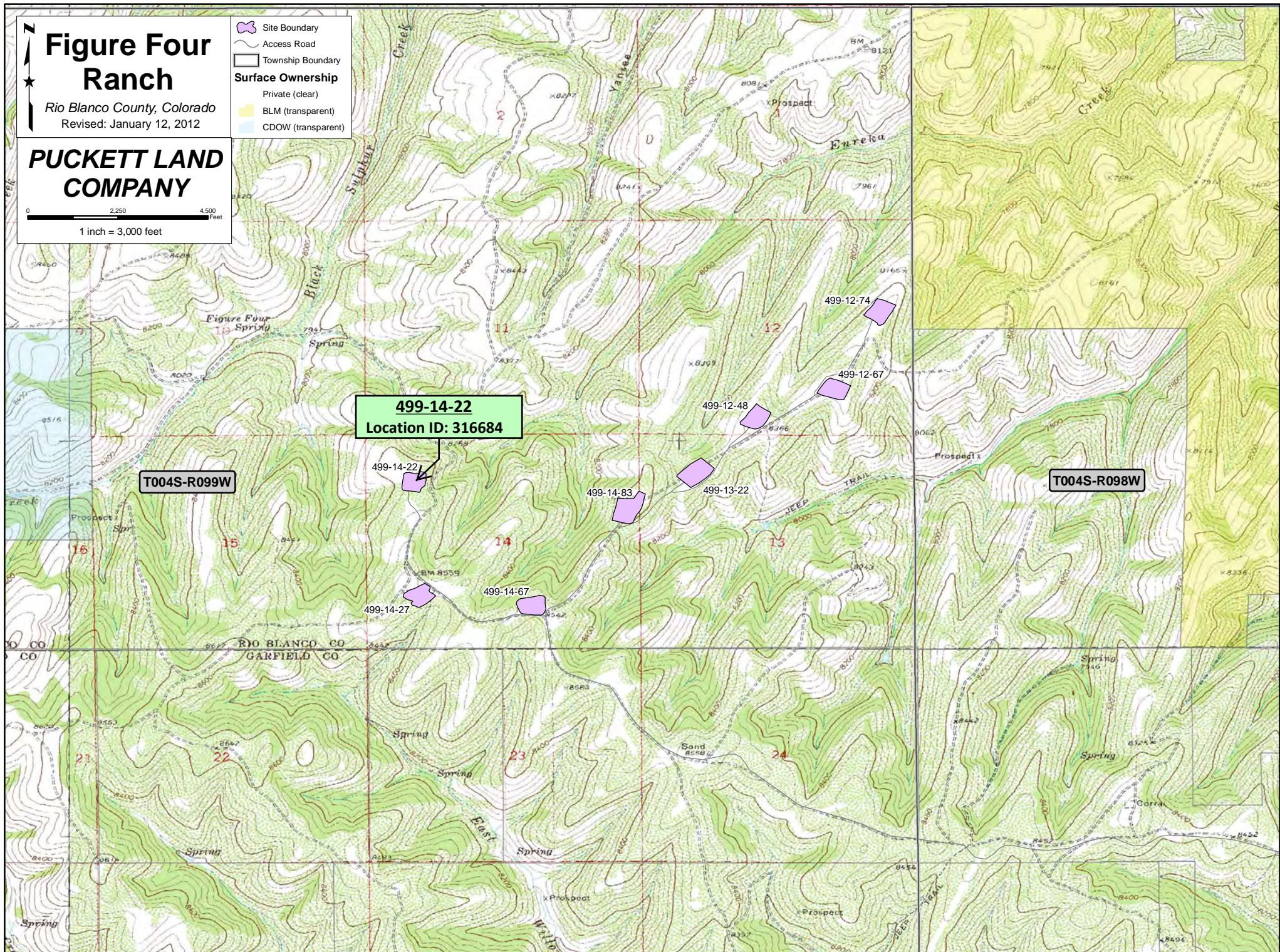
Figure Four Ranch

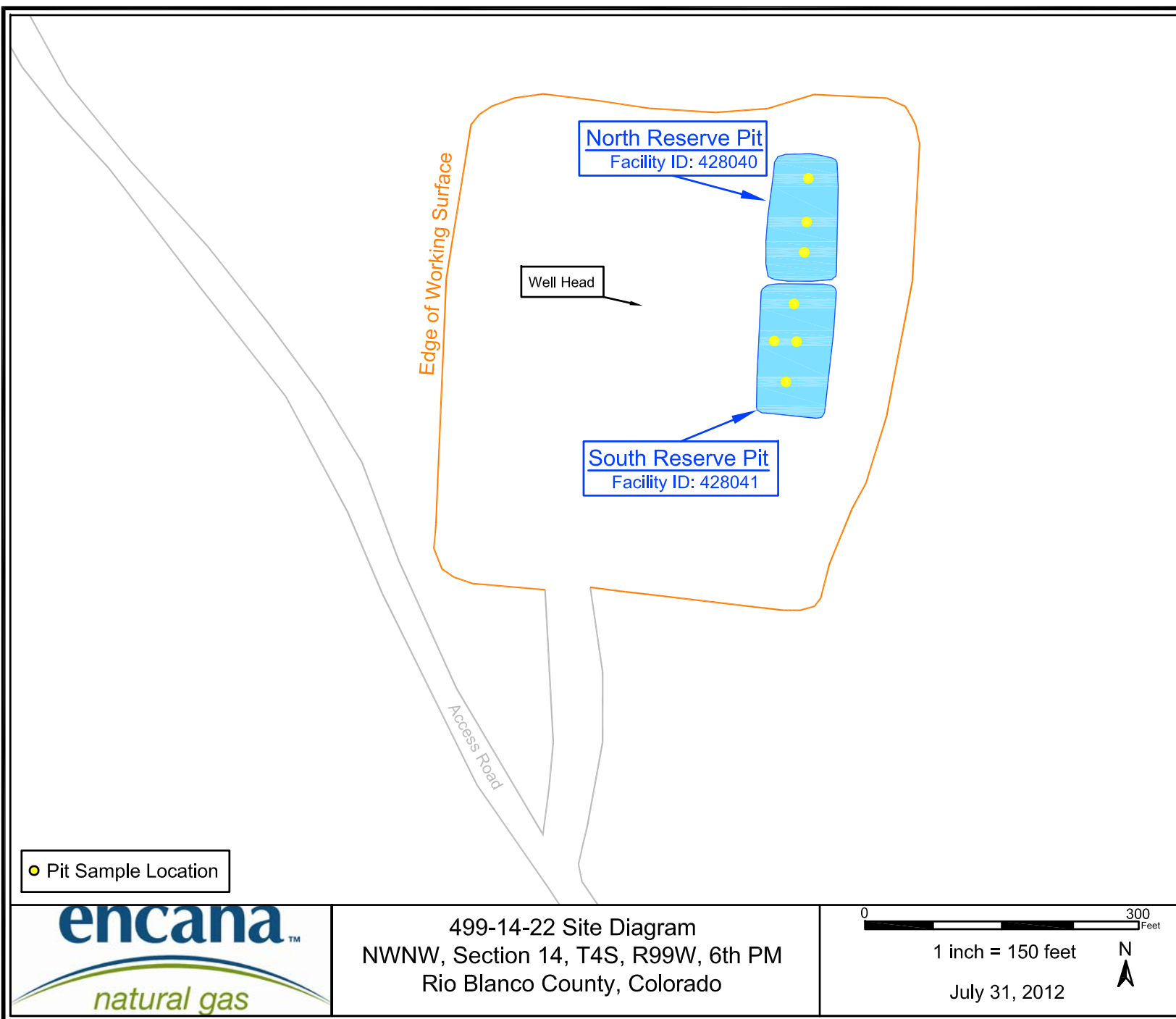
Rio Blanco County, Colorado
Revised: January 12, 2012

