



**K04 596 (Location: 335690)**  
**Pit (Facility: 414437)**  
**Encana Oil & Gas (USA) Inc. (Operator: 100185)**

## **REPORT OF WORK COMPLETED**

- Form 27 (Doc: 2232929) (Rem: 7768)

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Report of Work Completed and Notification of Completion) to document closure of a lined earthen pit, cuttings disposal, and material transfer to a well pad in the North Parachute area of operation in Garfield County.

Initial pit closure and characterization efforts were carried out in June, 2010. The pit was drained, and the liner and above liner solids were removed for offsite disposal. Below-liner soil conditions were assessed with field observations and each cell of the pit was characterized with a 5-point composite sample of the pit bottom submitted to the laboratory for analysis. Sample results identified concentrations/levels above the allowable limits in COGCC Table 910-1 for TPH, benzene, SAR, and arsenic. A composite sample of drill cuttings visible onsite was also collected during initial sampling efforts.

Following identification of below-liner impacts, the pit excavations were left open through the remainder of 2010 and early 2011 to allow hydrocarbon impacts to naturally attenuate through biological processes.

Beginning in June, 2011 both pit cells were further characterized with a series of discrete grab samples. Those samples and field observations confirmed persistent hydrocarbon impacts in below-liner soils. A track-hoe was used to remove visually stained soils from both pits, and stockpile material on the pad to support remediation. Competent bedrock was encountered during the second excavation effort which prevented vertical and lateral pursuit of soil impacts to clearance. A final round of grab samples was collected for characterization of the excavations.

In August, 2011 to support interim reclamation and operational plans on the nearby E34 496 well pad (Location ID: 335928), approximately 1000 cubic yards of pit spoil was transferred to this location for remediation and final disposal. Both locations and connecting roads occur entirely upon Encana surface. This transfer was also noted in the Notification of Completion submitted for the pit closure project (Rem5355) on the E34 well pad.

Beginning in September, 2011 the pit spoil from the K04 excavation and the transferred pit spoil from the E34 were laid out separately on the location, and fertilizer and water were applied to support bioremediation of hydrocarbon impacts. During active remediation efforts the stockpiles were turned and watered on a monthly basis.

In October, 2011 the E34 pit spoil cleared and was placed in the pit excavation, along with approximately 800 cubic yards of drill cuttings stockpiled on the location. In addition, approximately 1000 cubic yards of drill cuttings was transported from the A05 596 well pad (Location ID: 335909) for placement in the pit excavation. Both locations and connecting roads occur entirely upon Encana surface. After placement of these materials in the pit footprint, the excavation was backfilled to grade with native material so the location could be used for remediation of impacted materials.

After the pit excavation was backfilled, approximately 400 cubic yards of pit spoil was transported from the G09 596 well pad (Location ID: 335699) and 700 yards from the L27 496 (Location ID: 335939) for remediation with the remaining spoil from the pit closure project on this location. All three (3) stockpiles were blended together and laid out on the location for fertilization and water.

In May, 2012, the remediation lifts were characterized with a series of composites aimed at providing some level of detail relative to TPH concentrations in various parts of the stockpiled material. When those results returned relatively low concentrations for TPH throughout the remediation lift, with some remaining exceedences, the entire stockpile was blended together and three composites, each representative of the entire stockpile were collected.

Upon receipt of laboratory results in compliance with TPH limits for the remaining pit spoil, (material from K04, L27, and G09) the material was placed in a below-grade excavation on the south side of the pad designed and placed by the construction department to be out of reach of future potential occupations, and well below final reclaim grade.

Analytical results are provided in the attached summary table and laboratory reports.

### **NOTIFICATION OF COMPLETION**

After excavation efforts were prevented by the presence of bedrock from pursuing soil impacts any further vertically or laterally, eight (8) more grab samples were collected the pit bottom and walls and were analyzed for TPH. Only three (3) of the final samples returned results above the allowable limit for TPH, and all three were relatively low concentrations. Encana requests that the COGCC consider the following physical and temporal conditions associated with this pit closure project as an alternative to the allowable limit for TPH identified in Table 910-1:

- The pit bottom samples with elevated TPH concentrations were collected from the unrecoverable residual material on top of the bedrock. They are not representative of the bedrock or the geology beneath, and only demonstrate that the removed material had hydrocarbon impacts.
- Encana has maintained an extensive water quality monitoring program in the North Parachute Properties for nearly a decade, which includes quarterly sampling at area springs and streams. The nearest down gradient sampling points are two springs (ENPR5SP & ENPR4SP) and a stream (ENPR22ST), with nearly 4 years of sampling data since the closure of this pit without any water quality problems identified. See attached topographic map for sampling locations.

Arsenic concentrations in the pit bottom and pit and cuttings stockpiles are above the allowable concentration in Table 910-1, but are within the range of background values for 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 values as the allowable concentration for this constituent. With regards to the inorganic constituents (SAR, EC, pH), the material represented by these samples are within the former pit footprint or cut slope, are greater than five feet below the current working surface, and will be at an even greater depth below the final reclaimed surface where the constituents will have no effect on revegetation efforts.

If the information provided here is satisfactory, please close the associated remediation project, and pit facility, and provide documentation of these record closures.

### **ATTACHMENTS**

1. Table – Volumes, Origins, and Description of Material Buried Onsite
2. Topographic Location Map
3. Site Diagram of Disposal Locations
4. Laboratory Results Summary Table
5. Laboratory Reports

**SUMMARY TABLE OF MATERIAL BURIED ON THIS SITE**

<b>Disposal Volume (cubic yards)</b>	<b>Material Description</b>	<b>Material Origin (Location ID)</b>	<b>Associated Remediation Project #</b>	<b>Final Disposition of Material on the K04 well pad</b>
400	Pit spoil	Transferred from G09 596 (335699)	7761 & 7762	Burial Excavation
700	Pit spoil	Transferred from L27 496 (335939)	6130	Burial Excavation
1000	Pit spoil	Transferred from E34 496 (335928)	5355	Pit Excavation
1000	Drill cuttings	Transferred from A05 596 (335909)	NA	Pit Excavation
800	Drill cuttings	K04 596	NA	Pit Excavation
600	Pit spoil	K04 596	NA	Burial Excavation





## North Parachute Mountain

Garfield County, Colorado

0 3,200 6,400 Feet

1 inch = 3,000 feet



T004S-R097W

T005S-R097W

**A05 Well Pad**  
Location ID: 335909  
1000 yards - Drill Cuttings

**L27 Well Pad**  
Location ID: 335939  
700 yards - Pit Spoil

**ENPR5SP**  
spring sampling point

**G09 Well Pad**  
Location ID: 335699  
400 yards - Pit Spoil

T004S-R096W

**E34 Well Pad**  
Location ID: 335928  
1000 yards - Pit Spoil

**K04 Well Pad and Pit**  
Location ID: 335690  
Facility ID: 414437  
Rem #: 7768

**ENPR4SP**  
spring sampling point

**ENPR22ST**  
stream sampling point

**ENPR1ST**  
stream sampling point

T005S-R096W

T004S-R095W

T005S-R095W

- Encana Site Boundary
- Access Road
- Township Boundary
- Surface Ownership**
  - Not Identified Below (clear)
  - EnCana (transparent)
  - USFS (transparent)
  - BLM (transparent)



K04 596 Well Pad - Location ID: 335690  
Aerial Image – June, 2014



Pit Excavation Disposals  
E34 pit spoil (1000 yds)  
A05 cuttings (1000 yds)  
K04 cuttings (800 yds)

Burial Excavation Disposals  
G09 pit spoil (400 yds)  
L27 pit spoil (700 yds)  
K04 pit spoil (600 yds)

Laboratory Results Summary Table

Analyses (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	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	Naphthalene	Pyrene	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		
A05	06/29/11	Cuttings	S stockpile	130	BDL	130	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.0066	BDL	0.016	0.015	0.16	2.3	6.9	8.6	2600	1.7	40	BDL	16	12	0.028	20	BDL	BDL	41		
A05	06/29/11	Cuttings	SE stockpile	5	BDL	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	0.59	6.7	2.5	890	2.2	52	BDL	12	13	BDL	20	BDL	BDL	47	
A05	06/29/11	Cuttings	SW stockpile	10	BDL	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.07	3.1	8.6	5.9	1100	2.4	58	BDL	15	13	BDL	26	BDL	BDL	48	
K04	07/26/10	Cuttings		220	BDL	220	BDL	BDL	0.0079	0.044	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	7.5	14	12	13	3400	1.9	19	BDL	18	21	0.023	11	9.1	BDL	50	
K04	06/21/11	Cuttings																										1.5												
K04	07/26/10	Pit	N pit bottom	8183	83	8100	0.19	BDL	0.06	0.88	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.7	38	8	6.6	3000	0.43	28	BDL	17	14	0.29	13	7.2	BDL	41	
K04	07/26/10	Pit	S pit bottom	7831	31	7800	0.053	BDL	0.044	0.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.7	35	8.3	6.2	3800	0.54	25	BDL	17	14	0.034	14	7.6	BDL	46	
K04	06/21/11	Pit	N pit - grab #1	3500	BDL	3500	BDL																																	
K04	06/21/11	Pit	N pit - grab #2	2701.1	1.1	2700	BDL																																	
K04	06/21/11	Pit	N pit - grab #3	330	BDL	330	0.0035																																	
K04	06/21/11	Pit	N pit - grab #4	770.63	0.63	770	BDL																																	
K04	06/21/11	Pit	N pit - grab #5	131.9	1.9	130	BDL																																	
K04	06/21/11	Pit	S pit - grab #1	490	BDL	490																																		
K04	06/21/11	Pit	S pit - grab #2	10030	30	10000																																		
K04	06/21/11	Pit	S pit - grab #3	9200	BDL	9200																																		
K04	06/21/11	Pit	S pit - grab #4	560	BDL	560																																		
K04	06/21/11	Pit	S pit - grab #5	12003	3	12000																																		
K04	06/21/11	Pit	S pit - grab #6	4001.1	1.1	4000																																		
K04	07/19/11	Pit	North Pit, E wall	1100	BDL	1100	BDL																																	
K04	07/19/11	Pit	North Pit, N bottom	230	BDL	230	BDL																																	
K04	07/19/11	Pit	North Pit, North Wall	96.2	2.6	94	BDL																																	
K04	07/19/11	Pit	South pit, Middle	610	BDL	610																																		
K04	07/19/11	Pit	South pit, N bottom	330	BDL	330																																		
K04	07/19/11	Pit	South Pit, S bottom	540	BDL	540	BDL																																	
K04	07/19/11	Pit	South pit, south toe	BDL	BDL	BDL																																		
K04	07/19/11	Pit	South pit, W wall	BDL	BDL	BDL																																		
K04	07/21/11	Pit	PitX spoil	3400	BDL	3400																																		
K04	08/08/11	Pit	E34 PitX spoil	590	BDL	590																																		
K04	08/08/11	Pit	PitX spoil	2600	BDL	2600																																		
K04	09/07/11	Pit	E34 PitX spoil	520	BDL	520																																		
K04	09/07/11	Pit	PitX Spoil	1100	BDL	1100																																		
K04	09/16/11	Pit	E34 PitX spoil - N1	370	BDL	370	BDL	BDL	BDL	BDL																														
K04	09/16/11	Pit	E34 PitX spoil - N10	200	BDL	200	BDL	BDL	BDL	BDL																														
K04	09/16/11	Pit	E34 PitX spoil - N2	490	BDL	490	BDL	BDL	BDL	BDL																														
K04	09/16/11	Pit	E34 PitX spoil - N3	240	BDL	240	BDL	BDL	BDL	BDL																														



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	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benz(a)anthracene	Benz(b)fluoranthene	Benz(k)fluoranthene	Benz(a)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-CD)pyrene	Naphthalene	Pyrene	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	
K04	09/29/11	Pit	K04 PitX spoil - N4	2000	BDL	2000	BDL	BDL	BDL	BDL									BDL																				
K04	09/29/11	Pit	K04 PitX spoil - N5	1800	BDL	1800	BDL	BDL	BDL	BDL									BDL																				
K04	09/29/11	Pit	K04 PitX spoil - N6	2500	BDL	2500	BDL	BDL	BDL	BDL																													
K04	09/29/11	Pit	K04 PitX spoil - N7	1300	BDL	1300	BDL	BDL	BDL	BDL																													
K04	09/29/11	Pit	K04 PitX spoil - N8	1400	BDL	1400	BDL	BDL	BDL	BDL									BDL																				
K04	10/19/11	Pit	E34 Pit spoil	56	BDL	56	BDL	BDL	BDL	BDL																													
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 1	580	BDL	580																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 10	720	BDL	720																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 11	320	BDL	320																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 12	890	BDL	890																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 13	720	BDL	720																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 14	390	BDL	390																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 15	880	BDL	880																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 16	540	BDL	540																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 17	340	BDL	340																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 2	2400	BDL	2400																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 3	1200	BDL	1200																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 4	320	BDL	320																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 5	190	BDL	190																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 6	280	BDL	280																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 7	280	BDL	280																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 8	420	BDL	420																																	
K04	05/01/12	Pit	K04/G09/L27 pit spoil Node 9	330	BDL	330																																	
K04	06/05/12	Pit	K04/G09/L27 composite 1	400	BDL	400																																	
K04	06/05/12	Pit	K04/G09/L27 composite 2	360	BDL	360																																	
K04	06/05/12	Pit	K04/G09/L27 composite 3	310	BDL	310																																	



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

## Report Summary

Thursday July 07, 2011

Report Number: L523954

Samples Received: 07/01/11

Client Project:

Description: A05 - Cuttings

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

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

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

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REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILSW-062911 8-10IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 08:45

ESC Sample # : L523954-01

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/07/11	1
Chromium, Trivalent	58.	2.0	mg/kg	Calc.	07/03/11	1
ORP	71.		mV	2580	07/05/11	1
pH	8.6		su	9045D	07/06/11	1
Sodium Adsorption Ratio	3.1			Calc.	07/05/11	1
Specific Conductance	70.		umhos/cm	9050AMod	07/06/11	1
Mercury	BDL	0.020	mg/kg	7471	07/02/11	1
Arsenic	5.9	1.0	mg/kg	6010B	07/03/11	1
Barium	1100	0.25	mg/kg	6010B	07/03/11	1
Cadmium	2.4	0.25	mg/kg	6010B	07/03/11	1
Chromium	58.	0.50	mg/kg	6010B	07/03/11	1
Copper	15.	1.0	mg/kg	6010B	07/03/11	1
Lead	13.	0.25	mg/kg	6010B	07/03/11	1
Nickel	26.	1.0	mg/kg	6010B	07/03/11	1
Selenium	BDL	5.0	mg/kg	6010B	07/03/11	5
Silver	BDL	0.50	mg/kg	6010B	07/03/11	1
Zinc	48.	1.5	mg/kg	6010B	07/03/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/04/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.4		% Rec.	8021/8015	07/02/11	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	07/04/11	5
TPH (GC/FID) High Fraction	10.	4.0	mg/kg	3546/DRO	07/06/11	1
Surrogate recovery(%)						
o-Terphenyl	78.8		% Rec.	3546/DRO	07/06/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L523954-01 (PH) - 8.6@20.6c





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Est. 1970

# REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILSW-062911 8-10IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 08:45

ESC Sample # : L523954-01

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Surrogate Recovery						
Nitrobenzene-d5	56.4		% Rec.	8270C-SIM	07/05/11	1
2-Fluorobiphenyl	62.1		% Rec.	8270C-SIM	07/05/11	1
p-Terphenyl-d14	69.6		% Rec.	8270C-SIM	07/05/11	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: 07/07/11 16:37 Printed: 07/07/11 16:59  
L523954-01 (PH) - 8.6@20.6c



REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILS-062911 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 10:05

ESC Sample # : L523954-02

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/07/11	1
Chromium, Trivalent	40.	2.0	mg/kg	Calc.	07/03/11	1
ORP	95.		mV	2580	07/05/11	1
pH	6.9		su	9045D	07/06/11	1
Sodium Adsorption Ratio	2.3			Calc.	07/05/11	1
Specific Conductance	160		umhos/cm	9050AMod	07/06/11	1
Mercury	0.028	0.020	mg/kg	7471	07/02/11	1
Arsenic	8.6	1.0	mg/kg	6010B	07/03/11	1
Barium	2600	0.25	mg/kg	6010B	07/03/11	1
Cadmium	1.7	0.25	mg/kg	6010B	07/03/11	1
Chromium	40.	0.50	mg/kg	6010B	07/03/11	1
Copper	16.	1.0	mg/kg	6010B	07/03/11	1
Lead	12.	0.25	mg/kg	6010B	07/03/11	1
Nickel	20.	1.0	mg/kg	6010B	07/03/11	1
Selenium	BDL	1.0	mg/kg	6010B	07/03/11	1
Silver	BDL	0.50	mg/kg	6010B	07/03/11	1
Zinc	41.	1.5	mg/kg	6010B	07/03/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/02/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/02/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/02/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/02/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	07/02/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	07/02/11	5
TPH (GC/FID) High Fraction	130	4.0	mg/kg	3546/DRO	07/06/11	1
Surrogate recovery(%)						
o-Terphenyl	64.4		% Rec.	3546/DRO	07/06/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L523954-02 (PH) - 6.9@20.5c





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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILS-062911 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 10:05

ESC Sample # : L523954-02

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluorene	0.0066	0.0060	mg/kg	8270C-SIM	07/05/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Naphthalene	0.016	0.0060	mg/kg	8270C-SIM	07/05/11	1
Phenanthrene	0.0093	0.0060	mg/kg	8270C-SIM	07/05/11	1
Pyrene	0.015	0.0060	mg/kg	8270C-SIM	07/05/11	1
1-Methylnaphthalene	0.016	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Methylnaphthalene	0.035	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Surrogate Recovery						
Nitrobenzene-d5	57.0		% Rec.	8270C-SIM	07/05/11	1
2-Fluorobiphenyl	49.1		% Rec.	8270C-SIM	07/05/11	1
p-Terphenyl-d14	54.2		% Rec.	8270C-SIM	07/05/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/07/11 16:37 Printed: 07/07/11 16:59  
L523954-02 (PH) - 6.9@20.5c

REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILSE-062911 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 10:55

ESC Sample # : L523954-03

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/07/11	1
Chromium, Trivalent	52.	0.50	mg/kg	Calc.	07/03/11	1
ORP	99.		mV	2580	07/05/11	1
pH	6.7		su	9045D	07/06/11	1
Sodium Adsorption Ratio	0.59			Calc.	07/05/11	1
Specific Conductance	100		umhos/cm	9050AMod	07/06/11	1
Mercury	BDL	0.020	mg/kg	7471	07/02/11	1
Arsenic	2.5	1.0	mg/kg	6010B	07/03/11	1
Barium	890	0.25	mg/kg	6010B	07/03/11	1
Cadmium	2.2	0.25	mg/kg	6010B	07/03/11	1
Chromium	52.	0.50	mg/kg	6010B	07/03/11	1
Copper	12.	1.0	mg/kg	6010B	07/03/11	1
Lead	13.	0.25	mg/kg	6010B	07/03/11	1
Nickel	20.	1.0	mg/kg	6010B	07/03/11	1
Selenium	BDL	5.0	mg/kg	6010B	07/03/11	5
Silver	BDL	0.50	mg/kg	6010B	07/03/11	1
Zinc	47.	1.5	mg/kg	6010B	07/03/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/02/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/02/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/02/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/02/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	07/02/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	07/02/11	5
TPH (GC/FID) High Fraction	5.0	4.0	mg/kg	3546/DRO	07/06/11	1
Surrogate recovery(%)						
o-Terphenyl	72.5		% Rec.	3546/DRO	07/06/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L523954-03 (PH) - 6.7@20.5c





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# REPORT OF ANALYSIS

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

July 07, 2011

Date Received : July 01, 2011  
Description : A05 - Cuttings  
Sample ID : A05-SPOILSE-062911 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/29/11 10:55

ESC Sample # : L523954-03

Site ID : A05

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	07/05/11	1
Surrogate Recovery						
Nitrobenzene-d5	54.0		% Rec.	8270C-SIM	07/05/11	1
2-Fluorobiphenyl	52.9		% Rec.	8270C-SIM	07/05/11	1
p-Terphenyl-d14	152.		% Rec.	8270C-SIM	07/05/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L523954-03 (PH) - 6.7@20.5c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L523954-01	WG543894	SAMP	Selenium	R1749329	O
L523954-03	WG543894	SAMP	Selenium	R1749329	O
	WG544038	SAMP	p-Terphenyl-d14	R1750051	J1



Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
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.

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.



**YOUR LAB OF CHOICE**

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Chris Hines  
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Parachute, CO 81635

Quality Assurance Report  
Level II

L523954

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Tax I.D. 62-0814289

Est. 1970

July 07, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG543856	07/02/11 04:08
Ethylbenzene	< .0005	mg/kg			WG543856	07/02/11 04:08
Toluene	< .005	mg/kg			WG543856	07/02/11 04:08
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG543856	07/02/11 04:08
Total Xylene	< .0015	mg/kg			WG543856	07/02/11 04:08
a,a,a-Trifluorotoluene(FID)		% Rec.	99.22	59-128	WG543856	07/02/11 04:08
a,a,a-Trifluorotoluene(PID)		% Rec.	104.3	54-144	WG543856	07/02/11 04:08
Mercury	< .02	mg/kg			WG543756	07/02/11 11:34
Arsenic	< 1	mg/kg			WG543894	07/03/11 17:01
Barium	< .25	mg/kg			WG543894	07/03/11 17:01
Cadmium	< .25	mg/kg			WG543894	07/03/11 17:01
Chromium	< .5	mg/kg			WG543894	07/03/11 17:01
Copper	< 1	mg/kg			WG543894	07/03/11 17:01
Lead	< .25	mg/kg			WG543894	07/03/11 17:01
Nickel	< 1	mg/kg			WG543894	07/03/11 17:01
Selenium	< 1	mg/kg			WG543894	07/03/11 17:01
Silver	< .5	mg/kg			WG543894	07/03/11 17:01
Zinc	< 1.5	mg/kg			WG543894	07/03/11 17:01
1-Methylnaphthalene	< .006	mg/kg			WG544038	07/05/11 11:27
2-Chloronaphthalene	< .006	mg/kg			WG544038	07/05/11 11:27
2-Methylnaphthalene	< .006	mg/kg			WG544038	07/05/11 11:27
Acenaphthene	< .006	mg/kg			WG544038	07/05/11 11:27
Acenaphthylene	< .006	mg/kg			WG544038	07/05/11 11:27
Anthracene	< .006	mg/kg			WG544038	07/05/11 11:27
Benzo(a)anthracene	< .006	mg/kg			WG544038	07/05/11 11:27
Benzo(a)pyrene	< .006	mg/kg			WG544038	07/05/11 11:27
Benzo(b)fluoranthene	< .006	mg/kg			WG544038	07/05/11 11:27
Benzo(g,h,i)perylene	< .006	mg/kg			WG544038	07/05/11 11:27
Benzo(k)fluoranthene	< .006	mg/kg			WG544038	07/05/11 11:27
Chrysene	< .006	mg/kg			WG544038	07/05/11 11:27
Dibenz(a,h)anthracene	< .006	mg/kg			WG544038	07/05/11 11:27
Fluoranthene	< .006	mg/kg			WG544038	07/05/11 11:27
Fluorene	< .006	mg/kg			WG544038	07/05/11 11:27
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG544038	07/05/11 11:27
Naphthalene	< .006	mg/kg			WG544038	07/05/11 11:27
Phenanthrene	< .006	mg/kg			WG544038	07/05/11 11:27
Pyrene	< .006	mg/kg			WG544038	07/05/11 11:27
2-Fluorobiphenyl		% Rec.	85.54	21-120	WG544038	07/05/11 11:27
Nitrobenzene-d5		% Rec.	83.85	33-114	WG544038	07/05/11 11:27
p-Terphenyl-d14		% Rec.	90.58	18-142	WG544038	07/05/11 11:27
pH	4.50	su			WG543965	07/06/11 13:34
Specific Conductance	0.560	umhos/cm			WG544228	07/06/11 18:17
TPH (GC/FID) High Fraction	< 4	ppm			WG543797	07/06/11 19:07
o-Terphenyl		% Rec.	75.64	50-150	WG543797	07/06/11 19:07
Chromium,Hexavalent	< 2	mg/kg			WG543815	07/07/11 12:08

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

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





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Est. 1970

July 07, 2011

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Mercury	mg/kg	0	0		0	20	L523905-01	WG543756
Arsenic	mg/kg	8.60	10.2		17.4	20	L523884-01	WG543894
Barium	mg/kg	37.0	40.0		8.33	20	L523884-01	WG543894
Chromium	mg/kg	8.00	9.29		14.3	20	L523884-01	WG543894
Copper	mg/kg	25.0	28.4		11.9	20	L523884-01	WG543894
Lead	mg/kg	78.0	54.2		36.1*	20	L523884-01	WG543894
Nickel	mg/kg	12.0	14.6		16.3	20	L523884-01	WG543894
Silver	mg/kg	0	0.0552		NA	20	L523884-01	WG543894
Zinc	mg/kg	39.0	51.4		26.4*	20	L523884-01	WG543894
Cadmium	mg/kg	0	0		0	20	L523884-01	WG543894
Selenium	mg/kg	16.0	0		NA	20	L523884-01	WG543894
ORP	mV	84.0	82.0		2.41	20	L523950-01	WG544078
ORP	mV	110.	110.		0.913	20	L524165-08	WG544078
pH	su	6.60	6.50		1.53*	1	L523669-09	WG543965
pH	su	9.00	9.10		1.10*	1	L523961-01	WG543965
Specific Conductance	umhos/cm	2500	2700		9.22	20	L523742-01	WG544228
Specific Conductance	umhos/cm	1800	1800		2.19	20	L524092-01	WG544228
Chromium, Hexavalent	mg/kg	0	0		0	20	L523961-01	WG543815
Chromium, Hexavalent	mg/kg	0	0		0	20	L523604-01	WG543815

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0485	96.9	76-113	WG543856
Ethylbenzene	mg/kg	.05	0.0462	92.4	78-115	WG543856
Toluene	mg/kg	.05	0.0473	94.6	76-114	WG543856
Total Xylene	mg/kg	.15	0.142	94.7	81-118	WG543856
a,a,a-Trifluorotoluene(PID)				103.2	54-144	WG543856
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.15	93.6	67-135	WG543856
a,a,a-Trifluorotoluene(FID)				110.1	59-128	WG543856
Mercury	mg/kg	8.77	8.15	92.9	71.6-127.7	WG543756
Arsenic	mg/kg	192	184.	95.8	78.6-120.8	WG543894
Barium	mg/kg	420	412.	98.1	78.8-121.4	WG543894
Cadmium	mg/kg	70.1	66.6	95.0	78.5-121.5	WG543894
Chromium	mg/kg	168	166.	98.8	80.4-120.2	WG543894
Copper	mg/kg	122	126.	103.	81.6-119.7	WG543894
Lead	mg/kg	113	110.	97.3	77.3-122.1	WG543894
Nickel	mg/kg	74.1	71.5	96.5	78.8-121.2	WG543894
Selenium	mg/kg	176	165.	93.8	75.6-125.0	WG543894
Silver	mg/kg	115	110.	95.7	66-133.9	WG543894
Zinc	mg/kg	437	439.	100.	78.5-121.7	WG543894
ORP	mV	229	220.	96.1	95.6-104.37	WG544078

\* 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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Tax I.D. 62-0814289

Est. 1970

July 07, 2011

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
1-Methylnaphthalene	mg/kg	.033		0.0288	87.3	41-110	WG544038
2-Chloronaphthalene	mg/kg	.033		0.0296	89.8	43-109	WG544038
2-Methylnaphthalene	mg/kg	.033		0.0285	86.5	38-104	WG544038
Acenaphthene	mg/kg	.033		0.0281	85.1	48-103	WG544038
Acenaphthylene	mg/kg	.033		0.0288	87.3	43-106	WG544038
Anthracene	mg/kg	.033		0.0298	90.2	51-110	WG544038
Benzo(a)anthracene	mg/kg	.033		0.0278	84.1	38-126	WG544038
Benzo(a)pyrene	mg/kg	.033		0.0310	93.9	47-118	WG544038
Benzo(b)fluoranthene	mg/kg	.033		0.0321	97.3	47-118	WG544038
Benzo(g,h,i)perylene	mg/kg	.033		0.0303	91.7	40-125	WG544038
Benzo(k)fluoranthene	mg/kg	.033		0.0297	90.0	45-121	WG544038
Chrysene	mg/kg	.033		0.0311	94.2	35-135	WG544038
Dibenz(a,h)anthracene	mg/kg	.033		0.0296	89.7	41-124	WG544038
Fluoranthene	mg/kg	.033		0.0314	95.1	50-114	WG544038
Fluorene	mg/kg	.033		0.0291	88.2	49-109	WG544038
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0301	91.2	40-126	WG544038
Naphthalene	mg/kg	.033		0.0276	83.7	36-100	WG544038
Phenanthrene	mg/kg	.033		0.0298	90.3	46-108	WG544038
Pyrene	mg/kg	.033		0.0294	89.0	30-136	WG544038
2-Fluorobiphenyl					88.82	33-114	WG544038
Nitrobenzene-d5					86.70	21-120	WG544038
p-Terphenyl-d14					89.98	18-142	WG544038
pH	su	6.3		6.30	100.	97.98-102.02	WG543965
Specific Conductance	umhos/cm	445		440.	98.9	85-115	WG544228
TPH (GC/FID) High Fraction	ppm	60		48.3	80.5	50-150	WG543797
o-Terphenyl					77.62	50-150	WG543797
Chromium,Hexavalent	mg/kg	132		90.6	68.6	50-150	WG543815

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0493	0.0485	99.0	76-113	1.78	20	WG543856
Ethylbenzene	mg/kg	0.0473	0.0462	95.0	78-115	2.40	20	WG543856
Toluene	mg/kg	0.0476	0.0473	95.0	76-114	0.780	20	WG543856
Total Xylene	mg/kg	0.144	0.142	96.0	81-118	1.18	20	WG543856
a,a,a-Trifluorotoluene(PID)				104.0	54-144			WG543856
TPH (GC/FID) Low Fraction	mg/kg	5.18	5.15	94.0	67-135	0.570	20	WG543856
a,a,a-Trifluorotoluene(FID)				110.9	59-128			WG543856
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG544078
1-Methylnaphthalene	mg/kg	0.0249	0.0288	75.0	41-110	14.6	24	WG544038
2-Chloronaphthalene	mg/kg	0.0249	0.0296	76.0	43-109	17.2	21	WG544038
2-Methylnaphthalene	mg/kg	0.0244	0.0285	74.0	38-104	15.6	24	WG544038
Acenaphthene	mg/kg	0.0254	0.0281	77.0	48-103	9.93	20	WG544038
Acenaphthylene	mg/kg	0.0257	0.0288	78.0	43-106	11.3	20	WG544038
Anthracene	mg/kg	0.0278	0.0298	84.0	51-110	6.67	22	WG544038
Benzo(a)anthracene	mg/kg	0.0261	0.0278	79.0	38-126	6.16	20	WG544038

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

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Tax I.D. 62-0814289

Est. 1970

July 07, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzo(a)pyrene	mg/kg	0.0288	0.0310	87.0		47-118	7.47	20	WG544038
Benzo(b)fluoranthene	mg/kg	0.0279	0.0321	84.0		47-118	14.1	29	WG544038
Benzo(g,h,i)perylene	mg/kg	0.0283	0.0303	86.0		40-125	6.75	20	WG544038
Benzo(k)fluoranthene	mg/kg	0.0301	0.0297	91.0		45-121	1.21	31	WG544038
Chrysene	mg/kg	0.0290	0.0311	88.0		35-135	6.98	20	WG544038
Dibenz(a,h)anthracene	mg/kg	0.0279	0.0296	85.0		41-124	5.77	20	WG544038
Fluoranthene	mg/kg	0.0292	0.0314	88.0		50-114	7.29	20	WG544038
Fluorene	mg/kg	0.0263	0.0291	80.0		49-109	10.2	19	WG544038
Indeno(1,2,3-cd)pyrene	mg/kg	0.0280	0.0301	85.0		40-126	7.21	20	WG544038
Naphthalene	mg/kg	0.0232	0.0276	70.0		36-100	17.5	24	WG544038
Phenanthrene	mg/kg	0.0271	0.0298	82.0		46-108	9.58	21	WG544038
Pyrene	mg/kg	0.0280	0.0294	85.0		30-136	4.93	20	WG544038
2-Fluorobiphenyl				79.03		33-114			WG544038
Nitrobenzene-d5				72.19		21-120			WG544038
p-Terphenyl-d14				85.89		18-142			WG544038
pH	su	6.30	6.30	100.		97.98-102.02	0	20	WG543965
Specific Conductance	umhos/	440.	440.	99.0		85-115	0	20	WG544228
TPH (GC/FID) High Fraction	ppm	46.0	48.3	77.0		50-150	4.81	25	WG543797
o-Terphenyl				76.05		50-150			WG543797
Chromium,Hexavalent	mg/kg	107.	90.6	81.0		50-150	16.6	20	WG543815

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
TPH (GC/FID) Low Fraction	mg/kg	23.1	0	5.5	83.9	55-109	L523954-01	WG543856
a,a,a-Trifluorotoluene(FID)					108.2	59-128		WG543856
Mercury	mg/kg	0.246	0	.25	98.4	70-130	L523905-01	WG543756
Arsenic	mg/kg	57.8	10.2	50	95.2	75-125	L523884-01	WG543894
Barium	mg/kg	80.6	40.0	50	81.2	75-125	L523884-01	WG543894
Chromium	mg/kg	55.2	9.29	50	91.8	75-125	L523884-01	WG543894
Copper	mg/kg	77.7	28.4	50	98.6	75-125	L523884-01	WG543894
Lead	mg/kg	103.	54.2	50	97.6	75-125	L523884-01	WG543894
Nickel	mg/kg	58.5	14.6	50	87.8	75-125	L523884-01	WG543894
Silver	mg/kg	51.3	0.0552	50	102.	75-125	L523884-01	WG543894
Zinc	mg/kg	82.4	51.4	50	62.0*	75-125	L523884-01	WG543894
Cadmium	mg/kg	50.6	0	10	101.	75-125	L523884-01	WG543894
Selenium	mg/kg	67.6	0	10	135.*	75-125	L523884-01	WG543894
Benzene	mg/kg	0.237	0	.05	94.8	32-137	L523954-01	WG543856
Ethylbenzene	mg/kg	0.227	0	.05	90.6	10-150	L523954-01	WG543856
Toluene	mg/kg	0.251	0	.05	100.	20-142	L523954-01	WG543856
Total Xylene	mg/kg	0.658	0	.15	87.7	16-141	L523954-01	WG543856
a,a,a-Trifluorotoluene(PID)					108.1	54-144		WG543856
1-Methylnaphthalene	mg/kg	0.0268	0	.033	81.3	19-131	L523592-02	WG544038

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

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
2-Chloronaphthalene	mg/kg	0.0353	0	.033	107.	38-117	L523592-02	WG544038
2-Methylnaphthalene	mg/kg	0.0312	0	.033	94.5	18-125	L523592-02	WG544038
Acenaphthene	mg/kg	0.0270	0	.033	81.9	31-120	L523592-02	WG544038
Acenaphthylene	mg/kg	0.0378	0	.033	115.	34-116	L523592-02	WG544038
Anthracene	mg/kg	0.0384	0	.033	116.	32-131	L523592-02	WG544038
Benzo(a)anthracene	mg/kg	0.0333	0	.033	101.	32-131	L523592-02	WG544038
Benzo(a)pyrene	mg/kg	0.0305	0	.033	92.3	28-130	L523592-02	WG544038
Benzo(b)fluoranthene	mg/kg	0.0337	0	.033	102.	37-130	L523592-02	WG544038
Benzo(g,h,i)perylene	mg/kg	0.0299	0	.033	90.7	10-134	L523592-02	WG544038
Benzo(k)fluoranthene	mg/kg	0.0289	0	.033	87.7	31-129	L523592-02	WG544038
Chrysene	mg/kg	0.0360	0	.033	109.	25-137	L523592-02	WG544038
Dibenz(a,h)anthracene	mg/kg	0.0290	0	.033	88.0	20-134	L523592-02	WG544038
Fluoranthene	mg/kg	0.0281	0.0210	.033	21.6*	27-138	L523592-02	WG544038
Fluorene	mg/kg	0.0370	0	.033	112.	26-136	L523592-02	WG544038
Indeno(1,2,3-cd)pyrene	mg/kg	0.0297	0	.033	90.2	16-135	L523592-02	WG544038
Naphthalene	mg/kg	0.0278	0	.033	84.4	22-121	L523592-02	WG544038
Phenanthrene	mg/kg	0.0363	0	.033	110.	27-133	L523592-02	WG544038
Pyrene	mg/kg	0.0922	0	.033	279.*	22-133	L523592-02	WG544038
2-Fluorobiphenyl					84.22	33-114		WG544038
Nitrobenzene-d5					95.25	21-120		WG544038
p-Terphenyl-d14					111.4	18-142		WG544038
TPH (GC/FID) High Fraction	ppm	46.9	0	60	78.2	50-150	L523376-06	WG543797
o-Terphenyl					73.25	50-150		WG543797
TPH (GC/FID) High Fraction	ppm	46.9	0	60	78.1	50-150	L523376-08	WG543797
o-Terphenyl					75.31	50-150		WG543797
Chromium,Hexavalent	mg/kg	11.7	0	20	58.5	50-150	L523669-05	WG543815