**PUCKETT LAND
COMPANY**

0 2,250 4,500 Feet
1 inch = 3,000 feet

- Site Boundary
- Access Road
- Township Boundary
- Surface Ownership
 - Private (clear)
 - BLM (transparent)
 - CDOW (transparent)







Laboratory Results Summary Table

10/11/2012

Analytes (BDL = Below Detection Limit; ND = Non Detect)

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])														
Location	Sample Date:	Sample Matrix	Matrix Notes	500	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
				TPH (total volatile and extractable petroleum hydrocarbons)																				EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
499-14-22	10/18/11	Pit	S mid	BDL	BDL	BDL	BDL	BDL	BDL	BDL																												
499-14-22	10/18/11	Pit	N SW bottom	BDL	BDL	BDL	BDL	BDL	BDL	BDL																												
499-14-22	10/18/11	Pit	N mid	BDL	BDL	BDL	BDL	BDL	BDL	BDL																												
499-14-22	10/18/11	Pit	N NE bottom	BDL	BDL	BDL	BDL	BDL	BDL	BDL																												
499-14-22	10/18/11	Pit	Spoils	612.3	2.3	610	0.0042	BDL	0.0097	0.11																												
499-14-22	10/18/11	Pit	S W wall	17	BDL	17	BDL	BDL	BDL	BDL																												
499-14-22	10/18/11	Pit	S NW bottom	7.4	BDL	7.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	15	5.5	9	10	180	1.1	50	BDL	16	29	BDL	20	BDL	0.81	50
499-14-22	06/05/12	Pit	Spoils	1002.4	2.4	1000	BDL	BDL	0.09	BDL																												
499-14-22	09/05/12	Pit	clearance sample/pit spoil	58	BDL	58	BDL	BDL	BDL	BDL																												

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					0.39
					Arsenic
499-12-67	07/10/12	Background	NE		3.1
499-12-67	07/10/12	Background	Nmid		3.1
499-12-67	07/10/12	Background	NE		3
499-12-67	07/10/12	Background	NE		2.7
499-12-67	07/10/12	Background	Nmid		2.7
499-12-67	07/10/12	Background	NW		2.6
499-12-67	07/10/12	Background	NW		2.5
499-12-67	07/10/12	Background	NE		2.4
499-12-67	07/10/12	Background	E		2.3
499-12-67	07/10/12	Background	Nmid		2.3
499-12-67	07/10/12	Background	NW		2.3
499-12-67	07/10/12	Background	E		2.2
499-12-67	07/10/12	Background	NE		2.2
499-12-67	07/10/12	Background	Nmid		2.2
499-12-67	07/10/12	Background	Nmid		2.2
499-12-67	07/10/12	Background	E		2.1
499-12-67	07/10/12	Background	NW		2.1
499-12-67	07/10/12	Background	W		2.1
499-12-67	07/10/12	Background	W		2.1
499-12-67	07/10/12	Background	E		2
499-12-67	07/10/12	Background	E		2
499-12-67	07/10/12	Background	NW		2
499-12-67	07/10/12	Background	W		2
499-12-67	07/10/12	Background	W		1.9
499-12-67	07/10/12	Background	W		1.7
499-12-74	07/10/12	Background	N		BDL
499-12-74	07/10/12	Background	N		BDL
499-12-74	07/10/12	Background	N		BDL
499-12-74	07/10/12	Background	N		BDL
499-12-74	07/10/12	Background	N		BDL
499-12-74	07/10/12	Background	E		BDL
499-12-74	07/10/12	Background	E		BDL
499-12-74	07/10/12	Background	E		BDL
499-12-74	07/10/12	Background	E		BDL
499-12-74	07/10/12	Background	E		BDL
499-12-74	07/10/12	Background	SE		BDL
499-12-74	07/10/12	Background	SE		BDL
499-12-74	07/10/12	Background	SE		BDL
499-12-74	07/10/12	Background	SE		BDL
499-12-74	07/10/12	Background	SE		BDL