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	19.6	23.1	71.4	55-109	16.0	20	L523954-01	WG543856
a,a,a-Trifluorotoluene(FID)				107.0	59-128				WG543856
Mercury	mg/kg	0.258	0.246	103.	70-130	4.76	20	L523905-01	WG543756
Arsenic	mg/kg	54.6	57.8	88.8	75-125	5.69	20	L523884-01	WG543894
Barium	mg/kg	79.8	80.6	79.6	75-125	0.998	20	L523884-01	WG543894
Chromium	mg/kg	54.9	55.2	91.2	75-125	0.545	20	L523884-01	WG543894
Copper	mg/kg	95.2	77.7	134.*	75-125	20.2*	20	L523884-01	WG543894
Lead	mg/kg	179.	103.	250.*	75-125	53.9*	20	L523884-01	WG543894
Nickel	mg/kg	58.1	58.5	87.0	75-125	0.686	20	L523884-01	WG543894
Silver	mg/kg	48.2	51.3	96.3	75-125	6.23	20	L523884-01	WG543894
Zinc	mg/kg	97.5	82.4	92.2	75-125	16.8	20	L523884-01	WG543894
Cadmium	mg/kg	51.6	50.6	103.	75-125	1.96	20	L523884-01	WG543894
Selenium	mg/kg	62.4	67.6	125.	75-125	8.00	20	L523884-01	WG543894
Benzene	mg/kg	0.236	0.237	94.3	32-137	0.560	39	L523954-01	WG543856
Ethylbenzene	mg/kg	0.228	0.227	91.4	10-150	0.850	44	L523954-01	WG543856
Toluene	mg/kg	0.249	0.251	99.6	20-142	0.620	42	L523954-01	WG543856
Total Xylene	mg/kg	0.660	0.658	87.9	16-141	0.280	46	L523954-01	WG543856
a,a,a-Trifluorotoluene(PID)				107.3	54-144				WG543856

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

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0244	0.0268	74.0	19-131	9.40	30	L523592-02	WG544038
2-Chloronaphthalene	mg/kg	0.0296	0.0353	89.6	38-117	17.8	26	L523592-02	WG544038
2-Methylnaphthalene	mg/kg	0.0263	0.0312	79.6	18-125	17.1	29	L523592-02	WG544038
Acenaphthene	mg/kg	0.0245	0.0270	74.1	31-120	10.0	30	L523592-02	WG544038
Acenaphthylene	mg/kg	0.0316	0.0378	95.7	34-116	18.0	29	L523592-02	WG544038
Anthracene	mg/kg	0.0326	0.0384	98.7	32-131	16.4	26	L523592-02	WG544038
Benzo(a)anthracene	mg/kg	0.0300	0.0333	91.0	32-131	10.3	31	L523592-02	WG544038
Benzo(a)pyrene	mg/kg	0.0279	0.0305	84.6	28-130	8.68	28	L523592-02	WG544038
Benzo(b)fluoranthene	mg/kg	0.0291	0.0337	88.2	37-130	14.5	41	L523592-02	WG544038
Benzo(g,h,i)perylene	mg/kg	0.0282	0.0299	85.4	10-134	5.99	26	L523592-02	WG544038
Benzo(k)fluoranthene	mg/kg	0.0279	0.0289	84.6	31-129	3.65	42	L523592-02	WG544038
Chrysene	mg/kg	0.0322	0.0360	97.5	25-137	11.3	22	L523592-02	WG544038
Dibenz(a,h)anthracene	mg/kg	0.0269	0.0290	81.6	20-134	7.50	25	L523592-02	WG544038
Fluoranthene	mg/kg	0.0258	0.0281	14.4*	27-138	8.83	35	L523592-02	WG544038
Fluorene	mg/kg	0.0306	0.0370	92.8	26-136	18.7	30	L523592-02	WG544038
Indeno(1,2,3-cd)pyrene	mg/kg	0.0269	0.0297	81.5	16-135	10.1	26	L523592-02	WG544038
Naphthalene	mg/kg	0.0258	0.0278	78.1	22-121	7.71	30	L523592-02	WG544038
Phenanthrene	mg/kg	0.0344	0.0363	104.	27-133	5.38	36	L523592-02	WG544038
Pyrene	mg/kg	0.0709	0.0922	215.*	22-133	26.0	33	L523592-02	WG544038
2-Fluorobiphenyl				81.00	33-114				WG544038
Nitrobenzene-d5				84.50	21-120				WG544038
p-Terphenyl-d14				98.80	18-142				WG544038
TPH (GC/FID) High Fraction	ppm	46.9	46.9	78.2	50-150	0.0137	25	L523376-06	WG543797
o-Terphenyl				77.42	50-150				WG543797
TPH (GC/FID) High Fraction	ppm	47.9	46.9	79.8	50-150	2.22	25	L523376-08	WG543797
o-Terphenyl				74.30	50-150				WG543797
Chromium,Hexavalent	mg/kg	10.8	11.7	54.0	50-150	8.00	20	L523669-05	WG543815

Batch number /Run number / Sample number cross reference

WG543856: R1748609 R1749469: L523954-01 02 03 01  
WG543756: R1749136: L523954-01 02 03  
WG543894: R1749329: L523954-01 02 03  
WG543924: R1749618: L523954-01 02 03  
WG544078: R1749997: L523954-01 02 03  
WG544038: R1750051: L523954-01 02 03  
WG543965: R1750929: L523954-01 02 03  
WG544228: R1751493: L523954-01 02 03  
WG543797: R1751570: L523954-01 02 03  
WG543815: R1751731: L523954-01 02 03

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

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

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

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

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

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





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Chris Hines  
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2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Monday August 02, 2010

Report Number: L470860

Samples Received: 07/28/10

Client Project:

Description: K04 Pit Closure

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 - 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

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

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

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REPORT OF ANALYSIS

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

August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - CUTTINGS - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 12:25

ESC Sample # : L470860-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/30/10	1
Chromium, Trivalent	19.	2.0	mg/kg	Calc.	07/30/10	1
ORP	8.0		mV	2580	07/30/10	1
pH	12.		su	9045D	07/29/10	1
Sodium Adsorption Ratio	14.			Calc.	07/28/10	1
Specific Conductance	7500		umhos/cm	9050AMod	07/30/10	1
Mercury	0.023	0.020	mg/kg	7471	07/29/10	1
Arsenic	13.	5.0	mg/kg	6010B	07/30/10	5
Barium	3400	0.25	mg/kg	6010B	07/30/10	1
Cadmium	1.9	0.25	mg/kg	6010B	07/30/10	1
Chromium	19.	0.50	mg/kg	6010B	07/30/10	1
Copper	18.	1.0	mg/kg	6010B	07/30/10	1
Lead	21.	0.25	mg/kg	6010B	07/30/10	1
Nickel	11.	1.0	mg/kg	6010B	07/30/10	1
Selenium	9.1	1.0	mg/kg	6010B	07/30/10	1
Silver	BDL	0.50	mg/kg	6010B	07/30/10	1
Zinc	50.	1.5	mg/kg	6010B	07/30/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/29/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/29/10	5
Ethylbenzene	0.0079	0.0025	mg/kg	8021/8015	07/29/10	5
Total Xylene	0.044	0.0075	mg/kg	8021/8015	07/29/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/29/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	105.		% Rec.	8021/8015	07/29/10	5
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	07/29/10	5
TPH (GC/FID) High Fraction	220	4.0	mg/kg	3546/DRO	07/29/10	1
Surrogate recovery(%)						
o-Terphenyl	98.8		% Rec.	3546/DRO	07/29/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L470860-01 (PH) - 12.0@22.0c



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Est. 1970

# REPORT OF ANALYSIS

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

August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - CUTTINGS - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 12:25

ESC Sample # : L470860-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(g,h,i)perylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(k)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Chrysene	BDL	0.66	mg/kg	8270C	07/30/10	20
Dibenz(a,h)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluorene	BDL	0.66	mg/kg	8270C	07/30/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Naphthalene	BDL	0.66	mg/kg	8270C	07/30/10	20
Phenanthrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	07/30/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C	07/30/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C	07/30/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 08/02/10 10:20 Printed: 08/02/10 10:20  
L470860-01 (PH) - 12.0@22.0c



Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L470860-01	WG490768	SAMP	Anthracene	R1305288	O
	WG490768	SAMP	Acenaphthene	R1305288	O
	WG490768	SAMP	Acenaphthylene	R1305288	O
	WG490768	SAMP	Benzo(a)anthracene	R1305288	O
	WG490768	SAMP	Benzo(a)pyrene	R1305288	O
	WG490768	SAMP	Benzo(b)fluoranthene	R1305288	O
	WG490768	SAMP	Benzo(g,h,i)perylene	R1305288	O
	WG490768	SAMP	Benzo(k)fluoranthene	R1305288	O
	WG490768	SAMP	Chrysene	R1305288	O
	WG490768	SAMP	Dibenz(a,h)anthracene	R1305288	O
	WG490768	SAMP	Fluoranthene	R1305288	O
	WG490768	SAMP	Fluorene	R1305288	O
	WG490768	SAMP	Indeno(1,2,3-cd)pyrene	R1305288	O
	WG490768	SAMP	Naphthalene	R1305288	O
	WG490768	SAMP	Phenanthrene	R1305288	O
	WG490768	SAMP	Pyrene	R1305288	O
	WG490768	SAMP	Nitrobenzene-d5	R1305288	J7
	WG490768	SAMP	2-Fluorobiphenyl	R1305288	J7
	WG490768	SAMP	p-Terphenyl-d14	R1305288	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
0	(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.

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  
08/02/10 at 10:20:58

TSR Signing Reports: 358  
R3 - Rush: Two Day

Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L470860-01 Account: ENCANACO Received: 07/28/10 09:00 Due Date: 07/30/10 00:00 RPT Date: 08/02/10 10:20





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August 02, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Ethylbenzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Toluene	< .005	mg/kg			WG490674	07/28/10 15:57
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG490674	07/28/10 15:57
Total Xylene	< .0015	mg/kg			WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	103.4	59-128	WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG490674	07/28/10 15:57
TPH (GC/FID) High Fraction	< 4	ppm			WG490759	07/29/10 09:31
o-Terphenyl		% Rec.	87.45	50-150	WG490759	07/29/10 09:31
Mercury	< .02	mg/kg			WG490709	07/29/10 09:36
Arsenic	< 1	mg/kg			WG490725	07/29/10 10:33
Barium	< .25	mg/kg			WG490725	07/29/10 10:33
Cadmium	< .25	mg/kg			WG490725	07/29/10 10:33
Chromium	< .5	mg/kg			WG490725	07/29/10 10:33
Lead	< .25	mg/kg			WG490725	07/29/10 10:33
Nickel	< 1	mg/kg			WG490725	07/29/10 10:33
Selenium	< 1	mg/kg			WG490725	07/29/10 10:33
Zinc	< 1.5	mg/kg			WG490725	07/29/10 10:33
Copper	< 1	mg/kg			WG490725	07/29/10 15:55
pH	4.20	su			WG490828	07/29/10 17:20
Acenaphthene	< .033	mg/kg			WG490768	07/29/10 17:49
Acenaphthylene	< .033	mg/kg			WG490768	07/29/10 17:49
Anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(b)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(g,h,i)perylene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(k)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Chrysene	< .033	mg/kg			WG490768	07/29/10 17:49
Dibenz(a,h)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluorene	< .033	mg/kg			WG490768	07/29/10 17:49
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Naphthalene	< .033	mg/kg			WG490768	07/29/10 17:49
Phenanthrene	< .033	mg/kg			WG490768	07/29/10 17:49
Pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
2-Fluorobiphenyl		% Rec.	79.30	37-123	WG490768	07/29/10 17:49
Nitrobenzene-d5		% Rec.	79.08	19-129	WG490768	07/29/10 17:49
p-Terphenyl-d14		% Rec.	94.43	34-149	WG490768	07/29/10 17:49
Silver	< .5	mg/kg			WG490725	07/30/10 10:12
Specific Conductance	1.90	umhos/cm			WG490835	07/30/10 14:00
Chromium,Hexavalent	< 2	mg/kg			WG490809	07/30/10 16:46

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



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August 02, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Silver	< .5	mg/kg			WG490725	07/29/10 21:32

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0	0	20	L470507-01	WG490709
Arsenic	mg/kg	7.20	6.90	4.67	20	L470846-01	WG490725
Barium	mg/kg	210.	200.	2.96	20	L470846-01	WG490725
Cadmium	mg/kg	0.340	0.320	5.47	20	L470846-01	WG490725
Chromium	mg/kg	34.0	33.0	4.44	20	L470846-01	WG490725
Copper	mg/kg	11.0	10.0	5.83	20	L470846-01	WG490725
Lead	mg/kg	13.0	12.0	6.45	20	L470846-01	WG490725
Nickel	mg/kg	0	0	0	20	L470846-01	WG490725
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
Silver	mg/kg	0	0	0	20	L470846-01	WG490725
Zinc	mg/kg	47.0	44.0	6.38	20	L470846-01	WG490725
pH	su	7.70	7.90	2.56*	1	L470791-01	WG490828
pH	su	7.00	7.10	1.42*	1	L470964-01	WG490828
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
ORP	mV	0	0	0	20	L470864-01	WG490832
ORP	mV	7.00	8.00	13.3	20	L470868-01	WG490832
Specific Conductance	umhos/cm	37.0	36.0	3.55	20	L470864-01	WG490835
Specific Conductance	umhos/cm	6600	6600	0.454	20	L470868-01	WG490835
Chromium,Hexavalent	mg/kg	57.0	57.0	0	20	L470330-14	WG490809
Chromium,Hexavalent	mg/kg	0	0	0	20	L470864-01	WG490809

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0560	112.	76-113	WG490674
Ethylbenzene	mg/kg	.05	0.0571	114.	78-115	WG490674
Toluene	mg/kg	.05	0.0561	112.	76-114	WG490674
Total Xylene	mg/kg	.15	0.165	110.	81-118	WG490674
a,a,a-Trifluorotoluene(PID)				106.3	54-144	WG490674
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.42	117.	67-135	WG490674
a,a,a-Trifluorotoluene(FID)				109.1	59-128	WG490674
TPH (GC/FID) High Fraction	ppm	60	46.2	77.0	50-150	WG490759
o-Terphenyl				89.54	50-150	WG490759
Mercury	mg/kg	8.77	9.77	111.	71.6-127.7	WG490709
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG490725

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Barium	mg/kg	420	385.	91.7	78.8-121.4	WG490725
Cadmium	mg/kg	70.1	64.0	91.3	78.5-121.5	WG490725
Chromium	mg/kg	168	156.	92.9	80.4-120.2	WG490725
Copper	mg/kg	122	121.	99.2	81.6-119.7	WG490725
Lead	mg/kg	113	106.	93.8	77.3-122.1	WG490725
Nickel	mg/kg	74.1	64.9	87.6	78.8-121.2	WG490725
Selenium	mg/kg	176	155.	88.1	75.6-125.0	WG490725
Silver	mg/kg	115	105.	91.3	66-133.9	WG490725
Zinc	mg/kg	437	409.	93.6	78.5-121.7	WG490725
pH	su	9.36	9.30	99.4	98.9-102.0	WG490828
Acenaphthene	mg/kg	.167	0.141	84.6	44-117	WG490768
Acenaphthylene	mg/kg	.167	0.138	82.4	43-118	WG490768
Anthracene	mg/kg	.167	0.140	83.9	42-127	WG490768
Benzo(a)anthracene	mg/kg	.167	0.146	87.6	45-127	WG490768
Benzo(a)pyrene	mg/kg	.167	0.140	83.7	46-123	WG490768
Benzo(b)fluoranthene	mg/kg	.167	0.146	87.4	43-126	WG490768
Benzo(g,h,i)perylene	mg/kg	.167	0.159	95.0	43-128	WG490768
Benzo(k)fluoranthene	mg/kg	.167	0.139	83.1	40-126	WG490768
Chrysene	mg/kg	.167	0.146	87.4	44-129	WG490768
Dibenz(a,h)anthracene	mg/kg	.167	0.159	95.3	43-127	WG490768
Fluoranthene	mg/kg	.167	0.146	87.6	44-125	WG490768
Fluorene	mg/kg	.167	0.138	82.4	45-121	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.160	95.9	43-127	WG490768
Naphthalene	mg/kg	.167	0.133	79.5	32-113	WG490768
Phenanthrene	mg/kg	.167	0.144	86.2	43-124	WG490768
Pyrene	mg/kg	.167	0.147	88.2	47-128	WG490768
2-Fluorobiphenyl				87.72	37-123	WG490768
Nitrobenzene-d5				81.69	19-129	WG490768
p-Terphenyl-d14				102.5	34-149	WG490768
ORP	mV	229	220.	96.1	95.6-104.37	WG490832
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG490835
Chromium,Hexavalent	mg/kg	100	93.3	93.3	50-143	WG490809

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0547	0.0560	109.	76-113	2.36	20	WG490674
Ethylbenzene	mg/kg	0.0570	0.0571	114.	78-115	0.110	20	WG490674
Toluene	mg/kg	0.0552	0.0561	110.	76-114	1.47	20	WG490674
Total Xylene	mg/kg	0.165	0.165	110.	81-118	0.170	20	WG490674
a,a,a-Trifluorotoluene(PID)				106.2	54-144			WG490674
TPH (GC/FID) Low Fraction	mg/kg	6.05	6.42	110.	67-135	5.83	20	WG490674
a,a,a-Trifluorotoluene(FID)				106.8	59-128			WG490674
TPH (GC/FID) High Fraction	ppm	46.3	46.2	77.0	50-150	0.188	25	WG490759
o-Terphenyl				87.23	50-150			WG490759