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					0.39
					Arsenic
499-12-74	07/10/12	Background	SW		BDL
499-12-74	07/10/12	Background	SW		BDL
499-12-74	07/10/12	Background	SW		BDL
499-12-74	07/10/12	Background	SW		BDL
499-12-74	07/10/12	Background	SW		BDL
499-12-74	07/10/12	Background	W		BDL
499-12-74	07/10/12	Background	W		BDL
499-12-74	07/10/12	Background	W		BDL
499-12-74	07/10/12	Background	W		BDL
499-12-74	07/10/12	Background	W		BDL
499-14-22	07/10/12	Background	W		BDL
499-14-22	07/10/12	Background	W		BDL
499-14-22	07/10/12	Background	W		BDL
499-14-22	07/10/12	Background	W		BDL
499-14-22	07/10/12	Background	SW		BDL
499-14-22	07/10/12	Background	SW		BDL
499-14-22	07/10/12	Background	S		9.1
499-14-22	07/10/12	Background	S		9.1
499-14-22	07/10/12	Background	SW		8
499-14-22	07/10/12	Background	S		8
499-14-22	07/10/12	Background	SW		7.9
499-14-22	07/10/12	Background	SW		7.1
499-14-22	07/10/12	Background	W		7
499-14-22	07/10/12	Background	NE		6.8
499-14-22	07/10/12	Background	W		6.4
499-14-22	07/10/12	Background	NE		6.2
499-14-22	07/10/12	Background	NE		6.1
499-14-22	07/10/12	Background	W		5.7
499-14-22	07/10/12	Background	W		5.7
499-14-22	07/10/12	Background	NE		5.6
499-14-22	07/10/12	Background	S		5.5
499-14-22	07/10/12	Background	NE		5.4
499-14-22	07/10/12	Background	S		5.1
499-14-22	07/10/12	Background	W		5.1
499-14-27	07/10/12	Background	SW		BDL
499-14-27	07/10/12	Background	SW		BDL
499-14-27	07/10/12	Background	SW		BDL
499-14-27	07/10/12	Background	SW		BDL
499-14-27	07/10/12	Background	SW		BDL

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	Metals i
					0.39
					Arsenic
499-14-27	07/10/12	Background	W		BDL
499-14-27	07/10/12	Background	W		BDL
499-14-27	07/10/12	Background	W		BDL
499-14-27	07/10/12	Background	W		BDL
499-14-27	07/10/12	Background	W		BDL
499-14-27	07/10/12	Background	N		BDL
499-14-27	07/10/12	Background	N		BDL
499-14-27	07/10/12	Background	SE		12
499-14-27	07/10/12	Background	SE		11
499-14-27	07/10/12	Background	SE		10
499-14-27	07/10/12	Background	SE		10
499-14-27	07/10/12	Background	SE		9.8
499-14-27	07/10/12	Background	S		9.4
499-14-27	07/10/12	Background	S		8.7
499-14-27	07/10/12	Background	S		8.5
499-14-27	07/10/12	Background	S		8.2
499-14-27	07/10/12	Background	S		6.9
499-14-27	07/10/12	Background	N		3
499-14-27	07/10/12	Background	N		1.8
499-14-27	07/10/12	Background	N		1.3
499-14-67	07/10/12	Background	NE		BDL
499-14-67	07/10/12	Background	NE		BDL
499-14-67	07/10/12	Background	NE		BDL
499-14-67	07/10/12	Background	NE		BDL
499-14-67	07/10/12	Background	NE		BDL
499-14-67	07/10/12	Background	N		BDL
499-14-67	07/10/12	Background	N		BDL
499-14-67	07/10/12	Background	N		BDL
499-14-67	07/10/12	Background	N		BDL
499-14-67	07/10/12	Background	N		BDL
499-14-67	07/10/12	Background	NW		BDL
499-14-67	07/10/12	Background	NW		BDL
499-14-67	07/10/12	Background	NW		BDL
499-14-67	07/10/12	Background	NW		BDL
499-14-67	07/10/12	Background	NW		BDL
499-14-67	07/10/12	Background	W		BDL
499-14-67	07/10/12	Background	W		BDL
499-14-67	07/10/12	Background	W		BDL
499-14-67	07/10/12	Background	SW		BDL
499-14-67	07/10/12	Background	SW		BDL

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->	
				Metals i	0.39
				Arsenic	
499-14-67	07/10/12	Background	SW	BDL	
499-14-67	07/10/12	Background	SW	BDL	
499-14-67	07/10/12	Background	SW	BDL	
499-14-67	07/10/12	Background	W	1.4	
499-14-67	07/10/12	Background	W	1.3	



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

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Friday October 28, 2011

Report Number: L542666

Samples Received: 10/20/11

Client Project:

Description: West Hawk

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, 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.

REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-STOC-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:21

ESC Sample # : L542666-01

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	10/22/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	10/22/11	5
TPH (GC/FID) High Fraction	20.	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	67.9		% Rec.	3546/DRO	10/25/11	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: 10/28/11 16:31 Printed: 10/28/11 16:32



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Fax (615) 758-5859

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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-SW WALL-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:34

ESC Sample # : L542666-02

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.8		% Rec.	8021/8015	10/22/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	10/22/11	5
TPH (GC/FID) High Fraction	17.	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	58.6		% Rec.	3546/DRO	10/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 10/28/11 16:31 Printed: 10/28/11 16:32

REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-S MID-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:41

ESC Sample # : L542666-03

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	10/22/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	10/22/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	65.6		% Rec.	3546/DRO	10/25/11	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: 10/28/11 16:31 Printed: 10/28/11 16:32



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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-S NW BOT-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:47

ESC Sample # : L542666-04

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/26/11	1
Chromium, Trivalent	50.	2.0	mg/kg	Calc.	10/24/11	1
ORP	81.		mV	2580	10/27/11	1
pH	9.0		su	9045D	10/25/11	1
Sodium Adsorption Ratio	5.5			Calc.	10/23/11	1
Specific Conductance	15000		umhos/cm	9050AMod	10/25/11	1
Mercury	BDL	0.020	mg/kg	7471	10/21/11	1
Arsenic	10.	1.0	mg/kg	6010B	10/24/11	1
Barium	180	0.25	mg/kg	6010B	10/24/11	1
Cadmium	1.1	0.25	mg/kg	6010B	10/24/11	1
Chromium	50.	0.50	mg/kg	6010B	10/24/11	1
Copper	16.	1.0	mg/kg	6010B	10/24/11	1
Lead	29.	0.25	mg/kg	6010B	10/24/11	1
Nickel	20.	1.0	mg/kg	6010B	10/24/11	1
Selenium	BDL	1.0	mg/kg	6010B	10/24/11	1
Silver	0.81	0.50	mg/kg	6010B	10/24/11	1
Zinc	50.	1.5	mg/kg	6010B	10/24/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	10/22/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	10/22/11	5
TPH (GC/FID) High Fraction	7.4	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	84.7		% Rec.	3546/DRO	10/25/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L542666-04 (PH) - 8.95@19.8c



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

REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-S NW BOT-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:47