\* Performance of this Analyte is outside of established criteria.  
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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG490828
Acenaphthene	mg/kg	0.138	0.141	82.0	44-117	2.41	21	WG490768
Acenaphthylene	mg/kg	0.143	0.138	85.0	43-118	3.46	20	WG490768
Anthracene	mg/kg	0.147	0.140	88.0	42-127	4.67	21	WG490768
Benzo(a)anthracene	mg/kg	0.153	0.146	91.0	45-127	4.29	21	WG490768
Benzo(a)pyrene	mg/kg	0.149	0.140	89.0	46-123	6.34	20	WG490768
Benzo(b)fluoranthene	mg/kg	0.149	0.146	89.0	43-126	1.91	27	WG490768
Benzo(g,h,i)perylene	mg/kg	0.165	0.159	99.0	43-128	3.95	20	WG490768
Benzo(k)fluoranthene	mg/kg	0.152	0.139	91.0	40-126	8.83	32	WG490768
Chrysene	mg/kg	0.152	0.146	91.0	44-129	3.89	22	WG490768
Dibenz(a,h)anthracene	mg/kg	0.167	0.159	100.	43-127	5.05	20	WG490768
Fluoranthene	mg/kg	0.152	0.146	91.0	44-125	4.03	22	WG490768
Fluorene	mg/kg	0.144	0.138	86.0	45-121	4.45	20	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.169	0.160	101.	43-127	5.17	21	WG490768
Naphthalene	mg/kg	0.136	0.133	82.0	32-113	2.67	26	WG490768
Phenanthrene	mg/kg	0.144	0.144	86.0	43-124	0.117	21	WG490768
Pyrene	mg/kg	0.160	0.147	96.0	47-128	8.57	20	WG490768
2-Fluorobiphenyl				82.77	37-123			WG490768
Nitrobenzene-d5				80.64	19-129			WG490768
p-Terphenyl-d14				101.8	34-149			WG490768
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG490832
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG490835
Chromium,Hexavalent	mg/kg	96.6	93.3	97.0	50-143	3.48	20	WG490809

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.239	0	.05	95.7	32-137	L470846-01	WG490674
Ethylbenzene	mg/kg	0.216	0	.05	86.2	10-150	L470846-01	WG490674
Toluene	mg/kg	0.225	0	.05	90.1	20-142	L470846-01	WG490674
Total Xylene	mg/kg	0.627	0	.15	83.6	16-141	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)					104.1	54-144		WG490674
TPH (GC/FID) Low Fraction	mg/kg	23.0	0	5.5	83.7	55-109	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)					111.9	59-128		WG490674
Mercury	mg/kg	0.222	0	.25	88.8	70-130	L470507-01	WG490709
Arsenic	mg/kg	52.1	6.90	50	90.4	75-125	L470846-01	WG490725
Barium	mg/kg	251.	200.	50	102.	75-125	L470846-01	WG490725
Cadmium	mg/kg	43.8	0.320	50	87.0	75-125	L470846-01	WG490725
Chromium	mg/kg	78.0	33.0	50	90.0	75-125	L470846-01	WG490725
Copper	mg/kg	56.2	10.0	50	92.4	75-125	L470846-01	WG490725
Lead	mg/kg	58.2	12.0	50	92.4	75-125	L470846-01	WG490725
Nickel	mg/kg	47.2	0	50	94.4	75-125	L470846-01	WG490725
Silver	mg/kg	42.5	0	50	85.0	75-125	L470846-01	WG490725
Zinc	mg/kg	89.0	44.0	50	90.0	75-125	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	49.0	0	60	81.6	50-150	L470918-01	WG490759

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

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Quality Assurance Report  
Level II

L470860

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Tax I.D. 62-0814289

Est. 1970

August 02, 2010

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref	Res				
o-Terphenyl					91.41	50-150		
Acenaphthene	mg/kg	0.143	0	.167	85.7	38-121	L470884-07	WG490768
Acenaphthylene	mg/kg	0.141	0	.167	84.6	39-120	L470884-07	WG490768
Anthracene	mg/kg	0.142	0	.167	84.9	35-133	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.142	0	.167	85.3	35-136	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.120	0	.167	71.7	37-131	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.5	29-145	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.123	0	.167	73.7	10-139	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.113	0	.167	67.6	31-140	L470884-07	WG490768
Chrysene	mg/kg	0.135	0	.167	81.1	34-137	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.126	0	.167	75.7	21-132	L470884-07	WG490768
Fluoranthene	mg/kg	0.153	0	.167	91.7	34-132	L470884-07	WG490768
Fluorene	mg/kg	0.143	0	.167	85.7	38-126	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.127	0	.167	76.2	17-134	L470884-07	WG490768
Naphthalene	mg/kg	0.143	0	.167	85.6	24-122	L470884-07	WG490768
Phenanthrene	mg/kg	0.150	0	.167	89.8	38-128	L470884-07	WG490768
Pyrene	mg/kg	0.146	0	.167	87.5	35-141	L470884-07	WG490768
2-Fluorobiphenyl					87.38	37-123		WG490768
Nitrobenzene-d5					85.39	19-129		WG490768
p-Terphenyl-d14					91.52	34-149		WG490768
Selenium	mg/kg	46.1	0	10	92.2	75-125	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.0	0	20	55.0	50-150	L470865-01	WG490809

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.255	0.239	102.	32-137	6.22	39	L470846-01	WG490674
Ethylbenzene	mg/kg	0.227	0.216	90.8	10-150	5.15	44	L470846-01	WG490674
Toluene	mg/kg	0.240	0.225	95.8	20-142	6.14	42	L470846-01	WG490674
Total Xylene	mg/kg	0.651	0.627	86.8	16-141	3.74	46	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)				105.2	54-144				WG490674
TPH (GC/FID) Low Fraction	mg/kg	17.4	23.0	63.2	55-109	28.0*	20	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG490674
Mercury	mg/kg	0.240	0.222	96.0	70-130	7.79	20	L470507-01	WG490709
Arsenic	mg/kg	51.1	52.1	88.4	75-125	1.94	20	L470846-01	WG490725
Barium	mg/kg	256.	251.	112.	75-125	1.97	20	L470846-01	WG490725
Cadmium	mg/kg	43.0	43.8	85.4	75-125	1.84	20	L470846-01	WG490725
Chromium	mg/kg	75.6	78.0	85.2	75-125	3.13	20	L470846-01	WG490725
Copper	mg/kg	55.6	56.2	91.2	75-125	1.07	20	L470846-01	WG490725
Lead	mg/kg	56.8	58.2	89.6	75-125	2.43	20	L470846-01	WG490725
Nickel	mg/kg	47.4	47.2	94.8	75-125	0.423	20	L470846-01	WG490725
Silver	mg/kg	42.1	42.5	84.2	75-125	0.946	20	L470846-01	WG490725
Zinc	mg/kg	87.6	89.0	87.2	75-125	1.59	20	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	45.8	49.0	76.3	50-150	6.71	25	L470918-01	WG490759
o-Terphenyl				86.72	50-150				WG490759
Acenaphthene	mg/kg	0.121	0.143	72.7	38-121	16.4	23	L470884-07	WG490768
Acenaphthylene	mg/kg	0.126	0.141	75.7	39-120	11.0	22	L470884-07	WG490768

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Est. 1970

August 02, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Anthracene	mg/kg	0.122	0.142	73.0	35-133	15.0	23	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.116	0.142	69.2	35-136	20.8	23	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.101	0.120	60.7	37-131	16.6	22	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.110	0.133	66.0	29-145	18.5	33	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.103	0.123	61.9	10-139	17.4	26	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.101	0.113	60.6	31-140	10.9	34	L470884-07	WG490768
Chrysene	mg/kg	0.111	0.135	66.5	34-137	19.8	23	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.110	0.126	66.1	21-132	13.5	25	L470884-07	WG490768
Fluoranthene	mg/kg	0.125	0.153	75.0	34-132	20.0	24	L470884-07	WG490768
Fluorene	mg/kg	0.122	0.143	72.8	38-126	16.2	23	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.107	0.127	64.2	17-134	17.1	25	L470884-07	WG490768
Naphthalene	mg/kg	0.126	0.143	75.3	24-122	12.8	29	L470884-07	WG490768
Phenanthrene	mg/kg	0.126	0.150	75.5	38-128	17.4	25	L470884-07	WG490768
Pyrene	mg/kg	0.125	0.146	74.6	35-141	15.9	25	L470884-07	WG490768
2-Fluorobiphenyl				76.24	37-123				WG490768
Nitrobenzene-d5				75.33	19-129				WG490768
p-Terphenyl-d14				77.44	34-149				WG490768
Selenium	mg/kg	44.8	46.1	89.6	75-125	2.86	20	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.5	11.0	57.5	50-150	4.44	20	L470865-01	WG490809

Batch number /Run number / Sample number cross reference

WG490674: R1303508: L470860-01  
WG490759: R1304189: L470860-01  
WG490709: R1304390: L470860-01  
WG490725: R1304568: L470860-01  
WG490828: R1305069: L470860-01  
WG490768: R1305288: L470860-01  
WG490832: R1305689: L470860-01  
WG490835: R1305690: L470860-01  
WG490809: R1305968: L470860-01  
WG490804: R1307290: L470860-01

\* \* Calculations are performed prior to rounding of reported values .  
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August 02, 2010

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

## Report Summary

Thursday June 23, 2011

Report Number: L522249

Samples Received: 06/22/11

Client Project:

Description: K04

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

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

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

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REPORT OF ANALYSIS

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

June 23, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-BGSE-062111 14-16IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 09:19

ESC Sample # : L522249-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.1	1.0	mg/kg	6010B	06/22/11	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: 06/23/11 10:39 Printed: 06/23/11 10:39



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# REPORT OF ANALYSIS

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

June 23, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-BGS-062111 12-14IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 09:33

ESC Sample # : L522249-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.0	1.0	mg/kg	6010B	06/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

June 23, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-BGSW-062111 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 09:49

ESC Sample # : L522249-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.9	1.0	mg/kg	6010B	06/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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2717 County Road 215, Suite 100  
Parachute, CO 81635

June 23, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-BGW-062111 10-12IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 10:00

ESC Sample # : L522249-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	7.5	1.0	mg/kg	6010B	06/22/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 06/23/11 10:39 Printed: 06/23/11 10:40



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# REPORT OF ANALYSIS

Chris Hines  
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2717 County Road 215, Suite 100  
Parachute, CO 81635

June 23, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-CUT-062111 12-14IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 10:22

ESC Sample # : L522249-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	1.5	1.0	mg/kg	6010B	06/22/11	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: 06/23/11 10:39 Printed: 06/23/11 10:40

Summary of Remarks For Samples Printed  
06/23/11 at 10:40:01

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L522249-01 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/23/11 10:39  
Sample: L522249-02 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/23/11 10:39  
Sample: L522249-03 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/23/11 10:39  
Sample: L522249-04 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/23/11 10:39  
Sample: L522249-05 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/23/11 10:39



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Level II

L522249

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June 23, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Arsenic	< 1	mg/kg			WG541946	06/22/11 19:29

  

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	1.30	1.50	16.6	20	L522249-05	WG541946

  

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Arsenic	mg/kg	192	188.	97.9	78.6-120.8	WG541946

  

Analyte	Units	Matrix Spike		% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res				
Arsenic	mg/kg	50.9	1.50	50	98.8	75-125	L522249-05 WG541946

  

Analyte	Units	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref %Rec					
Arsenic	mg/kg	48.3	50.9	93.6	75-125	5.24	20	L522249-05 WG541946

Batch number /Run number / Sample number cross reference

WG541946: R1734913: L522249-01 02 03 04 05

\* \* Calculations are performed prior to rounding of reported values.  
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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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Est. 1970

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

## Report Summary

Monday August 02, 2010

Report Number: L470858

Samples Received: 07/28/10

Client Project:

Description: K04 Pit Closure

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 - 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

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  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - N. PIT - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 11:45

ESC Sample # : L470858-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/30/10	1
Chromium, Trivalent	28.	2.0	mg/kg	Calc.	07/30/10	1
ORP	55.		mV	2580	07/30/10	1
pH	8.0		su	9045D	07/29/10	1
Sodium Adsorption Ratio	38.			Calc.	07/28/10	1
Specific Conductance	2700		umhos/cm	9050AMod	07/30/10	1
Mercury	0.29	0.020	mg/kg	7471	07/29/10	1
Arsenic	6.6	1.0	mg/kg	6010B	07/30/10	1
Barium	3000	0.25	mg/kg	6010B	07/30/10	1
Cadmium	0.43	0.25	mg/kg	6010B	07/30/10	1
Chromium	28.	0.50	mg/kg	6010B	07/30/10	1
Copper	17.	1.0	mg/kg	6010B	07/30/10	1
Lead	14.	0.25	mg/kg	6010B	07/30/10	1
Nickel	13.	1.0	mg/kg	6010B	07/30/10	1
Selenium	7.2	1.0	mg/kg	6010B	07/30/10	1
Silver	BDL	0.50	mg/kg	6010B	07/30/10	1
Zinc	41.	1.5	mg/kg	6010B	07/30/10	1
Benzene	0.19	0.050	mg/kg	8021/8015	07/28/10	100
Toluene	BDL	0.50	mg/kg	8021/8015	07/28/10	100
Ethylbenzene	0.060	0.050	mg/kg	8021/8015	07/28/10	100
Total Xylene	0.88	0.15	mg/kg	8021/8015	07/28/10	100
TPH (GC/FID) Low Fraction	83.	10.	mg/kg	GRO	07/28/10	100
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	104.		% Rec.	8021/8015	07/28/10	100
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	07/28/10	100
TPH (GC/FID) High Fraction	8100	200	mg/kg	3546/DRO	07/29/10	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/29/10	50
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L470858-01 (PH) - 8.0@23.0c



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# REPORT OF ANALYSIS

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

August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - N. PIT - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 11:45

ESC Sample # : L470858-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(g,h,i)perylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(k)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Chrysene	BDL	0.66	mg/kg	8270C	07/30/10	20
Dibenz(a,h)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluorene	BDL	0.66	mg/kg	8270C	07/30/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Naphthalene	BDL	0.66	mg/kg	8270C	07/30/10	20
Phenanthrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	07/30/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C	07/30/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C	07/30/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/02/10 10:20 Printed: 08/02/10 10:20  
L470858-01 (PH) - 8.0@23.0c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L470858-01	WG490768	SAMP	Anthracene	R1305288	O
	WG490768	SAMP	Acenaphthene	R1305288	O
	WG490768	SAMP	Acenaphthylene	R1305288	O
	WG490768	SAMP	Benzo(a)anthracene	R1305288	O
	WG490768	SAMP	Benzo(a)pyrene	R1305288	O
	WG490768	SAMP	Benzo(b)fluoranthene	R1305288	O
	WG490768	SAMP	Benzo(g,h,i)perylene	R1305288	O
	WG490768	SAMP	Benzo(k)fluoranthene	R1305288	O
	WG490768	SAMP	Chrysene	R1305288	O
	WG490768	SAMP	Dibenz(a,h)anthracene	R1305288	O
	WG490768	SAMP	Fluoranthene	R1305288	O
	WG490768	SAMP	Fluorene	R1305288	O
	WG490768	SAMP	Indeno(1,2,3-cd)pyrene	R1305288	O
	WG490768	SAMP	Naphthalene	R1305288	O
	WG490768	SAMP	Phenanthrene	R1305288	O
	WG490768	SAMP	Pyrene	R1305288	O
	WG490768	SAMP	Nitrobenzene-d5	R1305288	J7
	WG490768	SAMP	2-Fluorobiphenyl	R1305288	J7
	WG490768	SAMP	p-Terphenyl-d14	R1305288	J7
	WG490759	SAMP	o-Terphenyl	R1304189	J7



Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
0	(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.

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  
08/02/10 at 10:20:30

TSR Signing Reports: 358  
R3 - Rush: Two Day

Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L470858-01 Account: ENCANACO Received: 07/28/10 09:00 Due Date: 07/30/10 00:00 RPT Date: 08/02/10 10:20



**YOUR LAB OF CHOICE**

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Quality Assurance Report  
Level II

L470858

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August 02, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Ethylbenzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Toluene	< .005	mg/kg			WG490674	07/28/10 15:57
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG490674	07/28/10 15:57
Total Xylene	< .0015	mg/kg			WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	103.4	59-128	WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG490674	07/28/10 15:57
TPH (GC/FID) High Fraction	< 4	ppm			WG490759	07/29/10 09:31
o-Terphenyl		% Rec.	87.45	50-150	WG490759	07/29/10 09:31
Mercury	< .02	mg/kg			WG490709	07/29/10 09:36
Arsenic	< 1	mg/kg			WG490725	07/29/10 10:33
Barium	< .25	mg/kg			WG490725	07/29/10 10:33
Cadmium	< .25	mg/kg			WG490725	07/29/10 10:33
Chromium	< .5	mg/kg			WG490725	07/29/10 10:33
Lead	< .25	mg/kg			WG490725	07/29/10 10:33
Nickel	< 1	mg/kg			WG490725	07/29/10 10:33
Selenium	< 1	mg/kg			WG490725	07/29/10 10:33
Zinc	< 1.5	mg/kg			WG490725	07/29/10 10:33
Copper	< 1	mg/kg			WG490725	07/29/10 15:55
pH	4.20	su			WG490828	07/29/10 17:20
Acenaphthene	< .033	mg/kg			WG490768	07/29/10 17:49
Acenaphthylene	< .033	mg/kg			WG490768	07/29/10 17:49
Anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(b)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(g,h,i)perylene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(k)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Chrysene	< .033	mg/kg			WG490768	07/29/10 17:49
Dibenz(a,h)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluorene	< .033	mg/kg			WG490768	07/29/10 17:49
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Naphthalene	< .033	mg/kg			WG490768	07/29/10 17:49
Phenanthrene	< .033	mg/kg			WG490768	07/29/10 17:49
Pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
2-Fluorobiphenyl		% Rec.	79.30	37-123	WG490768	07/29/10 17:49
Nitrobenzene-d5		% Rec.	79.08	19-129	WG490768	07/29/10 17:49
p-Terphenyl-d14		% Rec.	94.43	34-149	WG490768	07/29/10 17:49
Silver	< .5	mg/kg			WG490725	07/30/10 10:12
Specific Conductance	1.90	umhos/cm			WG490835	07/30/10 14:00
Chromium,Hexavalent	< 2	mg/kg			WG490809	07/30/10 16:46

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



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August 02, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Silver	< .5	mg/kg			WG490725	07/29/10 21:32

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0	0	20	L470507-01	WG490709
Arsenic	mg/kg	7.20	6.90	4.67	20	L470846-01	WG490725
Barium	mg/kg	210.	200.	2.96	20	L470846-01	WG490725
Cadmium	mg/kg	0.340	0.320	5.47	20	L470846-01	WG490725
Chromium	mg/kg	34.0	33.0	4.44	20	L470846-01	WG490725
Copper	mg/kg	11.0	10.0	5.83	20	L470846-01	WG490725
Lead	mg/kg	13.0	12.0	6.45	20	L470846-01	WG490725
Nickel	mg/kg	0	0	0	20	L470846-01	WG490725
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
Silver	mg/kg	0	0	0	20	L470846-01	WG490725
Zinc	mg/kg	47.0	44.0	6.38	20	L470846-01	WG490725
pH	su	7.70	7.90	2.56*	1	L470791-01	WG490828
pH	su	7.00	7.10	1.42*	1	L470964-01	WG490828
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
ORP	mV	0	0	0	20	L470864-01	WG490832
ORP	mV	7.00	8.00	13.3	20	L470868-01	WG490832
Specific Conductance	umhos/cm	37.0	36.0	3.55	20	L470864-01	WG490835
Specific Conductance	umhos/cm	6600	6600	0.454	20	L470868-01	WG490835
Chromium,Hexavalent	mg/kg	57.0	57.0	0	20	L470330-14	WG490809
Chromium,Hexavalent	mg/kg	0	0	0	20	L470864-01	WG490809

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0560	112.	76-113	WG490674
Ethylbenzene	mg/kg	.05	0.0571	114.	78-115	WG490674
Toluene	mg/kg	.05	0.0561	112.	76-114	WG490674
Total Xylene	mg/kg	.15	0.165	110.	81-118	WG490674
a,a,a-Trifluorotoluene(PID)				106.3	54-144	WG490674
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.42	117.	67-135	WG490674
a,a,a-Trifluorotoluene(FID)				109.1	59-128	WG490674
TPH (GC/FID) High Fraction	ppm	60	46.2	77.0	50-150	WG490759
o-Terphenyl				89.54	50-150	WG490759
Mercury	mg/kg	8.77	9.77	111.	71.6-127.7	WG490709
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG490725

\* 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	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Barium	mg/kg	420	385.	91.7	78.8-121.4	WG490725
Cadmium	mg/kg	70.1	64.0	91.3	78.5-121.5	WG490725
Chromium	mg/kg	168	156.	92.9	80.4-120.2	WG490725
Copper	mg/kg	122	121.	99.2	81.6-119.7	WG490725
Lead	mg/kg	113	106.	93.8	77.3-122.1	WG490725
Nickel	mg/kg	74.1	64.9	87.6	78.8-121.2	WG490725
Selenium	mg/kg	176	155.	88.1	75.6-125.0	WG490725
Silver	mg/kg	115	105.	91.3	66-133.9	WG490725
Zinc	mg/kg	437	409.	93.6	78.5-121.7	WG490725
pH	su	9.36	9.30	99.4	98.9-102.0	WG490828
Acenaphthene	mg/kg	.167	0.141	84.6	44-117	WG490768
Acenaphthylene	mg/kg	.167	0.138	82.4	43-118	WG490768
Anthracene	mg/kg	.167	0.140	83.9	42-127	WG490768
Benzo(a)anthracene	mg/kg	.167	0.146	87.6	45-127	WG490768
Benzo(a)pyrene	mg/kg	.167	0.140	83.7	46-123	WG490768
Benzo(b)fluoranthene	mg/kg	.167	0.146	87.4	43-126	WG490768
Benzo(g,h,i)perylene	mg/kg	.167	0.159	95.0	43-128	WG490768
Benzo(k)fluoranthene	mg/kg	.167	0.139	83.1	40-126	WG490768
Chrysene	mg/kg	.167	0.146	87.4	44-129	WG490768
Dibenz(a,h)anthracene	mg/kg	.167	0.159	95.3	43-127	WG490768
Fluoranthene	mg/kg	.167	0.146	87.6	44-125	WG490768
Fluorene	mg/kg	.167	0.138	82.4	45-121	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.160	95.9	43-127	WG490768
Naphthalene	mg/kg	.167	0.133	79.5	32-113	WG490768
Phenanthrene	mg/kg	.167	0.144	86.2	43-124	WG490768
Pyrene	mg/kg	.167	0.147	88.2	47-128	WG490768
2-Fluorobiphenyl				87.72	37-123	WG490768
Nitrobenzene-d5				81.69	19-129	WG490768
p-Terphenyl-d14				102.5	34-149	WG490768
ORP	mV	229	220.	96.1	95.6-104.37	WG490832
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG490835
Chromium,Hexavalent	mg/kg	100	93.3	93.3	50-143	WG490809

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0547	0.0560	109.	76-113	2.36	20	WG490674
Ethylbenzene	mg/kg	0.0570	0.0571	114.	78-115	0.110	20	WG490674
Toluene	mg/kg	0.0552	0.0561	110.	76-114	1.47	20	WG490674
Total Xylene	mg/kg	0.165	0.165	110.	81-118	0.170	20	WG490674
a,a,a-Trifluorotoluene(PID)				106.2	54-144			WG490674
TPH (GC/FID) Low Fraction	mg/kg	6.05	6.42	110.	67-135	5.83	20	WG490674
a,a,a-Trifluorotoluene(FID)				106.8	59-128			WG490674
TPH (GC/FID) High Fraction	ppm	46.3	46.2	77.0	50-150	0.188	25	WG490759
o-Terphenyl				87.23	50-150			WG490759

\* 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  
2717 County Road 215, Suite 100  
Parachute, CO 81635

Quality Assurance Report  
Level II

L470858

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

Tax I.D. 62-0814289

Est. 1970

August 02, 2010

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG490828
Acenaphthene	mg/kg	0.138	0.141	82.0	44-117	2.41	21	WG490768
Acenaphthylene	mg/kg	0.143	0.138	85.0	43-118	3.46	20	WG490768
Anthracene	mg/kg	0.147	0.140	88.0	42-127	4.67	21	WG490768
Benzo(a)anthracene	mg/kg	0.153	0.146	91.0	45-127	4.29	21	WG490768
Benzo(a)pyrene	mg/kg	0.149	0.140	89.0	46-123	6.34	20	WG490768
Benzo(b)fluoranthene	mg/kg	0.149	0.146	89.0	43-126	1.91	27	WG490768
Benzo(g,h,i)perylene	mg/kg	0.165	0.159	99.0	43-128	3.95	20	WG490768
Benzo(k)fluoranthene	mg/kg	0.152	0.139	91.0	40-126	8.83	32	WG490768
Chrysene	mg/kg	0.152	0.146	91.0	44-129	3.89	22	WG490768
Dibenz(a,h)anthracene	mg/kg	0.167	0.159	100.	43-127	5.05	20	WG490768
Fluoranthene	mg/kg	0.152	0.146	91.0	44-125	4.03	22	WG490768
Fluorene	mg/kg	0.144	0.138	86.0	45-121	4.45	20	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.169	0.160	101.	43-127	5.17	21	WG490768
Naphthalene	mg/kg	0.136	0.133	82.0	32-113	2.67	26	WG490768
Phenanthrene	mg/kg	0.144	0.144	86.0	43-124	0.117	21	WG490768
Pyrene	mg/kg	0.160	0.147	96.0	47-128	8.57	20	WG490768
2-Fluorobiphenyl				82.77	37-123			WG490768
Nitrobenzene-d5				80.64	19-129			WG490768
p-Terphenyl-d14				101.8	34-149			WG490768
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG490832
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG490835
Chromium,Hexavalent	mg/kg	96.6	93.3	97.0	50-143	3.48	20	WG490809

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.239	0	.05	95.7	32-137	L470846-01	WG490674
Ethylbenzene	mg/kg	0.216	0	.05	86.2	10-150	L470846-01	WG490674
Toluene	mg/kg	0.225	0	.05	90.1	20-142	L470846-01	WG490674
Total Xylene	mg/kg	0.627	0	.15	83.6	16-141	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)					104.1	54-144		WG490674
TPH (GC/FID) Low Fraction	mg/kg	23.0	0	5.5	83.7	55-109	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)					111.9	59-128		WG490674
Mercury	mg/kg	0.222	0	.25	88.8	70-130	L470507-01	WG490709
Arsenic	mg/kg	52.1	6.90	50	90.4	75-125	L470846-01	WG490725
Barium	mg/kg	251.	200.	50	102.	75-125	L470846-01	WG490725
Cadmium	mg/kg	43.8	0.320	50	87.0	75-125	L470846-01	WG490725
Chromium	mg/kg	78.0	33.0	50	90.0	75-125	L470846-01	WG490725
Copper	mg/kg	56.2	10.0	50	92.4	75-125	L470846-01	WG490725
Lead	mg/kg	58.2	12.0	50	92.4	75-125	L470846-01	WG490725
Nickel	mg/kg	47.2	0	50	94.4	75-125	L470846-01	WG490725
Silver	mg/kg	42.5	0	50	85.0	75-125	L470846-01	WG490725
Zinc	mg/kg	89.0	44.0	50	90.0	75-125	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	49.0	0	60	81.6	50-150	L470918-01	WG490759

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

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref	Res				
o-Terphenyl					91.41	50-150		
Acenaphthene	mg/kg	0.143	0	.167	85.7	38-121	L470884-07	WG490768
Acenaphthylene	mg/kg	0.141	0	.167	84.6	39-120	L470884-07	WG490768
Anthracene	mg/kg	0.142	0	.167	84.9	35-133	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.142	0	.167	85.3	35-136	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.120	0	.167	71.7	37-131	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.5	29-145	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.123	0	.167	73.7	10-139	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.113	0	.167	67.6	31-140	L470884-07	WG490768
Chrysene	mg/kg	0.135	0	.167	81.1	34-137	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.126	0	.167	75.7	21-132	L470884-07	WG490768
Fluoranthene	mg/kg	0.153	0	.167	91.7	34-132	L470884-07	WG490768
Fluorene	mg/kg	0.143	0	.167	85.7	38-126	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.127	0	.167	76.2	17-134	L470884-07	WG490768
Naphthalene	mg/kg	0.143	0	.167	85.6	24-122	L470884-07	WG490768
Phenanthrene	mg/kg	0.150	0	.167	89.8	38-128	L470884-07	WG490768
Pyrene	mg/kg	0.146	0	.167	87.5	35-141	L470884-07	WG490768
2-Fluorobiphenyl					87.38	37-123		WG490768
Nitrobenzene-d5					85.39	19-129		WG490768
p-Terphenyl-d14					91.52	34-149		WG490768
Selenium	mg/kg	46.1	0	10	92.2	75-125	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.0	0	20	55.0	50-150	L470865-01	WG490809

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.255	0.239	102.	32-137	6.22	39	L470846-01	WG490674
Ethylbenzene	mg/kg	0.227	0.216	90.8	10-150	5.15	44	L470846-01	WG490674
Toluene	mg/kg	0.240	0.225	95.8	20-142	6.14	42	L470846-01	WG490674
Total Xylene	mg/kg	0.651	0.627	86.8	16-141	3.74	46	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)				105.2	54-144				WG490674
TPH (GC/FID) Low Fraction	mg/kg	17.4	23.0	63.2	55-109	28.0*	20	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG490674
Mercury	mg/kg	0.240	0.222	96.0	70-130	7.79	20	L470507-01	WG490709
Arsenic	mg/kg	51.1	52.1	88.4	75-125	1.94	20	L470846-01	WG490725
Barium	mg/kg	256.	251.	112.	75-125	1.97	20	L470846-01	WG490725
Cadmium	mg/kg	43.0	43.8	85.4	75-125	1.84	20	L470846-01	WG490725
Chromium	mg/kg	75.6	78.0	85.2	75-125	3.13	20	L470846-01	WG490725
Copper	mg/kg	55.6	56.2	91.2	75-125	1.07	20	L470846-01	WG490725
Lead	mg/kg	56.8	58.2	89.6	75-125	2.43	20	L470846-01	WG490725
Nickel	mg/kg	47.4	47.2	94.8	75-125	0.423	20	L470846-01	WG490725
Silver	mg/kg	42.1	42.5	84.2	75-125	0.946	20	L470846-01	WG490725
Zinc	mg/kg	87.6	89.0	87.2	75-125	1.59	20	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	45.8	49.0	76.3	50-150	6.71	25	L470918-01	WG490759
o-Terphenyl				86.72	50-150				WG490759
Acenaphthene	mg/kg	0.121	0.143	72.7	38-121	16.4	23	L470884-07	WG490768
Acenaphthylene	mg/kg	0.126	0.141	75.7	39-120	11.0	22	L470884-07	WG490768

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August 02, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Anthracene	mg/kg	0.122	0.142	73.0	35-133	15.0	23	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.116	0.142	69.2	35-136	20.8	23	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.101	0.120	60.7	37-131	16.6	22	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.110	0.133	66.0	29-145	18.5	33	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.103	0.123	61.9	10-139	17.4	26	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.101	0.113	60.6	31-140	10.9	34	L470884-07	WG490768
Chrysene	mg/kg	0.111	0.135	66.5	34-137	19.8	23	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.110	0.126	66.1	21-132	13.5	25	L470884-07	WG490768
Fluoranthene	mg/kg	0.125	0.153	75.0	34-132	20.0	24	L470884-07	WG490768
Fluorene	mg/kg	0.122	0.143	72.8	38-126	16.2	23	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.107	0.127	64.2	17-134	17.1	25	L470884-07	WG490768
Naphthalene	mg/kg	0.126	0.143	75.3	24-122	12.8	29	L470884-07	WG490768
Phenanthrene	mg/kg	0.126	0.150	75.5	38-128	17.4	25	L470884-07	WG490768
Pyrene	mg/kg	0.125	0.146	74.6	35-141	15.9	25	L470884-07	WG490768
2-Fluorobiphenyl				76.24	37-123				WG490768
Nitrobenzene-d5				75.33	19-129				WG490768
p-Terphenyl-d14				77.44	34-149				WG490768
Selenium	mg/kg	44.8	46.1	89.6	75-125	2.86	20	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.5	11.0	57.5	50-150	4.44	20	L470865-01	WG490809

Batch number /Run number / Sample number cross reference

WG490674: R1303508: L470858-01  
WG490759: R1304189: L470858-01  
WG490709: R1304390: L470858-01  
WG490725: R1304568: L470858-01  
WG490828: R1305069: L470858-01  
WG490768: R1305288: L470858-01  
WG490832: R1305689: L470858-01  
WG490835: R1305690: L470858-01  
WG490809: R1305968: L470858-01  
WG490804: R1307290: L470858-01

\* \* Calculations are performed prior to rounding of reported values .  
\* Performance of this Analyte is outside of established criteria.  
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

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

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

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



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

### Report Summary

Monday August 02, 2010

Report Number: L470859

Samples Received: 07/28/10

Client Project:

Description: K04 Pit Closure

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 - 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

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

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REPORT OF ANALYSIS

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

August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - S. PIT - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 12:00

ESC Sample # : L470859-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/30/10	1
Chromium, Trivalent	25.	2.0	mg/kg	Calc.	07/30/10	1
ORP	39.		mV	2580	07/30/10	1
pH	8.3		su	9045D	07/29/10	1
Sodium Adsorption Ratio	35.			Calc.	07/28/10	1
Specific Conductance	2700		umhos/cm	9050AMod	07/30/10	1
Mercury	0.034	0.020	mg/kg	7471	07/29/10	1
Arsenic	6.2	1.0	mg/kg	6010B	07/30/10	1
Barium	3800	0.25	mg/kg	6010B	07/30/10	1
Cadmium	0.54	0.25	mg/kg	6010B	07/30/10	1
Chromium	25.	0.50	mg/kg	6010B	07/30/10	1
Copper	17.	1.0	mg/kg	6010B	07/30/10	1
Lead	14.	0.25	mg/kg	6010B	07/30/10	1
Nickel	14.	1.0	mg/kg	6010B	07/30/10	1
Selenium	7.6	1.0	mg/kg	6010B	07/30/10	1
Silver	BDL	0.50	mg/kg	6010B	07/30/10	1
Zinc	46.	1.5	mg/kg	6010B	07/30/10	1
Benzene	0.053	0.025	mg/kg	8021/8015	07/28/10	50
Toluene	BDL	0.25	mg/kg	8021/8015	07/28/10	50
Ethylbenzene	0.044	0.025	mg/kg	8021/8015	07/28/10	50
Total Xylene	0.40	0.075	mg/kg	8021/8015	07/28/10	50
TPH (GC/FID) Low Fraction	31.	5.0	mg/kg	GRO	07/28/10	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	104.		% Rec.	8021/8015	07/28/10	50
a,a,a-Trifluorotoluene(PID)	111.		% Rec.	8021/8015	07/28/10	50
TPH (GC/FID) High Fraction	7800	200	mg/kg	3546/DRO	07/29/10	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/29/10	50
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Acenaphthylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(a)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L470859-01 (PH) - 8.3@22.5c



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August 02, 2010

Date Received : July 28, 2010  
Description : K04 Pit Closure  
Sample ID : K04 - S. PIT - 072610  
Collected By : Blair Rollins  
Collection Date : 07/26/10 12:00

ESC Sample # : L470859-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(g,h,i)perylene	BDL	0.66	mg/kg	8270C	07/30/10	20
Benzo(k)fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Chrysene	BDL	0.66	mg/kg	8270C	07/30/10	20
Dibenz(a,h)anthracene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluoranthene	BDL	0.66	mg/kg	8270C	07/30/10	20
Fluorene	BDL	0.66	mg/kg	8270C	07/30/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Naphthalene	BDL	0.66	mg/kg	8270C	07/30/10	20
Phenanthrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Pyrene	BDL	0.66	mg/kg	8270C	07/30/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	07/30/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C	07/30/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C	07/30/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/02/10 10:20 Printed: 08/02/10 10:20  
L470859-01 (PH) - 8.3@22.5c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L470859-01	WG490768	SAMP	Anthracene	R1305288	O
	WG490768	SAMP	Acenaphthene	R1305288	O
	WG490768	SAMP	Acenaphthylene	R1305288	O
	WG490768	SAMP	Benzo(a)anthracene	R1305288	O
	WG490768	SAMP	Benzo(a)pyrene	R1305288	O
	WG490768	SAMP	Benzo(b)fluoranthene	R1305288	O
	WG490768	SAMP	Benzo(g,h,i)perylene	R1305288	O
	WG490768	SAMP	Benzo(k)fluoranthene	R1305288	O
	WG490768	SAMP	Chrysene	R1305288	O
	WG490768	SAMP	Dibenz(a,h)anthracene	R1305288	O
	WG490768	SAMP	Fluoranthene	R1305288	O
	WG490768	SAMP	Fluorene	R1305288	O
	WG490768	SAMP	Indeno(1,2,3-cd)pyrene	R1305288	O
	WG490768	SAMP	Naphthalene	R1305288	O
	WG490768	SAMP	Phenanthrene	R1305288	O
	WG490768	SAMP	Pyrene	R1305288	O
	WG490768	SAMP	Nitrobenzene-d5	R1305288	J7
	WG490768	SAMP	2-Fluorobiphenyl	R1305288	J7
	WG490768	SAMP	p-Terphenyl-d14	R1305288	J7
	WG490759	SAMP	o-Terphenyl	R1304189	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
0	(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.