ESC Sample # : L542666-04

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	10/25/11	1
Surrogate Recovery						
Nitrobenzene-d5	79.7		% Rec.	8270C-SIM	10/25/11	1
2-Fluorobiphenyl	77.9		% Rec.	8270C-SIM	10/25/11	1
p-Terphenyl-d14	89.1		% Rec.	8270C-SIM	10/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L542666-04 (PH) - 8.95@19.8c



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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-N SW BOT-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 10:52

ESC Sample # : L542666-05

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/23/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/23/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/23/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/23/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.9		% Rec.	8021/8015	10/23/11	5
a,a,a-Trifluorotoluene(PID)	95.0		% Rec.	8021/8015	10/23/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	97.0		% Rec.	3546/DRO	10/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-N MID-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 11:00

ESC Sample # : L542666-06

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/23/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/23/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/23/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/23/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	8021/8015	10/23/11	5
a,a,a-Trifluorotoluene(PID)	95.8		% Rec.	8021/8015	10/23/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	99.2		% Rec.	3546/DRO	10/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-PB-N NE BOT-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 11:07

ESC Sample # : L542666-07

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.6		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	93.2		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	10/25/11	1
Surrogate recovery(%)						
o-Terphenyl	82.9		% Rec.	3546/DRO	10/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Hines / Matt Kasten
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

October 28, 2011

Date Received : October 20, 2011
Description : West Hawk
Sample ID : WH-14-22-SPOILS-10182011
Collected By : Bob Stockton
Collection Date : 10/18/11 11:22

ESC Sample # : L542666-08

Site ID : 499-14-22

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0042	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	0.0097	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	0.11	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	2.3	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.3		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	99.0		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	610	20.	mg/kg	3546/DRO	10/25/11	5
Surrogate recovery(%)						
o-Terphenyl	84.4		% Rec.	3546/DRO	10/25/11	5

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
L542666-04	WG561937	SAMP	pH	R1908332	T8
	WG562163	SAMP	ORP	R1911592	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
10/28/11 at 16:32:11

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L542666-01 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-02 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-03 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-04 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-05 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-06 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-07 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31
Sample: L542666-08 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/27/11 00:00 RPT Date: 10/28/11 16:31



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EnCana Oil & Gas Inc. - CO
Chris Hines / Matt Kasten
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L542666

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

Tax I.D. 62-0814289

Est. 1970

October 28, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG561636	10/21/11 19:18
Benzene	< .0005	mg/kg			WG561623	10/22/11 01:54
Ethylbenzene	< .0005	mg/kg			WG561623	10/22/11 01:54
Toluene	< .005	mg/kg			WG561623	10/22/11 01:54
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG561623	10/22/11 01:54
Total Xylene	< .0015	mg/kg			WG561623	10/22/11 01:54
a,a,a-Trifluorotoluene(FID)		% Rec.	101.0	59-128	WG561623	10/22/11 01:54
a,a,a-Trifluorotoluene(PID)		% Rec.	107.7	54-144	WG561623	10/22/11 01:54
Benzene	< .0005	mg/kg			WG561949	10/24/11 02:28
Ethylbenzene	< .0005	mg/kg			WG561949	10/24/11 02:28
Toluene	< .005	mg/kg			WG561949	10/24/11 02:28
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG561949	10/24/11 02:28
Total Xylene	< .0015	mg/kg			WG561949	10/24/11 02:28
a,a,a-Trifluorotoluene(FID)		% Rec.	94.55	59-128	WG561949	10/24/11 02:28
a,a,a-Trifluorotoluene(PID)		% Rec.	98.20	54-144	WG561949	10/24/11 02:28
Benzene	< .0005	mg/kg			WG561948	10/22/11 23:44
Ethylbenzene	< .0005	mg/kg			WG561948	10/22/11 23:44
Toluene	< .005	mg/kg			WG561948	10/22/11 23:44
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG561948	10/22/11 23:44
Total Xylene	< .0015	mg/kg			WG561948	10/22/11 23:44
a,a,a-Trifluorotoluene(FID)		% Rec.	96.50	59-128	WG561948	10/22/11 23:44
a,a,a-Trifluorotoluene(PID)		% Rec.	97.64	54-144	WG561948	10/22/11 23:44
Arsenic	< 1	mg/kg			WG561657	10/24/11 16:17
Barium	< .25	mg/kg			WG561657	10/24/11 16:17
Cadmium	< .25	mg/kg			WG561657	10/24/11 16:17
Chromium	< .5	mg/kg			WG561657	10/24/11 16:17
Copper	< 1	mg/kg			WG561657	10/24/11 16:17
Lead	< .25	mg/kg			WG561657	10/24/11 16:17
Nickel	< 1	mg/kg			WG561657	10/24/11 16:17
Selenium	< 1	mg/kg			WG561657	10/24/11 16:17
Silver	< .5	mg/kg			WG561657	10/24/11 16:17
Zinc	< 1.5	mg/kg			WG561657	10/24/11 16:17
TPH (GC/FID) High Fraction	< 4	ppm			WG561883	10/25/11 04:14
o-Terphenyl		% Rec.	63.98	50-150	WG561883	10/25/11 04:14
1-Methylnaphthalene	< .006	mg/kg			WG562003	10/24/11 22:51
2-Chloronaphthalene	< .006	mg/kg			WG562003	10/24/11 22:51
2-Methylnaphthalene	< .006	mg/kg			WG562003	10/24/11 22:51
Acenaphthene	< .006	mg/kg			WG562003	10/24/11 22:51
Acenaphthylene	< .006	mg/kg			WG562003	10/24/11 22:51
Anthracene	< .006	mg/kg			WG562003	10/24/11 22:51
Benzo(a)anthracene	< .006	mg/kg			WG562003	10/24/11 22:51
Benzo(a)pyrene	< .006	mg/kg			WG562003	10/24/11 22:51
Benzo(b)fluoranthene	< .006	mg/kg			WG562003	10/24/11 22:51
Benzo(g,h,i)perylene	< .006	mg/kg			WG562003	10/24/11 22:51
Benzo(k)fluoranthene	< .006	mg/kg			WG562003	10/24/11 22:51
Chrysene	< .006	mg/kg			WG562003	10/24/11 22:51
Dibenz(a,h)anthracene	< .006	mg/kg			WG562003	10/24/11 22:51

* 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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October 28, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Fluoranthene	< .006	mg/kg			WG562003	10/24/11 22:51
Fluorene	< .006	mg/kg			WG562003	10/24/11 22:51
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG562003	10/24/11 22:51
Naphthalene	< .006	mg/kg			WG562003	10/24/11 22:51
Phenanthrene	< .006	mg/kg			WG562003	10/24/11 22:51
Pyrene	< .006	mg/kg			WG562003	10/24/11 22:51
2-Fluorobiphenyl		% Rec.	88.30	34-129	WG562003	10/24/11 22:51
Nitrobenzene-d5		% Rec.	82.67	14-141	WG562003	10/24/11 22:51
p-Terphenyl-d14		% Rec.	87.76	25-139	WG562003	10/24/11 22:51
pH	4.40	su			WG561937	10/25/11 14:47
Specific Conductance	1.60	umhos/cm			WG562171	10/25/11 16:17
Chromium,Hexavalent	< 2	mg/kg			WG561940	10/26/11 15:13

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0	0	20	L542706-03	WG561636
Arsenic	mg/kg	9.00	8.30	7.65	20	L542718-02	WG561657
Barium	mg/kg	150.	140.	4.20	20	L542718-02	WG561657
Cadmium	mg/kg	1.10	1.00	5.83	20	L542718-02	WG561657
Chromium	mg/kg	43.0	42.0	1.89	20	L542718-02	WG561657
Copper	mg/kg	5.00	5.00	0.200	20	L542718-02	WG561657
Lead	mg/kg	27.0	26.0	3.40	20	L542718-02	WG561657
Nickel	mg/kg	16.0	16.0	0	20	L542718-02	WG561657
Selenium	mg/kg	0	0	0	20	L542718-02	WG561657
Silver	mg/kg	0.690	0.700	2.02	20	L542718-02	WG561657
Zinc	mg/kg	43.0	43.0	0.232	20	L542718-02	WG561657
pH	su	0	0	0	1	L542677-01	WG561937
pH	su	8.10	8.20	0.857	1	L543095-02	WG561937
Specific Conductance	umhos/cm	1200	1200	3.84	20	L542660-08	WG562171
Specific Conductance	umhos/cm	93.0	94.0	0.640	20	L543102-01	WG562171
Chromium,Hexavalent	mg/kg	0	0	0	20	L542718-02	WG561940
Chromium,Hexavalent	mg/kg	0	0	0	20	L542787-03	WG561940
ORP	mV	180.	180.	0.554	20	L541924-03	WG562163
ORP	mV	190.	190.	1.57	20	L543323-02	WG562163

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	3.77	4.47	119.	71.6-128	WG561636
Benzene	mg/kg	.05	0.0463	92.7	76-113	WG561623

* Performance of this Analyte is outside of established criteria.

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2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L542666

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

October 28, 2011

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Ethylbenzene	mg/kg	.05	0.0539	108.	78-115	WG561623
Toluene	mg/kg	.05	0.0505	101.	76-114	WG561623
Total Xylene	mg/kg	.15	0.163	109.	81-118	WG561623
a,a,a-Trifluorotoluene(FID)				101.6	59-128	WG561623
a,a,a-Trifluorotoluene(PID)				104.6	54-144	WG561623
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.92	108.	67-135	WG561623
a,a,a-Trifluorotoluene(FID)				101.8	59-128	WG561623
a,a,a-Trifluorotoluene(PID)				109.1	54-144	WG561623
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.34	133.	67-135	WG561949
a,a,a-Trifluorotoluene(FID)				97.75	59-128	WG561949
Benzene	mg/kg	.05	0.0433	86.7	76-113	WG561949
Ethylbenzene	mg/kg	.05	0.0552	110.	78-115	WG561949
Toluene	mg/kg	.05	0.0517	103.	76-114	WG561949
Total Xylene	mg/kg	.15	0.164	109.	81-118	WG561949
a,a,a-Trifluorotoluene(PID)				89.07	54-144	WG561949
Benzene	mg/kg	.05	0.0447	89.4	76-113	WG561948
Ethylbenzene	mg/kg	.05	0.0501	100.	78-115	WG561948
Toluene	mg/kg	.05	0.0513	103.	76-114	WG561948
Total Xylene	mg/kg	.15	0.144	95.7	81-118	WG561948
a,a,a-Trifluorotoluene(PID)				95.24	54-144	WG561948
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.39	116.	67-135	WG561948
a,a,a-Trifluorotoluene(FID)				102.4	59-128	WG561948
Arsenic	mg/kg	92.6	94.3	102.	82.9-117	WG561657
Barium	mg/kg	169	171.	101.	82.8-117	WG561657
Cadmium	mg/kg	61.8	62.7	101.	83.3-117	WG561657
Chromium	mg/kg	71.3	73.0	102.	81.8-118	WG561657
Copper	mg/kg	81.2	87.6	108.	83.9-116	WG561657
Lead	mg/kg	92.4	102.	110.	83.3-117	WG561657
Nickel	mg/kg	59.1	60.4	102.	83.8-116	WG561657
Selenium	mg/kg	89.5	89.1	99.6	79-121	WG561657
Silver	mg/kg	34.4	34.7	101.	66.3-134	WG561657
Zinc	mg/kg	141	138.	97.9	80.9-119	WG561657
TPH (GC/FID) High Fraction	ppm	60	48.4	80.6	50-150	WG561883
o-Terphenyl				68.21	50-150	WG561883
1-Methylnaphthalene	mg/kg	.033	0.0274	82.9	48-113	WG562003
2-Chloronaphthalene	mg/kg	.033	0.0271	82.2	51-114	WG562003
2-Methylnaphthalene	mg/kg	.033	0.0259	78.5	44-109	WG562003
Acenaphthene	mg/kg	.033	0.0277	84.0	52-108	WG562003
Acenaphthylene	mg/kg	.033	0.0270	81.9	51-110	WG562003
Anthracene	mg/kg	.033	0.0259	78.5	58-120	WG562003
Benzo(a)anthracene	mg/kg	.033	0.0261	79.0	54-110	WG562003
Benzo(a)pyrene	mg/kg	.033	0.0267	80.9	56-118	WG562003
Benzo(b)fluoranthene	mg/kg	.033	0.0300	90.8	55-114	WG562003
Benzo(g,h,i)perylene	mg/kg	.033	0.0282	85.5	48-130	WG562003
Benzo(k)fluoranthene	mg/kg	.033	0.0276	83.6	55-122	WG562003
Chrysene	mg/kg	.033	0.0278	84.1	57-118	WG562003
Dibenz(a,h)anthracene	mg/kg	.033	0.0284	86.2	53-122	WG562003
Fluoranthene	mg/kg	.033	0.0293	88.9	58-118	WG562003
Fluorene	mg/kg	.033	0.0267	80.9	54-109	WG562003