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  
08/02/10 at 10:20:31

TSR Signing Reports: 358  
R3 - Rush: Two Day

Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L470859-01 Account: ENCANACO Received: 07/28/10 09:00 Due Date: 07/30/10 00:00 RPT Date: 08/02/10 10:20



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Level II

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 02, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Ethylbenzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Toluene	< .005	mg/kg			WG490674	07/28/10 15:57
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG490674	07/28/10 15:57
Total Xylene	< .0015	mg/kg			WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	103.4	59-128	WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG490674	07/28/10 15:57
TPH (GC/FID) High Fraction	< 4	ppm			WG490759	07/29/10 09:31
o-Terphenyl		% Rec.	87.45	50-150	WG490759	07/29/10 09:31
Mercury	< .02	mg/kg			WG490709	07/29/10 09:36
Arsenic	< 1	mg/kg			WG490725	07/29/10 10:33
Barium	< .25	mg/kg			WG490725	07/29/10 10:33
Cadmium	< .25	mg/kg			WG490725	07/29/10 10:33
Chromium	< .5	mg/kg			WG490725	07/29/10 10:33
Lead	< .25	mg/kg			WG490725	07/29/10 10:33
Nickel	< 1	mg/kg			WG490725	07/29/10 10:33
Selenium	< 1	mg/kg			WG490725	07/29/10 10:33
Zinc	< 1.5	mg/kg			WG490725	07/29/10 10:33
Copper	< 1	mg/kg			WG490725	07/29/10 15:55
pH	4.20	su			WG490828	07/29/10 17:20
Acenaphthene	< .033	mg/kg			WG490768	07/29/10 17:49
Acenaphthylene	< .033	mg/kg			WG490768	07/29/10 17:49
Anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(b)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(g,h,i)perylene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(k)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Chrysene	< .033	mg/kg			WG490768	07/29/10 17:49
Dibenz(a,h)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluorene	< .033	mg/kg			WG490768	07/29/10 17:49
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Naphthalene	< .033	mg/kg			WG490768	07/29/10 17:49
Phenanthrene	< .033	mg/kg			WG490768	07/29/10 17:49
Pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
2-Fluorobiphenyl		% Rec.	79.30	37-123	WG490768	07/29/10 17:49
Nitrobenzene-d5		% Rec.	79.08	19-129	WG490768	07/29/10 17:49
p-Terphenyl-d14		% Rec.	94.43	34-149	WG490768	07/29/10 17:49
Silver	< .5	mg/kg			WG490725	07/30/10 10:12
Specific Conductance	1.90	umhos/cm			WG490835	07/30/10 14:00
Chromium,Hexavalent	< 2	mg/kg			WG490809	07/30/10 16:46

\* 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			
Silver	< .5	mg/kg			WG490725	07/29/10 21:32

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0	0	20	L470507-01	WG490709
Arsenic	mg/kg	7.20	6.90	4.67	20	L470846-01	WG490725
Barium	mg/kg	210.	200.	2.96	20	L470846-01	WG490725
Cadmium	mg/kg	0.340	0.320	5.47	20	L470846-01	WG490725
Chromium	mg/kg	34.0	33.0	4.44	20	L470846-01	WG490725
Copper	mg/kg	11.0	10.0	5.83	20	L470846-01	WG490725
Lead	mg/kg	13.0	12.0	6.45	20	L470846-01	WG490725
Nickel	mg/kg	0	0	0	20	L470846-01	WG490725
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
Silver	mg/kg	0	0	0	20	L470846-01	WG490725
Zinc	mg/kg	47.0	44.0	6.38	20	L470846-01	WG490725
pH	su	7.70	7.90	2.56*	1	L470791-01	WG490828
pH	su	7.00	7.10	1.42*	1	L470964-01	WG490828
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
ORP	mV	0	0	0	20	L470864-01	WG490832
ORP	mV	7.00	8.00	13.3	20	L470868-01	WG490832
Specific Conductance	umhos/cm	37.0	36.0	3.55	20	L470864-01	WG490835
Specific Conductance	umhos/cm	6600	6600	0.454	20	L470868-01	WG490835
Chromium,Hexavalent	mg/kg	57.0	57.0	0	20	L470330-14	WG490809
Chromium,Hexavalent	mg/kg	0	0	0	20	L470864-01	WG490809

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0560	112.	76-113	WG490674
Ethylbenzene	mg/kg	.05	0.0571	114.	78-115	WG490674
Toluene	mg/kg	.05	0.0561	112.	76-114	WG490674
Total Xylene	mg/kg	.15	0.165	110.	81-118	WG490674
a,a,a-Trifluorotoluene(PID)				106.3	54-144	WG490674
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.42	117.	67-135	WG490674
a,a,a-Trifluorotoluene(FID)				109.1	59-128	WG490674
TPH (GC/FID) High Fraction	ppm	60	46.2	77.0	50-150	WG490759
o-Terphenyl				89.54	50-150	WG490759
Mercury	mg/kg	8.77	9.77	111.	71.6-127.7	WG490709
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG490725

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Barium	mg/kg	420	385.	91.7	78.8-121.4	WG490725
Cadmium	mg/kg	70.1	64.0	91.3	78.5-121.5	WG490725
Chromium	mg/kg	168	156.	92.9	80.4-120.2	WG490725
Copper	mg/kg	122	121.	99.2	81.6-119.7	WG490725
Lead	mg/kg	113	106.	93.8	77.3-122.1	WG490725
Nickel	mg/kg	74.1	64.9	87.6	78.8-121.2	WG490725
Selenium	mg/kg	176	155.	88.1	75.6-125.0	WG490725
Silver	mg/kg	115	105.	91.3	66-133.9	WG490725
Zinc	mg/kg	437	409.	93.6	78.5-121.7	WG490725
pH	su	9.36	9.30	99.4	98.9-102.0	WG490828
Acenaphthene	mg/kg	.167	0.141	84.6	44-117	WG490768
Acenaphthylene	mg/kg	.167	0.138	82.4	43-118	WG490768
Anthracene	mg/kg	.167	0.140	83.9	42-127	WG490768
Benzo(a)anthracene	mg/kg	.167	0.146	87.6	45-127	WG490768
Benzo(a)pyrene	mg/kg	.167	0.140	83.7	46-123	WG490768
Benzo(b)fluoranthene	mg/kg	.167	0.146	87.4	43-126	WG490768
Benzo(g,h,i)perylene	mg/kg	.167	0.159	95.0	43-128	WG490768
Benzo(k)fluoranthene	mg/kg	.167	0.139	83.1	40-126	WG490768
Chrysene	mg/kg	.167	0.146	87.4	44-129	WG490768
Dibenz(a,h)anthracene	mg/kg	.167	0.159	95.3	43-127	WG490768
Fluoranthene	mg/kg	.167	0.146	87.6	44-125	WG490768
Fluorene	mg/kg	.167	0.138	82.4	45-121	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.160	95.9	43-127	WG490768
Naphthalene	mg/kg	.167	0.133	79.5	32-113	WG490768
Phenanthrene	mg/kg	.167	0.144	86.2	43-124	WG490768
Pyrene	mg/kg	.167	0.147	88.2	47-128	WG490768
2-Fluorobiphenyl				87.72	37-123	WG490768
Nitrobenzene-d5				81.69	19-129	WG490768
p-Terphenyl-d14				102.5	34-149	WG490768
ORP	mV	229	220.	96.1	95.6-104.37	WG490832
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG490835
Chromium,Hexavalent	mg/kg	100	93.3	93.3	50-143	WG490809

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0547	0.0560	109.	76-113	2.36	20	WG490674
Ethylbenzene	mg/kg	0.0570	0.0571	114.	78-115	0.110	20	WG490674
Toluene	mg/kg	0.0552	0.0561	110.	76-114	1.47	20	WG490674
Total Xylene	mg/kg	0.165	0.165	110.	81-118	0.170	20	WG490674
a,a,a-Trifluorotoluene(PID)				106.2	54-144			WG490674
TPH (GC/FID) Low Fraction	mg/kg	6.05	6.42	110.	67-135	5.83	20	WG490674
a,a,a-Trifluorotoluene(FID)				106.8	59-128			WG490674
TPH (GC/FID) High Fraction	ppm	46.3	46.2	77.0	50-150	0.188	25	WG490759
o-Terphenyl				87.23	50-150			WG490759

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG490828
Acenaphthene	mg/kg	0.138	0.141	82.0	44-117	2.41	21	WG490768
Acenaphthylene	mg/kg	0.143	0.138	85.0	43-118	3.46	20	WG490768
Anthracene	mg/kg	0.147	0.140	88.0	42-127	4.67	21	WG490768
Benzo(a)anthracene	mg/kg	0.153	0.146	91.0	45-127	4.29	21	WG490768
Benzo(a)pyrene	mg/kg	0.149	0.140	89.0	46-123	6.34	20	WG490768
Benzo(b)fluoranthene	mg/kg	0.149	0.146	89.0	43-126	1.91	27	WG490768
Benzo(g,h,i)perylene	mg/kg	0.165	0.159	99.0	43-128	3.95	20	WG490768
Benzo(k)fluoranthene	mg/kg	0.152	0.139	91.0	40-126	8.83	32	WG490768
Chrysene	mg/kg	0.152	0.146	91.0	44-129	3.89	22	WG490768
Dibenz(a,h)anthracene	mg/kg	0.167	0.159	100.	43-127	5.05	20	WG490768
Fluoranthene	mg/kg	0.152	0.146	91.0	44-125	4.03	22	WG490768
Fluorene	mg/kg	0.144	0.138	86.0	45-121	4.45	20	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.169	0.160	101.	43-127	5.17	21	WG490768
Naphthalene	mg/kg	0.136	0.133	82.0	32-113	2.67	26	WG490768
Phenanthrene	mg/kg	0.144	0.144	86.0	43-124	0.117	21	WG490768
Pyrene	mg/kg	0.160	0.147	96.0	47-128	8.57	20	WG490768
2-Fluorobiphenyl				82.77	37-123			WG490768
Nitrobenzene-d5				80.64	19-129			WG490768
p-Terphenyl-d14				101.8	34-149			WG490768
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG490832
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG490835
Chromium,Hexavalent	mg/kg	96.6	93.3	97.0	50-143	3.48	20	WG490809

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.239	0	.05	95.7	32-137	L470846-01	WG490674
Ethylbenzene	mg/kg	0.216	0	.05	86.2	10-150	L470846-01	WG490674
Toluene	mg/kg	0.225	0	.05	90.1	20-142	L470846-01	WG490674
Total Xylene	mg/kg	0.627	0	.15	83.6	16-141	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)					104.1	54-144		WG490674
TPH (GC/FID) Low Fraction	mg/kg	23.0	0	5.5	83.7	55-109	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)					111.9	59-128		WG490674
Mercury	mg/kg	0.222	0	.25	88.8	70-130	L470507-01	WG490709
Arsenic	mg/kg	52.1	6.90	50	90.4	75-125	L470846-01	WG490725
Barium	mg/kg	251.	200.	50	102.	75-125	L470846-01	WG490725
Cadmium	mg/kg	43.8	0.320	50	87.0	75-125	L470846-01	WG490725
Chromium	mg/kg	78.0	33.0	50	90.0	75-125	L470846-01	WG490725
Copper	mg/kg	56.2	10.0	50	92.4	75-125	L470846-01	WG490725
Lead	mg/kg	58.2	12.0	50	92.4	75-125	L470846-01	WG490725
Nickel	mg/kg	47.2	0	50	94.4	75-125	L470846-01	WG490725
Silver	mg/kg	42.5	0	50	85.0	75-125	L470846-01	WG490725
Zinc	mg/kg	89.0	44.0	50	90.0	75-125	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	49.0	0	60	81.6	50-150	L470918-01	WG490759

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

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref	TV				
o-Terphenyl					91.41	50-150		
Acenaphthene	mg/kg	0.143	0	.167	85.7	38-121	L470884-07	WG490768
Acenaphthylene	mg/kg	0.141	0	.167	84.6	39-120	L470884-07	WG490768
Anthracene	mg/kg	0.142	0	.167	84.9	35-133	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.142	0	.167	85.3	35-136	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.120	0	.167	71.7	37-131	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.5	29-145	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.123	0	.167	73.7	10-139	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.113	0	.167	67.6	31-140	L470884-07	WG490768
Chrysene	mg/kg	0.135	0	.167	81.1	34-137	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.126	0	.167	75.7	21-132	L470884-07	WG490768
Fluoranthene	mg/kg	0.153	0	.167	91.7	34-132	L470884-07	WG490768
Fluorene	mg/kg	0.143	0	.167	85.7	38-126	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.127	0	.167	76.2	17-134	L470884-07	WG490768
Naphthalene	mg/kg	0.143	0	.167	85.6	24-122	L470884-07	WG490768
Phenanthrene	mg/kg	0.150	0	.167	89.8	38-128	L470884-07	WG490768
Pyrene	mg/kg	0.146	0	.167	87.5	35-141	L470884-07	WG490768
2-Fluorobiphenyl					87.38	37-123		WG490768
Nitrobenzene-d5					85.39	19-129		WG490768
p-Terphenyl-d14					91.52	34-149		WG490768
Selenium	mg/kg	46.1	0	10	92.2	75-125	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.0	0	20	55.0	50-150	L470865-01	WG490809

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.255	0.239	102.	32-137	6.22	39	L470846-01	WG490674
Ethylbenzene	mg/kg	0.227	0.216	90.8	10-150	5.15	44	L470846-01	WG490674
Toluene	mg/kg	0.240	0.225	95.8	20-142	6.14	42	L470846-01	WG490674
Total Xylene	mg/kg	0.651	0.627	86.8	16-141	3.74	46	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)				105.2	54-144				WG490674
TPH (GC/FID) Low Fraction	mg/kg	17.4	23.0	63.2	55-109	28.0*	20	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG490674
Mercury	mg/kg	0.240	0.222	96.0	70-130	7.79	20	L470507-01	WG490709
Arsenic	mg/kg	51.1	52.1	88.4	75-125	1.94	20	L470846-01	WG490725
Barium	mg/kg	256.	251.	112.	75-125	1.97	20	L470846-01	WG490725
Cadmium	mg/kg	43.0	43.8	85.4	75-125	1.84	20	L470846-01	WG490725
Chromium	mg/kg	75.6	78.0	85.2	75-125	3.13	20	L470846-01	WG490725
Copper	mg/kg	55.6	56.2	91.2	75-125	1.07	20	L470846-01	WG490725
Lead	mg/kg	56.8	58.2	89.6	75-125	2.43	20	L470846-01	WG490725
Nickel	mg/kg	47.4	47.2	94.8	75-125	0.423	20	L470846-01	WG490725
Silver	mg/kg	42.1	42.5	84.2	75-125	0.946	20	L470846-01	WG490725
Zinc	mg/kg	87.6	89.0	87.2	75-125	1.59	20	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	45.8	49.0	76.3	50-150	6.71	25	L470918-01	WG490759
o-Terphenyl				86.72	50-150				WG490759
Acenaphthene	mg/kg	0.121	0.143	72.7	38-121	16.4	23	L470884-07	WG490768
Acenaphthylene	mg/kg	0.126	0.141	75.7	39-120	11.0	22	L470884-07	WG490768

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

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



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EnCana Oil & Gas Inc. - CO  
Chris Hines  
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Quality Assurance Report  
Level II

L470859

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

Tax I.D. 62-0814289

Est. 1970

August 02, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Anthracene	mg/kg	0.122	0.142	73.0	35-133	15.0	23	L470884-07	WG490768	
Benzo(a)anthracene	mg/kg	0.116	0.142	69.2	35-136	20.8	23	L470884-07	WG490768	
Benzo(a)pyrene	mg/kg	0.101	0.120	60.7	37-131	16.6	22	L470884-07	WG490768	
Benzo(b)fluoranthene	mg/kg	0.110	0.133	66.0	29-145	18.5	33	L470884-07	WG490768	
Benzo(g,h,i)perylene	mg/kg	0.103	0.123	61.9	10-139	17.4	26	L470884-07	WG490768	
Benzo(k)fluoranthene	mg/kg	0.101	0.113	60.6	31-140	10.9	34	L470884-07	WG490768	
Chrysene	mg/kg	0.111	0.135	66.5	34-137	19.8	23	L470884-07	WG490768	
Dibenz(a,h)anthracene	mg/kg	0.110	0.126	66.1	21-132	13.5	25	L470884-07	WG490768	
Fluoranthene	mg/kg	0.125	0.153	75.0	34-132	20.0	24	L470884-07	WG490768	
Fluorene	mg/kg	0.122	0.143	72.8	38-126	16.2	23	L470884-07	WG490768	
Indeno(1,2,3-cd)pyrene	mg/kg	0.107	0.127	64.2	17-134	17.1	25	L470884-07	WG490768	
Naphthalene	mg/kg	0.126	0.143	75.3	24-122	12.8	29	L470884-07	WG490768	
Phenanthrene	mg/kg	0.126	0.150	75.5	38-128	17.4	25	L470884-07	WG490768	
Pyrene	mg/kg	0.125	0.146	74.6	35-141	15.9	25	L470884-07	WG490768	
2-Fluorobiphenyl				76.24	37-123				WG490768	
Nitrobenzene-d5				75.33	19-129				WG490768	
p-Terphenyl-d14				77.44	34-149				WG490768	
Selenium	mg/kg	44.8	46.1	89.6	75-125	2.86	20	L470846-01	WG490725	
Chromium,Hexavalent	mg/kg	11.5	11.0	57.5	50-150	4.44	20	L470865-01	WG490809	

Batch number /Run number / Sample number cross reference

WG490674: R1303508: L470859-01  
WG490759: R1304189: L470859-01  
WG490709: R1304390: L470859-01  
WG490725: R1304568: L470859-01  
WG490828: R1305069: L470859-01  
WG490768: R1305288: L470859-01  
WG490832: R1305689: L470859-01  
WG490835: R1305690: L470859-01  
WG490809: R1305968: L470859-01  
WG490804: R1307290: L470859-01

\* \* Calculations are performed prior to rounding of reported values .  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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August 02, 2010

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

## Report Summary

Monday June 27, 2011

Report Number: L522255

Samples Received: 06/22/11

Client Project:

Description: K04

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

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

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

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# REPORT OF ANALYSIS

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

June 27, 2011

Date Received : June 22, 2011  
Description : K04

Sample ID : K04-PBN1-062111

Collected By : Brennen Graff  
Collection Date : 06/21/11 09:00

ESC Sample # : L522255-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	8021/8015	06/22/11	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	06/22/11	5
TPH (GC/FID) High Fraction	3500	80.	mg/kg	3546/DRO	06/25/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	06/25/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/25/11 16:21 Revised: 06/27/11 08:21