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Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0284	86.1	51-125	WG562003
Naphthalene	mg/kg	.033		0.0254	77.1	45-105	WG562003
Phenanthrene	mg/kg	.033		0.0267	80.8	53-114	WG562003
Pyrene	mg/kg	.033		0.0269	81.6	53-121	WG562003
2-Fluorobiphenyl					82.41	34-129	WG562003
Nitrobenzene-d5					80.10	14-141	WG562003
p-Terphenyl-d14					81.90	25-139	WG562003
pH	su	7.98		8.00	100.	98-101	WG561937
Specific Conductance	umhos/cm	427		420.	98.4	85-115	WG562171
Chromium, Hexavalent	mg/kg	132		103.	78.0	50-150	WG561940
ORP	mV	229		220.	96.1	95.6-104.37	WG562163

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0500	0.0463	100.	76-113	7.60	20	WG561623
Ethylbenzene	mg/kg	0.0564	0.0539	113.	78-115	4.51	20	WG561623
Toluene	mg/kg	0.0525	0.0505	105.	76-114	3.88	20	WG561623
Total Xylene	mg/kg	0.169	0.163	112.	81-118	3.27	20	WG561623
a,a,a-Trifluorotoluene(FID)				101.7	59-128			WG561623
a,a,a-Trifluorotoluene(PID)				104.2	54-144			WG561623
TPH (GC/FID) Low Fraction	mg/kg	5.63	5.92	102.	67-135	5.06	20	WG561623
a,a,a-Trifluorotoluene(FID)				101.4	59-128			WG561623
a,a,a-Trifluorotoluene(PID)				109.2	54-144			WG561623
TPH (GC/FID) Low Fraction	mg/kg	6.70	7.34	122.	67-135	9.14	20	WG561949
a,a,a-Trifluorotoluene(FID)				102.2	59-128			WG561949
Benzene	mg/kg	0.0415	0.0433	83.0	76-113	4.25	20	WG561949
Ethylbenzene	mg/kg	0.0529	0.0552	106.	78-115	4.33	20	WG561949
Toluene	mg/kg	0.0492	0.0517	98.0	76-114	5.02	20	WG561949
Total Xylene	mg/kg	0.157	0.164	105.	81-118	4.43	20	WG561949
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG561949
Benzene	mg/kg	0.0449	0.0447	90.0	76-113	0.470	20	WG561948
Ethylbenzene	mg/kg	0.0501	0.0501	100.	78-115	0.0500	20	WG561948
Toluene	mg/kg	0.0522	0.0513	104.	76-114	1.72	20	WG561948
Total Xylene	mg/kg	0.144	0.144	96.0	81-118	0.430	20	WG561948
a,a,a-Trifluorotoluene(PID)				96.46	54-144			WG561948
TPH (GC/FID) Low Fraction	mg/kg	6.46	6.39	117.	67-135	1.05	20	WG561948
a,a,a-Trifluorotoluene(FID)				102.5	59-128			WG561948
TPH (GC/FID) High Fraction	ppm	55.2	48.4	92.0	50-150	13.2	25	WG561883
o-Terphenyl				77.31	50-150			WG561883
1-Methylnaphthalene	mg/kg	0.0270	0.0274	82.0	48-113	1.47	24	WG562003
2-Chloronaphthalene	mg/kg	0.0270	0.0271	82.0	51-114	0.636	24	WG562003
2-Methylnaphthalene	mg/kg	0.0255	0.0259	77.0	44-109	1.53	24	WG562003

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Acenaphthene	mg/kg	0.0271	0.0277	82.0	52-108	2.16	22	WG562003
Acenaphthylene	mg/kg	0.0267	0.0270	81.0	51-110	1.33	21	WG562003
Anthracene	mg/kg	0.0270	0.0259	82.0	58-120	4.25	20	WG562003
Benzo(a)anthracene	mg/kg	0.0252	0.0261	76.0	54-110	3.62	22	WG562003
Benzo(a)pyrene	mg/kg	0.0262	0.0267	79.0	56-118	1.86	21	WG562003
Benzo(b)fluoranthene	mg/kg	0.0268	0.0300	81.0	55-114	11.2	20	WG562003
Benzo(g,h,i)perylene	mg/kg	0.0279	0.0282	84.0	48-130	1.12	20	WG562003
Benzo(k)fluoranthene	mg/kg	0.0290	0.0276	88.0	55-122	5.11	25	WG562003
Chrysene	mg/kg	0.0272	0.0278	82.0	57-118	2.12	20	WG562003
Dibenz(a,h)anthracene	mg/kg	0.0277	0.0284	84.0	53-122	2.63	20	WG562003
Fluoranthene	mg/kg	0.0294	0.0293	89.0	58-118	0.107	20	WG562003
Fluorene	mg/kg	0.0247	0.0267	75.0	54-109	7.86	20	WG562003
Indeno(1,2,3-cd)pyrene	mg/kg	0.0277	0.0284	84.0	51-125	2.67	21	WG562003
Naphthalene	mg/kg	0.0258	0.0254	78.0	45-105	1.47	24	WG562003
Phenanthrene	mg/kg	0.0256	0.0267	78.0	53-114	3.96	20	WG562003
Pyrene	mg/kg	0.0262	0.0269	79.0	53-121	2.91	20	WG562003
2-Fluorobiphenyl				79.19	34-129			WG562003
Nitrobenzene-d5				79.62	14-141			WG562003
p-Terphenyl-d14				79.95	25-139			WG562003
pH	su	8.00	8.00	100.	98-101	0	20	WG561937
Specific Conductance	umhos/	420.	420.	98.0	85-115	0	20	WG562171
Chromium,Hexavalent	mg/kg	101.	103.	76.0	50-150	1.96	20	WG561940
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG562163

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.240	0	.25	96.0	70-130	L542706-03	WG561636
Benzene	mg/kg	0.235	0.00340	.05	92.5	32-137	L542674-01	WG561623
Ethylbenzene	mg/kg	0.259	0	.05	104.	10-150	L542674-01	WG561623
Toluene	mg/kg	0.256	0	.05	102.	20-142	L542674-01	WG561623
Total Xylene	mg/kg	0.794	0.0110	.15	104.	16-141	L542674-01	WG561623
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG561623
a,a,a-Trifluorotoluene(PID)					104.4	54-144		WG561623
TPH (GC/FID) Low Fraction	mg/kg	22.4	0.620	5.5	79.0	55-109	L542674-01	WG561623
a,a,a-Trifluorotoluene(FID)					107.1	59-128		WG561623
a,a,a-Trifluorotoluene(PID)					108.0	54-144		WG561623
Benzene	mg/kg	0.168	0	.05	67.3	32-137	L542666-07	WG561949
Ethylbenzene	mg/kg	0.208	0	.05	83.3	10-150	L542666-07	WG561949
Toluene	mg/kg	0.197	0	.05	78.9	20-142	L542666-07	WG561949
Total Xylene	mg/kg	0.614	0	.15	81.9	16-141	L542666-07	WG561949
a,a,a-Trifluorotoluene(PID)					100.3	54-144		WG561949
TPH (GC/FID) Low Fraction	mg/kg	21.9	0	5.5	79.7	55-109	L542666-07	WG561949
a,a,a-Trifluorotoluene(FID)					98.78	59-128		WG561949

Benzene	mg/kg	0.178	0	.05	71.1	32-137	L542518-01	WG561948
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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Ethylbenzene	mg/kg	0.238	0	.05	95.1	10-150	L542518-01	WG561948
Toluene	mg/kg	0.276	0	.05	110.	20-142	L542518-01	WG561948
Total Xylene	mg/kg	0.698	0	.15	93.0	16-141	L542518-01	WG561948
a,a,a-Trifluorotoluene(PID)					95.92	54-144		WG561948
TPH (GC/FID) Low Fraction	mg/kg	28.4	0	5.5	103.	55-109	L542518-01	WG561948
a,a,a-Trifluorotoluene(FID)					102.1	59-128		WG561948
Arsenic	mg/kg	60.4	8.30	50	104.	75-125	L542718-02	WG561657
Barium	mg/kg	200.	140.	50	120.	75-125	L542718-02	WG561657
Cadmium	mg/kg	50.3	1.00	50	98.6	75-125	L542718-02	WG561657
Chromium	mg/kg	99.7	42.0	50	115.	75-125	L542718-02	WG561657
Copper	mg/kg	60.4	5.00	50	111.	75-125	L542718-02	WG561657
Lead	mg/kg	81.6	26.0	50	111.	75-125	L542718-02	WG561657
Nickel	mg/kg	66.2	16.0	50	100.	75-125	L542718-02	WG561657
Selenium	mg/kg	50.7	0	50	101.	75-125	L542718-02	WG561657
Silver	mg/kg	51.1	0.700	50	101.	75-125	L542718-02	WG561657
Zinc	mg/kg	95.9	43.0	50	106.	75-125	L542718-02	WG561657
TPH (GC/FID) High Fraction	ppm	51.7	0	60	86.1	50-150	L542640-24	WG561883
o-Terphenyl					69.44	50-150		WG561883
1-Methylnaphthalene	mg/kg	0.0267	0	.033	81.0	25-155	L543086-03	WG562003
2-Chloronaphthalene	mg/kg	0.0277	0	.033	83.8	31-153	L543086-03	WG562003
2-Methylnaphthalene	mg/kg	0.0277	0	.033	83.9	22-172	L543086-03	WG562003
Acenaphthene	mg/kg	0.0259	0	.033	78.4	43-133	L543086-03	WG562003
Acenaphthylene	mg/kg	0.0279	0	.033	84.6	42-146	L543086-03	WG562003
Anthracene	mg/kg	0.0288	0	.033	87.3	38-153	L543086-03	WG562003
Benzo(a)anthracene	mg/kg	0.0258	0	.033	78.3	31-142	L543086-03	WG562003
Benzo(a)pyrene	mg/kg	0.0283	0	.033	85.8	26-152	L543086-03	WG562003
Benzo(b)fluoranthene	mg/kg	0.0268	0	.033	81.2	10-188	L543086-03	WG562003
Benzo(g,h,i)perylene	mg/kg	0.0210	0	.033	63.6	10-176	L543086-03	WG562003
Benzo(k)fluoranthene	mg/kg	0.0268	0	.033	81.2	22-163	L543086-03	WG562003
Chrysene	mg/kg	0.0245	0	.033	74.4	26-146	L543086-03	WG562003
Dibenz(a,h)anthracene	mg/kg	0.0224	0	.033	67.9	10-160	L543086-03	WG562003
Fluoranthene	mg/kg	0.0278	0	.033	84.2	23-160	L543086-03	WG562003
Fluorene	mg/kg	0.0274	0	.033	83.0	44-143	L543086-03	WG562003
Indeno(1,2,3-cd)pyrene	mg/kg	0.0228	0	.033	69.0	10-157	L543086-03	WG562003
Naphthalene	mg/kg	0.0249	0	.033	75.6	22-156	L543086-03	WG562003
Phenanthrene	mg/kg	0.0257	0	.033	77.9	23-164	L543086-03	WG562003
Pyrene	mg/kg	0.0263	0	.033	79.6	12-170	L543086-03	WG562003
2-Fluorobiphenyl					78.65	34-129		WG562003
Nitrobenzene-d5					76.45	14-141		WG562003
p-Terphenyl-d14					82.02	25-139		WG562003
Chromium,Hexavalent	mg/kg	13.8	0	20	69.0	50-150	L542714-01	WG561940

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.249	0.240	99.6	70-130	3.68	20	L542706-03	WG561636
Benzene	mg/kg	0.192	0.235	75.5	32-137	19.9	39	L542674-01	WG561623
Ethylbenzene	mg/kg	0.181	0.259	72.5	10-150	35.4	44	L542674-01	WG561623
Toluene	mg/kg	0.191	0.256	76.6	20-142	28.7	42	L542674-01	WG561623