REPORT OF ANALYSIS

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

June 27, 2011

Date Received : June 22, 2011  
Description : K04

Sample ID : K04-PBN2-062111

Collected By : Brennen Graff  
Collection Date : 06/21/11 11:41

ESC Sample # : L522255-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/23/11	5
TPH (GC/FID) Low Fraction	1.1	0.50	mg/kg	GRO	06/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.5		% Rec.	8021/8015	06/23/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/23/11	5
TPH (GC/FID) High Fraction	2700	80.	mg/kg	3546/DRO	06/25/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	06/25/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

June 27, 2011

Date Received : June 22, 2011  
Description : K04

Sample ID : K04-PBN3-062111

Collected By : Brennen Graff  
Collection Date : 06/21/11 11:47

ESC Sample # : L522255-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0035	0.0025	mg/kg	8021/8015	06/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.5		% Rec.	8021/8015	06/24/11	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	06/24/11	5
TPH (GC/FID) High Fraction	330	40.	mg/kg	3546/DRO	06/24/11	10
Surrogate recovery(%)						
o-Terphenyl	58.3		% Rec.	3546/DRO	06/24/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

June 27, 2011

Date Received : June 22, 2011  
Description : K04

Sample ID : K04-PBN4-062111

Collected By : Brennen Graff  
Collection Date : 06/21/11 11:52

ESC Sample # : L522255-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/23/11	5
TPH (GC/FID) Low Fraction	0.63	0.50	mg/kg	GRO	06/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	06/23/11	5
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	06/23/11	5
TPH (GC/FID) High Fraction	770	40.	mg/kg	3546/DRO	06/24/11	10
Surrogate recovery(%)						
o-Terphenyl	111.		% Rec.	3546/DRO	06/24/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/25/11 16:21 Revised: 06/27/11 08:21



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# REPORT OF ANALYSIS

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

June 27, 2011

Date Received : June 22, 2011  
Description : K04

Sample ID : K04-PBN5-062111

Collected By : Brennen Graff  
Collection Date : 06/21/11 11:59

ESC Sample # : L522255-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/23/11	5
TPH (GC/FID) Low Fraction	1.9	0.50	mg/kg	GRO	06/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.9		% Rec.	8021/8015	06/23/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	06/23/11	5
TPH (GC/FID) High Fraction	130	4.0	mg/kg	3546/DRO	06/25/11	1
Surrogate recovery(%)						
o-Terphenyl	54.2		% Rec.	3546/DRO	06/25/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/25/11 16:21 Revised: 06/27/11 08:21

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L522255-01	WG542375	SAMP	o-Terphenyl	R1737929	J7
L522255-02	WG542375	SAMP	o-Terphenyl	R1737929	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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

Definitions

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



Summary of Remarks For Samples Printed  
06/27/11 at 08:21:52

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L522255-01 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/25/11 16:21  
Sample: L522255-02 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/25/11 16:21  
Sample: L522255-03 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/25/11 16:21  
Sample: L522255-04 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/25/11 16:21  
Sample: L522255-05 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/25/11 16:21



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June 27, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG541973	06/22/11 15:23
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG541973	06/22/11 15:23
a,a,a-Trifluorotoluene(FID)		% Rec.	98.88	59-128	WG541973	06/22/11 15:23
a,a,a-Trifluorotoluene(PID)		% Rec.	103.5	54-144	WG541973	06/22/11 15:23
Benzene	< .0005	mg/kg			WG542157	06/23/11 16:19
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG542157	06/23/11 16:19
a,a,a-Trifluorotoluene(FID)		% Rec.	94.32	59-128	WG542157	06/23/11 16:19
a,a,a-Trifluorotoluene(PID)		% Rec.	96.96	54-144	WG542157	06/23/11 16:19
TPH (GC/FID) High Fraction	< 4	ppm			WG542375	06/24/11 12:22
o-Terphenyl		% Rec.	73.76	50-150	WG542375	06/24/11 12:22

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0474	94.8	76-113	WG541973
a,a,a-Trifluorotoluene(PID)				103.4	54-144	WG541973
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.82	106.	67-135	WG541973
a,a,a-Trifluorotoluene(FID)				104.3	59-128	WG541973
Benzene	mg/kg	.05	0.0492	98.4	76-113	WG542157
a,a,a-Trifluorotoluene(PID)				86.49	54-144	WG542157
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.37	116.	67-135	WG542157
a,a,a-Trifluorotoluene(FID)				106.4	59-128	WG542157
TPH (GC/FID) High Fraction	ppm	60	41.9	69.9	50-150	WG542375
o-Terphenyl				71.04	50-150	WG542375

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0470	0.0474	94.0	76-113	0.860	20	WG541973
a,a,a-Trifluorotoluene(PID)				102.3	54-144			WG541973
TPH (GC/FID) Low Fraction	mg/kg	5.90	5.82	107.	67-135	1.28	20	WG541973
a,a,a-Trifluorotoluene(FID)				104.1	59-128			WG541973
Benzene	mg/kg	0.0516	0.0492	103.	76-113	4.64	20	WG542157
a,a,a-Trifluorotoluene(PID)				104.8	54-144			WG542157
TPH (GC/FID) Low Fraction	mg/kg	6.58	6.37	120.	67-135	3.15	20	WG542157
a,a,a-Trifluorotoluene(FID)				112.1	59-128			WG542157
TPH (GC/FID) High Fraction	ppm	41.5	41.9	69.0	50-150	1.06	25	WG542375
o-Terphenyl				70.26	50-150			WG542375

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.218	0	.05	87.3	32-137	L522260-01	WG541973
a,a,a-Trifluorotoluene(PID)					102.1	54-144		WG541973
TPH (GC/FID) Low Fraction	mg/kg	26.7	0	5.5	97.2	55-109	L522260-01	WG541973
a,a,a-Trifluorotoluene(FID)					104.0	59-128		WG541973

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

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



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Est. 1970

June 27, 2011

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	30.1	0	5.5	110.*	55-109	L522527-01	WG542157
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG542157
Benzene	mg/kg	0.263	0	.05	105.	32-137	L522527-01	WG542157
TPH (GC/FID) High Fraction	ppm	329.	240.	60	148.	50-150	L522231-06	WG542375
o-Terphenyl					139.8	50-150		WG542375

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.223	0.218	89.1	32-137	2.07	39	L522260-01	WG541973
a,a,a-Trifluorotoluene(PID)				102.3	54-144				WG541973
TPH (GC/FID) Low Fraction	mg/kg	26.5	26.7	96.3	55-109	0.980	20	L522260-01	WG541973
a,a,a-Trifluorotoluene(FID)				103.5	59-128				WG541973
TPH (GC/FID) Low Fraction	mg/kg	32.1	30.1	117.*	55-109	6.34	20	L522527-01	WG542157
a,a,a-Trifluorotoluene(FID)				102.9	59-128				WG542157
Benzene	mg/kg	0.273	0.263	109.	32-137	3.91	39	L522527-01	WG542157
TPH (GC/FID) High Fraction	ppm	314.	329.	123.	50-150	4.65	25	L522231-06	WG542375
o-Terphenyl				117.2	50-150				WG542375

Batch number /Run number / Sample number cross reference

WG541973: R1734109: L522255-01 02 04 05  
WG542157: R1736589: L522255-03  
WG542375: R1737929: L522255-01 02 03 04 05

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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

Parachute, CO 81635

Quality Assurance Report  
Level II

L522255

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

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Est. 1970

June 27, 2011

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

## Report Summary

Friday June 24, 2011

Report Number: L522239

Samples Received: 06/22/11

Client Project:

Description: K04

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

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

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

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REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS1-062111 6-8 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:05

ESC Sample # : L522239-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.2		% Rec.	602/8015	06/22/11	5
TPH (GC/FID) High Fraction	490	20.	mg/kg	3546/DRO	06/24/11	5
Surrogate recovery(%) o-Terphenyl	82.5		% Rec.	3546/DRO	06/24/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/24/11 17:35 Printed: 06/24/11 17:36



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# REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS2-062111 8-10 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:12

ESC Sample # : L522239-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	30.	0.50	mg/kg	8015D/GRO	06/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	82.6		% Rec.	602/8015	06/22/11	5
TPH (GC/FID) High Fraction	10000	400	mg/kg	3546/DRO	06/24/11	100
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/24/11	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS3-062111 12-14 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:17

ESC Sample # : L522239-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/23/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.9		% Rec.	602/8015	06/23/11	5
TPH (GC/FID) High Fraction	9200	400	mg/kg	3546/DRO	06/24/11	100
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/24/11	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS4-062111 8-10 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:24

ESC Sample # : L522239-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/23/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.2		% Rec.	602/8015	06/23/11	5
TPH (GC/FID) High Fraction	560	20.	mg/kg	3546/DRO	06/24/11	5
Surrogate recovery(%) o-Terphenyl	51.7		% Rec.	3546/DRO	06/24/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS5-062111 8-10 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:27

ESC Sample # : L522239-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	3.0	0.50	mg/kg	8015D/GRO	06/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	602/8015	06/22/11	5
TPH (GC/FID) High Fraction	12000	400	mg/kg	3546/DRO	06/24/11	100
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/24/11	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

June 24, 2011

Date Received : June 22, 2011  
Description : K04  
Sample ID : K04-PBS6-062111 6-8 IN  
Collected By : Brennen Graff  
Collection Date : 06/21/11 13:34

ESC Sample # : L522239-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1.1	0.50	mg/kg	8015D/GRO	06/23/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.6		% Rec.	602/8015	06/23/11	5
TPH (GC/FID) High Fraction	4000	80.	mg/kg	3546/DRO	06/24/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/24/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/24/11 17:35 Printed: 06/24/11 17:36

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L522239-02	WG542375	SAMP	o-Terphenyl	R1737929	J7
L522239-03	WG542375	SAMP	o-Terphenyl	R1737929	J7
L522239-05	WG542375	SAMP	o-Terphenyl	R1737929	J7
L522239-06	WG542375	SAMP	o-Terphenyl	R1737929	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed  
06/24/11 at 17:36:03

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L522239-01 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35  
Sample: L522239-02 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35  
Sample: L522239-03 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35  
Sample: L522239-04 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35  
Sample: L522239-05 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35  
Sample: L522239-06 Account: ENCANACO Received: 06/22/11 09:00 Due Date: 06/24/11 00:00 RPT Date: 06/24/11 17:35



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EnCana Oil & Gas Inc. - CO  
Chris Hines  
2717 County Road 215, Suite 100  
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Quality Assurance Report  
Level II

L522239

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Tax I.D. 62-0814289

Est. 1970

June 24, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG541975	06/22/11 14:14
a,a,a-Trifluorotoluene(FID)		% Rec.	99.98	59-128	WG541975	06/22/11 14:14
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG542155	06/23/11 15:44
a,a,a-Trifluorotoluene(FID)		% Rec.	95.30	59-128	WG542155	06/23/11 15:44
TPH (GC/FID) High Fraction	< 4	ppm			WG542375	06/24/11 12:22
o-Terphenyl		% Rec.	73.76	50-150	WG542375	06/24/11 12:22

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.38	97.9	67-135	WG541975
a,a,a-Trifluorotoluene(FID)				106.4	59-128	WG541975
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.94	108.	67-135	WG542155
a,a,a-Trifluorotoluene(FID)				97.84	59-128	WG542155
TPH (GC/FID) High Fraction	ppm	60	41.9	69.9	50-150	WG542375
o-Terphenyl				71.04	50-150	WG542375

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.22	5.38	95.0	67-135	3.14	20	WG541975
a,a,a-Trifluorotoluene(FID)				106.2	59-128			WG541975
TPH (GC/FID) Low Fraction	mg/kg	5.93	5.94	108.	67-135	0.160	20	WG542155
a,a,a-Trifluorotoluene(FID)				96.68	59-128			WG542155
TPH (GC/FID) High Fraction	ppm	41.5	41.9	69.0	50-150	1.06	25	WG542375
o-Terphenyl				70.26	50-150			WG542375

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	17.1	0.560	5.5	60.1	55-109	L522231-05	WG541975
a,a,a-Trifluorotoluene(FID)					98.94	59-128		WG541975
TPH (GC/FID) Low Fraction	mg/kg	19.8	0	5.5	71.9	55-109	L522239-03	WG542155
a,a,a-Trifluorotoluene(FID)					90.45	59-128		WG542155
TPH (GC/FID) High Fraction	ppm	329.	240.	60	148.	50-150	L522231-06	WG542375
o-Terphenyl					139.8	50-150		WG542375

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	16.8	17.1	59.1	55-109	1.75	20	L522231-05	WG541975
a,a,a-Trifluorotoluene(FID)				98.79	59-128				WG541975

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

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



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Est. 1970

June 24, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	16.5	19.8	60.1	55-109	17.8	20	L522239-03	WG542155
a,a,a-Trifluorotoluene(FID)				92.65	59-128				WG542155
TPH (GC/FID) High Fraction	ppm	314.	329.	123.	50-150	4.65	25	L522231-06	WG542375
o-Terphenyl				117.2	50-150				WG542375

Batch number /Run number / Sample number cross reference

WG541975: R1734509: L522239-01 02 05  
WG542155: R1736309: L522239-03 04 06  
WG542375: R1737929: L522239-01 02 03 04 05 06

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'





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June 24, 2011

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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Est. 1970

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

## Report Summary

Thursday July 28, 2011

Report Number: L527272

Samples Received: 07/21/11

Client Project: KO 4

Description: KO 4

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

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 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

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

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

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Est. 1970

# REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-N PIT-N WALL-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 14:03

ESC Sample # : L527272-01

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/23/11	5
TPH (GC/FID) Low Fraction	2.6	0.50	mg/kg	GRO	07/23/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	8021/8015	07/23/11	5
a,a,a-Trifluorotoluene(PID)	99.6		% Rec.	8021/8015	07/23/11	5
TPH (GC/FID) High Fraction	94.	4.0	mg/kg	3546/DRO	07/27/11	1
Surrogate recovery(%)						
o-Terphenyl	88.7		% Rec.	3546/DRO	07/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-N PIT-N BOT-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 14:38

ESC Sample # : L527272-02

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/23/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/26/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	07/26/11	5
a,a,a-Trifluorotoluene(PID)	99.7		% Rec.	8021/8015	07/23/11	5
TPH (GC/FID) High Fraction	230	4.0	mg/kg	3546/DRO	07/27/11	1
Surrogate recovery(%)						
o-Terphenyl	60.9		% Rec.	3546/DRO	07/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4

Sample ID : K04-PITX-N PIT-S BOT-071911

Collected By : Bob Stockton  
Collection Date : 07/19/11 14:43

ESC Sample # : L527272-03

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/25/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/25/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.2		% Rec.	8021/8015	07/25/11	5
a,a,a-Trifluorotoluene(PID)	99.6		% Rec.	8021/8015	07/25/11	5
TPH (GC/FID) High Fraction	540	20.	mg/kg	3546/DRO	07/28/11	5
Surrogate recovery(%)						
o-Terphenyl	89.3		% Rec.	3546/DRO	07/28/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-N PIT- E WALL-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 14:50

ESC Sample # : L527272-04

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/25/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/25/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.7		% Rec.	8021/8015	07/25/11	5
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	07/25/11	5
TPH (GC/FID) High Fraction	1100	80.	mg/kg	3546/DRO	07/28/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/28/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-S PIT- N BOT-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 14:59

ESC Sample # : L527272-05

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	07/22/11	5
TPH (GC/FID) High Fraction	330	4.0	mg/kg	3546/DRO	07/27/11	1
Surrogate recovery(%) o-Terphenyl	63.7		% Rec.	3546/DRO	07/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-S PIT- MID-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 15:06

ESC Sample # : L527272-06

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.0		% Rec.	602/8015	07/22/11	5
TPH (GC/FID) High Fraction	610	40.	mg/kg	3546/DRO	07/28/11	10
Surrogate recovery(%) o-Terphenyl	61.6		% Rec.	3546/DRO	07/28/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-S PIT- W WALL-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 15:14

ESC Sample # : L527272-07

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/25/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	07/25/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/27/11	1
Surrogate recovery(%) o-Terphenyl	69.8		% Rec.	3546/DRO	07/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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July 28, 2011

Date Received : July 21, 2011  
Description : KO 4  
Sample ID : K04-PITX-S PIT- S TOE-071911  
Collected By : Bob Stockton  
Collection Date : 07/19/11 15:21

ESC Sample # : L527272-08

Site ID : KO 4

Project # : KO 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/22/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	602/8015	07/22/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/27/11	1
Surrogate recovery(%) o-Terphenyl	96.8		% Rec.	3546/DRO	07/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L527272-04	WG547177	SAMP	o-Terphenyl	R1788531	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

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  
07/28/11 at 15:15:28

TSR Signing Reports: 358  
R5 - Desired TAT

Sample: L527272-01 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-02 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-03 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-04 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-05 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-06 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-07 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01  
Sample: L527272-08 Account: ENCANACO Received: 07/21/11 09:00 Due Date: 07/28/11 00:00 RPT Date: 07/28/11 15:01



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July 28, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG546849	07/22/11 21:02
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG546849	07/22/11 21:02
a,a,a-Trifluorotoluene(FID)		% Rec.	96.87	59-128	WG546849	07/22/11 21:02
a,a,a-Trifluorotoluene(PID)		% Rec.	100.7	54-144	WG546849	07/22/11 21:02
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG546911	07/22/11 13:52
a,a,a-Trifluorotoluene(FID)		% Rec.	100.9	59-128	WG546911	07/22/11 13:52
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG547266	07/25/11 13:49
a,a,a-Trifluorotoluene(FID)		% Rec.	102.3	59-128	WG547266	07/25/11 13:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG547268	07/25/11 17:36
a,a,a-Trifluorotoluene(FID)		% Rec.	102.8	59-128	WG547268	07/25/11 17:36
a,a,a-Trifluorotoluene(PID)		% Rec.	100.4	54-144	WG547268	07/25/11 17:36
Benzene	< .0005	mg/kg			WG547210	07/25/11 17:02
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG547210	07/25/11 17:02
a,a,a-Trifluorotoluene(FID)		% Rec.	97.08	59-128	WG547210	07/25/11 17:02
a,a,a-Trifluorotoluene(PID)		% Rec.	100.1	54-144	WG547210	07/25/11 17:02
TPH (GC/FID) High Fraction	< 4	ppm			WG547177	07/27/11 10:30
o-Terphenyl		% Rec.	58.42	50-150	WG547177	07/27/11 10:30