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Total Xylene	mg/kg	0.549	0.794	71.8	16-141	36.5	46	L542674-01	WG561623
a,a,a-Trifluorotoluene(FID)				100.4	59-128				WG561623
a,a,a-Trifluorotoluene(PID)				104.7	54-144				WG561623
TPH (GC/FID) Low Fraction	mg/kg	22.1	22.4	78.1	55-109	1.14	20	L542674-01	WG561623
a,a,a-Trifluorotoluene(FID)				106.4	59-128				WG561623
a,a,a-Trifluorotoluene(PID)				107.9	54-144				WG561623
Benzene	mg/kg	0.186	0.168	74.4	32-137	10.1	39	L542666-07	WG561949
Ethylbenzene	mg/kg	0.230	0.208	92.2	10-150	10.2	44	L542666-07	WG561949
Toluene	mg/kg	0.218	0.197	87.1	20-142	9.89	42	L542666-07	WG561949
Total Xylene	mg/kg	0.681	0.614	90.8	16-141	10.3	46	L542666-07	WG561949
a,a,a-Trifluorotoluene(PID)				100.6	54-144				WG561949
TPH (GC/FID) Low Fraction	mg/kg	26.4	21.9	96.0	55-109	18.5	20	L542666-07	WG561949
a,a,a-Trifluorotoluene(FID)				101.7	59-128				WG561949
Benzene	mg/kg	0.211	0.178	84.2	32-137	16.9	39	L542518-01	WG561948
Ethylbenzene	mg/kg	0.235	0.238	94.2	10-150	0.940	44	L542518-01	WG561948
Toluene	mg/kg	0.246	0.276	98.5	20-142	11.3	42	L542518-01	WG561948
Total Xylene	mg/kg	0.683	0.698	91.1	16-141	2.12	46	L542518-01	WG561948
a,a,a-Trifluorotoluene(PID)				94.37	54-144				WG561948
TPH (GC/FID) Low Fraction	mg/kg	29.3	28.4	107.	55-109	3.23	20	L542518-01	WG561948
a,a,a-Trifluorotoluene(FID)				101.2	59-128				WG561948
Arsenic	mg/kg	54.2	60.4	91.8	75-125	10.8	20	L542718-02	WG561657
Barium	mg/kg	198.	200.	116.	75-125	1.01	20	L542718-02	WG561657
Cadmium	mg/kg	46.0	50.3	90.0	75-125	8.93	20	L542718-02	WG561657
Chromium	mg/kg	88.8	99.7	93.6	75-125	11.6	20	L542718-02	WG561657
Copper	mg/kg	56.0	60.4	102.	75-125	7.56	20	L542718-02	WG561657
Lead	mg/kg	73.6	81.6	95.2	75-125	10.3	20	L542718-02	WG561657
Nickel	mg/kg	61.1	66.2	90.2	75-125	8.01	20	L542718-02	WG561657
Selenium	mg/kg	45.4	50.7	90.8	75-125	11.0	20	L542718-02	WG561657
Silver	mg/kg	46.7	51.1	92.0	75-125	9.00	20	L542718-02	WG561657
Zinc	mg/kg	88.8	95.9	91.6	75-125	7.69	20	L542718-02	WG561657
TPH (GC/FID) High Fraction	ppm	47.0	51.7	78.4	50-150	9.40	25	L542640-24	WG561883
o-Terphenyl				63.97	50-150				WG561883
1-Methylnaphthalene	mg/kg	0.0268	0.0267	81.1	25-155	0.186	27	L543086-03	WG562003
2-Chloronaphthalene	mg/kg	0.0286	0.0277	86.6	31-153	3.24	22	L543086-03	WG562003
2-Methylnaphthalene	mg/kg	0.0271	0.0277	82.3	22-172	1.99	29	L543086-03	WG562003
Acenaphthene	mg/kg	0.0256	0.0259	77.7	43-133	0.909	26	L543086-03	WG562003
Acenaphthylene	mg/kg	0.0274	0.0279	82.9	42-146	2.06	22	L543086-03	WG562003
Anthracene	mg/kg	0.0263	0.0288	79.8	38-153	9.01	27	L543086-03	WG562003
Benzo(a)anthracene	mg/kg	0.0257	0.0258	77.7	31-142	0.667	31	L543086-03	WG562003
Benzo(a)pyrene	mg/kg	0.0288	0.0283	87.2	26-152	1.67	32	L543086-03	WG562003
Benzo(b)fluoranthene	mg/kg	0.0270	0.0268	82.0	10-188	0.937	33	L543086-03	WG562003
Benzo(g,h,i)perylene	mg/kg	0.0211	0.0210	64.0	10-176	0.724	30	L543086-03	WG562003
Benzo(k)fluoranthene	mg/kg	0.0271	0.0268	82.1	22-163	1.19	29	L543086-03	WG562003
Chrysene	mg/kg	0.0245	0.0245	74.3	26-146	0.0778	30	L543086-03	WG562003
Dibenz(a,h)anthracene	mg/kg	0.0229	0.0224	69.5	10-160	2.39	39	L543086-03	WG562003
Fluoranthene	mg/kg	0.0279	0.0278	84.5	23-160	0.282	22	L543086-03	WG562003
Fluorene	mg/kg	0.0273	0.0274	82.6	44-143	0.470	23	L543086-03	WG562003
Indeno(1,2,3-cd)pyrene	mg/kg	0.0229	0.0228	69.4	10-157	0.653	40	L543086-03	WG562003
Naphthalene	mg/kg	0.0251	0.0249	75.9	22-156	0.497	27	L543086-03	WG562003

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnCana Oil & Gas Inc. - CO
Chris Hines / Matt Kasten
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L542666

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

October 28, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Phenanthrene	mg/kg	0.0257	0.0257	78.0	23-164	0.154	25	L543086-03		WG562003
Pyrene	mg/kg	0.0260	0.0263	78.9	12-170	0.852	24	L543086-03		WG562003
2-Fluorobiphenyl				78.73	34-129					WG562003
Nitrobenzene-d5				78.31	14-141					WG562003
p-Terphenyl-d14				83.27	25-139					WG562003
Chromium,Hexavalent	mg/kg	12.2	13.8	61.0	50-150	12.3	20	L542714-01		WG561940

Batch number /Run number / Sample number cross reference

WG561636: R1904918: L542666-04
WG561623: R1905152: L542666-01 02 03 04
WG561949: R1905733: L542666-07 08
WG561948: R1905832: L542666-05 06
WG561865: R1905952: L542666-04
WG561657: R1907252: L542666-04
WG561883: R1907512: L542666-01 02 03 04 05 06 07 08
WG562003: R1907832: L542666-04
WG561937: R1908332: L542666-04
WG562171: R1908959: L542666-04
WG561940: R1909693: L542666-04
WG562163: R1911592: L542666-04

* * 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.