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0491	98.3	76-113	WG546849
a,a,a-Trifluorotoluene(FID)				96.83	59-128	WG546849
a,a,a-Trifluorotoluene(PID)				101.2	54-144	WG546849
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.90	107.	67-135	WG546849
a,a,a-Trifluorotoluene(FID)				102.2	59-128	WG546849
a,a,a-Trifluorotoluene(PID)				112.6	54-144	WG546849
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.08	111.	67-135	WG546911
a,a,a-Trifluorotoluene(FID)				107.9	59-128	WG546911
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.91	107.	67-135	WG547266
a,a,a-Trifluorotoluene(FID)				110.4	59-128	WG547266
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.86	107.	67-135	WG547268
a,a,a-Trifluorotoluene(FID)				98.47	59-128	WG547268
Benzene	mg/kg	.05	0.0473	94.6	76-113	WG547210
a,a,a-Trifluorotoluene(PID)				100.9	54-144	WG547210
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.62	102.	67-135	WG547210
a,a,a-Trifluorotoluene(FID)				102.7	59-128	WG547210
TPH (GC/FID) High Fraction	ppm	60	47.5	79.1	50-150	WG547177
o-Terphenyl				58.59	50-150	WG547177

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

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



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Est. 1970

July 28, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	6.00	5.90	109.		67-135	1.56	20	WG546849
a,a,a-Trifluorotoluene(FID)				102.4		59-128			WG546849
a,a,a-Trifluorotoluene(PID)				112.8		54-144			WG546849
Benzene	mg/kg	0.0498	0.0491	100.		76-113	1.36	20	WG546849
a,a,a-Trifluorotoluene(FID)				96.63		59-128			WG546849
a,a,a-Trifluorotoluene(PID)				100.0		54-144			WG546849
TPH (GC/FID) Low Fraction	mg/kg	6.11	6.08	111.		67-135	0.450	20	WG546911
a,a,a-Trifluorotoluene(FID)				108.5		59-128			WG546911
TPH (GC/FID) Low Fraction	mg/kg	6.35	5.91	115.		67-135	7.18	20	WG547266
a,a,a-Trifluorotoluene(FID)				110.3		59-128			WG547266
TPH (GC/FID) Low Fraction	mg/kg	6.05	5.86	110.		67-135	3.18	20	WG547268
a,a,a-Trifluorotoluene(FID)				98.82		59-128			WG547268
Benzene	mg/kg	0.0464	0.0473	93.0		76-113	1.84	20	WG547210
a,a,a-Trifluorotoluene(PID)				101.1		54-144			WG547210
TPH (GC/FID) Low Fraction	mg/kg	5.62	5.62	102.		67-135	0	20	WG547210
a,a,a-Trifluorotoluene(FID)				102.5		59-128			WG547210
TPH (GC/FID) High Fraction	ppm	45.0	47.5	75.0		50-150	5.33	25	WG547177
o-Terphenyl				55.42		50-150			WG547177

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.234	0	.05	93.8	32-137	L527123-01	WG546849
a,a,a-Trifluorotoluene(FID)					96.19	59-128		WG546849
a,a,a-Trifluorotoluene(PID)					99.04	54-144		WG546849
TPH (GC/FID) Low Fraction	mg/kg	16.8	0	5.5	61.1	55-109	L527123-01	WG546849
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG546849
a,a,a-Trifluorotoluene(PID)					111.3	54-144		WG546849
TPH (GC/FID) Low Fraction	mg/kg	22.8	0	5.5	83.1	55-109	L527272-05	WG546911
a,a,a-Trifluorotoluene(FID)					104.2	59-128		WG546911
TPH (GC/FID) Low Fraction	mg/kg	280.	0	5.5	108.	55-109	L527591-09	WG547266
a,a,a-Trifluorotoluene(FID)					110.4	59-128		WG547266
TPH (GC/FID) Low Fraction	mg/kg	25.6	0.512	5.5	91.1	55-109	L527538-26	WG547268
a,a,a-Trifluorotoluene(FID)					106.1	59-128		WG547268
Benzene	mg/kg	0.184	0.00256	.05	72.7	32-137	L527525-04	WG547210
a,a,a-Trifluorotoluene(PID)					99.83	54-144		WG547210
TPH (GC/FID) Low Fraction	mg/kg	19.5	0.288	5.5	70.0	55-109	L527525-04	WG547210
a,a,a-Trifluorotoluene(FID)					100.5	59-128		WG547210

\* 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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L527272

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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

July 28, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.206	0.234	82.5	32-137	12.8	39	L527123-01	WG546849
a,a,a-Trifluorotoluene(FID)				95.85	59-128				WG546849
a,a,a-Trifluorotoluene(PID)				99.72	54-144				WG546849
TPH (GC/FID) Low Fraction	mg/kg	15.2	16.8	55.3	55-109	9.87	20	L527123-01	WG546849
a,a,a-Trifluorotoluene(FID)				100.9	59-128				WG546849
a,a,a-Trifluorotoluene(PID)				109.3	54-144				WG546849
TPH (GC/FID) Low Fraction	mg/kg	21.7	22.8	78.8	55-109	5.26	20	L527272-05	WG546911
a,a,a-Trifluorotoluene(FID)				103.2	59-128				WG546911
TPH (GC/FID) Low Fraction	mg/kg	280.	280.	108.	55-109	0.0100	20	L527591-09	WG547266
a,a,a-Trifluorotoluene(FID)				110.2	59-128				WG547266
TPH (GC/FID) Low Fraction	mg/kg	22.3	25.6	79.1	55-109	13.8	20	L527538-26	WG547268
a,a,a-Trifluorotoluene(FID)				98.44	59-128				WG547268
Benzene	mg/kg	0.198	0.184	78.3	32-137	7.28	39	L527525-04	WG547210
a,a,a-Trifluorotoluene(PID)				99.79	54-144				WG547210
TPH (GC/FID) Low Fraction	mg/kg	18.6	19.5	66.6	55-109	4.89	20	L527525-04	WG547210
a,a,a-Trifluorotoluene(FID)				100.4	59-128				WG547210

Batch number /Run number / Sample number cross reference

WG546849: R1779531: L527272-01 02  
WG546911: R1779590: L527272-05 06 08  
WG547266: R1782490: L527272-07  
WG547268: R1782871: L527272-02  
WG547210: R1783911: L527272-03 04  
WG547177: R1788531: L527272-01 02 03 04 05 06 07 08

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'





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

Parachute, CO 81635

Quality Assurance Report  
Level II

L527272

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July 28, 2011

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

## Report Summary

Tuesday July 26, 2011

Report Number: L527320

Samples Received: 07/22/11

Client Project: K04

Description: K04 Pit X

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:

Darren Reeder , 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

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

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

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# REPORT OF ANALYSIS

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

July 26, 2011

Date Received : July 22, 2011  
Description : K04 Pit X  
Sample ID : K04-PITX-MOI-072111  
Collected By : Brennan Graff  
Collection Date : 07/21/11 13:36

ESC Sample # : L527320-01

Site ID : K04

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/22/11	5
TPH (GC/FID) Low Fraction	0.75	0.50	mg/kg	GRO	07/22/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	84.4		% Rec.	8021/8015	07/22/11	5
a,a,a-Trifluorotoluene(PID)	96.3		% Rec.	8021/8015	07/22/11	5
TPH (GC/FID) High Fraction	3400	80.	mg/kg	3546/DRO	07/25/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/25/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 07/26/11 13:39 Printed: 07/26/11 14:35

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L527320-01	WG547055	SAMP	o-Terphenyl	R1781970	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

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  
07/26/11 at 14:35:23

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L527320-01 Account: ENCANACO Received: 07/22/11 09:00 Due Date: 07/26/11 00:00 RPT Date: 07/26/11 13:39



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

Parachute, CO 81635

Quality Assurance Report  
Level II

L527320

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1-800-767-5859  
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Tax I.D. 62-0814289

Est. 1970

July 26, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG546912	07/22/11 17:56
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG546912	07/22/11 17:56
a,a,a-Trifluorotoluene(FID)		% Rec.	85.96	59-128	WG546912	07/22/11 17:56
a,a,a-Trifluorotoluene(PID)		% Rec.	97.65	54-144	WG546912	07/22/11 17:56
TPH (GC/FID) High Fraction	< 4	ppm			WG547055	07/24/11 06:04
o-Terphenyl		% Rec.	71.14	50-150	WG547055	07/24/11 06:04

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0429	85.9	76-113	WG546912
a,a,a-Trifluorotoluene(FID)				85.94	59-128	WG546912
a,a,a-Trifluorotoluene(PID)				97.22	54-144	WG546912
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.85	88.2	67-135	WG546912
a,a,a-Trifluorotoluene(FID)				91.35	59-128	WG546912
a,a,a-Trifluorotoluene(PID)				105.5	54-144	WG546912
TPH (GC/FID) High Fraction	ppm	60	50.1	83.5	50-150	WG547055
o-Terphenyl				68.47	50-150	WG547055

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	4.96	4.85	90.0	67-135	2.28	20	WG546912
a,a,a-Trifluorotoluene(FID)				92.18	59-128			WG546912
a,a,a-Trifluorotoluene(PID)				106.4	54-144			WG546912
Benzene	mg/kg	0.0503	0.0429	100.	76-113	15.8	20	WG546912
a,a,a-Trifluorotoluene(FID)				85.95	59-128			WG546912
a,a,a-Trifluorotoluene(PID)				96.41	54-144			WG546912
TPH (GC/FID) High Fraction	ppm	50.8	50.1	85.0	50-150	1.50	25	WG547055
o-Terphenyl				65.45	50-150			WG547055

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.224	0	.05	89.4	32-137	L527322-04	WG546912
a,a,a-Trifluorotoluene(FID)					84.21	59-128		WG546912
a,a,a-Trifluorotoluene(PID)					95.28	54-144		WG546912
TPH (GC/FID) Low Fraction	mg/kg	14.7	0	5.5	53.5*	55-109	L527322-04	WG546912
a,a,a-Trifluorotoluene(FID)					87.95	59-128		WG546912
a,a,a-Trifluorotoluene(PID)					100.1	54-144		WG546912

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.210	0.224	84.0	32-137	6.31	39	L527322-04	WG546912
a,a,a-Trifluorotoluene(FID)				85.22	59-128				WG546912
a,a,a-Trifluorotoluene(PID)				96.30	54-144				WG546912
TPH (GC/FID) Low Fraction	mg/kg	15.4	14.7	55.8	55-109	4.22	20	L527322-04	WG546912
a,a,a-Trifluorotoluene(FID)				88.43	59-128				WG546912
a,a,a-Trifluorotoluene(PID)				100.3	54-144				WG546912

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



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

Parachute, CO 81635

Quality Assurance Report  
Level II

L527320

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

Tax I.D. 62-0814289

Est. 1970

July 26, 2011

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Batch number /Run number / Sample number cross reference

WG546912: R1779390: L527320-01

WG547055: R1781970: L527320-01

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

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

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July 26, 2011

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

## Report Summary

Friday August 12, 2011

Report Number: L530181

Samples Received: 08/10/11

Client Project:

Description: K04 and E34 Pit Closure

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

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

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Est. 1970

# REPORT OF ANALYSIS

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

August 12, 2011

Date Received : August 10, 2011  
Description : K04 and E34 Pit Closure  
Sample ID : K04-E34-PITX-SPOIL-080811 4-6IN  
Collected By : Brennen Graff  
Collection Date : 08/08/11 13:39

ESC Sample # : L530181-01

Site ID : K04

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/10/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	602/8015	08/10/11	5
TPH (GC/FID) High Fraction	590	20.	mg/kg	3546/DRO	08/12/11	5
Surrogate recovery(%) o-Terphenyl	57.0		% Rec.	3546/DRO	08/12/11	5

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: 08/12/11 14:06 Printed: 08/12/11 14:06



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Est. 1970

# REPORT OF ANALYSIS

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

August 12, 2011

Date Received : August 10, 2011  
Description : K04 and E34 Pit Closure  
Sample ID : K04-PITX-SPOIL-080811 4-6IN  
Collected By : Brennen Graff  
Collection Date : 08/08/11 13:54

ESC Sample # : L530181-02

Site ID : K04

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/11/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	602/8015	08/11/11	5
TPH (GC/FID) High Fraction	2600	80.	mg/kg	3546/DRO	08/12/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/12/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/12/11 14:06 Printed: 08/12/11 14:06

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L530181-02	WG549763	SAMP	o-Terphenyl	R1811890	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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Definitions

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- 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  
08/12/11 at 14:06:27

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L530181-01 Account: ENCANACO Received: 08/10/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 14:06

Sample: L530181-02 Account: ENCANACO Received: 08/10/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 14:06



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EnCana Oil & Gas Inc. - CO  
Chris Hines / Jake Harris  
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Quality Assurance Report  
Level II

L530181

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Tax I.D. 62-0814289

Est. 1970

August 12, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG549816	08/10/11 15:34
a,a,a-Trifluorotoluene(FID)		% Rec.	98.13	59-128	WG549816	08/10/11 15:34
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG550056	08/11/11 15:25
a,a,a-Trifluorotoluene(FID)		% Rec.	100.1	59-128	WG550056	08/11/11 15:25
TPH (GC/FID) High Fraction	< 4	ppm			WG549763	08/11/11 15:43
o-Terphenyl		% Rec.	65.13	50-150	WG549763	08/11/11 15:43

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.45	99.1	67-135	WG549816
a,a,a-Trifluorotoluene(FID)				105.0	59-128	WG549816
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.91	107.	67-135	WG550056
a,a,a-Trifluorotoluene(FID)				105.4	59-128	WG550056
TPH (GC/FID) High Fraction	ppm	60	47.6	79.3	50-150	WG549763
o-Terphenyl				72.80	50-150	WG549763

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.99	5.45	109.	67-135	9.39	20	WG549816
a,a,a-Trifluorotoluene(FID)				105.6	59-128			WG549816
TPH (GC/FID) Low Fraction	mg/kg	5.47	5.91	99.0	67-135	7.65	20	WG550056
a,a,a-Trifluorotoluene(FID)				105.7	59-128			WG550056
TPH (GC/FID) High Fraction	ppm	49.4	47.6	82.0	50-150	3.87	25	WG549763
o-Terphenyl				74.82	50-150			WG549763

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	24.6	0	5.5	89.5	55-109	L530126-01	WG549816
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG549816
TPH (GC/FID) Low Fraction	mg/kg	19.3	0	5.5	70.1	55-109	L530181-02	WG550056
a,a,a-Trifluorotoluene(FID)					98.32	59-128		WG550056
TPH (GC/FID) High Fraction	ppm	40.5	0	60	67.4	50-150	L529828-01	WG549763
o-Terphenyl					61.16	50-150		WG549763

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	22.4	24.6	81.6	55-109	9.21	20	L530126-01	WG549816
a,a,a-Trifluorotoluene(FID)				100.1	59-128				WG549816

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

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





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

Parachute, CO 81635

Quality Assurance Report  
Level II

L530181

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

Est. 1970

August 12, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	20.8	19.3	75.6	55-109	7.60	20	L530181-02	WG550056
a,a,a-Trifluorotoluene(FID)				99.37	59-128				WG550056
TPH (GC/FID) High Fraction	ppm	45.0	40.5	74.9	50-150	10.5	25	L529828-01	WG549763
o-Terphenyl				68.29	50-150				WG549763

Batch number /Run number / Sample number cross reference

WG549816: R1810457: L530181-01  
WG550056: R1811630: L530181-02  
WG549763: R1811890: L530181-01 02

\* \* Calculations are performed prior to rounding of reported values.  
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August 12, 2011

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.

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

## Report Summary

Monday September 12, 2011

Report Number: L534827

Samples Received: 09/08/11

Client Project:

Description: K04-E34 PIT X SPOIL

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

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# REPORT OF ANALYSIS

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

September 12, 2011

Date Received : September 08, 2011  
Description : K04-E34 PIT X SPOIL  
Sample ID : K04-E34-PITX-SPOIL-090711  
Collected By : Brennan Graff  
Collection Date : 09/07/11 11:01

ESC Sample # : L534827-01

Site ID : K04

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/08/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.8		% Rec.	602/8015	09/08/11	5
TPH (GC/FID) High Fraction	520	20.	mg/kg	3546/DRO	09/10/11	5
Surrogate recovery(%) o-Terphenyl	80.3		% Rec.	3546/DRO	09/10/11	5

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: 09/12/11 15:02 Printed: 09/12/11 15:03

Summary of Remarks For Samples Printed  
09/12/11 at 15:03:00

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L534827-01 Account: ENCANACO Received: 09/08/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/12/11 15:02



**YOUR LAB OF CHOICE**

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

Parachute, CO 81635

Quality Assurance Report  
Level II

L534827

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Tax I.D. 62-0814289

Est. 1970

September 12, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG554093	09/08/11 08:16
a,a,a-Trifluorotoluene(FID)		% Rec.	94.47	59-128	WG554093	09/08/11 08:16
TPH (GC/FID) High Fraction	< 4	ppm			WG554075	09/09/11 21:55
o-Terphenyl		% Rec.	77.45	50-150	WG554075	09/09/11 21:55

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.35	115.	67-135	WG554093
a,a,a-Trifluorotoluene(FID)				99.34	59-128	WG554093
TPH (GC/FID) High Fraction	ppm	60	50.4	84.0	50-150	WG554075
o-Terphenyl				83.39	50-150	WG554075

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.01	6.35	109.	67-135	5.42	20	WG554093
a,a,a-Trifluorotoluene(FID)				98.21	59-128			WG554093
TPH (GC/FID) High Fraction	ppm	49.2	50.4	82.0	50-150	2.36	20	WG554075
o-Terphenyl				84.72	50-150			WG554075

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	24.5	0	5.5	89.2	55-109	L534136-13	WG554093
a,a,a-Trifluorotoluene(FID)					99.06	59-128		WG554093
TPH (GC/FID) High Fraction	ppm	43.8	0	60	73.0	50-150	L534150-05	WG554075
o-Terphenyl					70.98	50-150		WG554075

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	21.4	24.5	78.0	55-109	13.4	20	L534136-13	WG554093
a,a,a-Trifluorotoluene(FID)				96.05	59-128				WG554093
TPH (GC/FID) High Fraction	ppm	44.2	43.8	73.6	50-150	0.844	20	L534150-05	WG554075
o-Terphenyl				73.11	50-150				WG554075

Batch number /Run number / Sample number cross reference

WG554093: R1850176: L534827-01  
WG554075: R1853860: L534827-01

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 12, 2011

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.

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

## Report Summary

Monday September 12, 2011

Report Number: L534795

Samples Received: 09/08/11

Client Project:

Description: K04-PitX-Spoil

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

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Est. 1970

REPORT OF ANALYSIS

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

September 12, 2011

Date Received : September 08, 2011  
Description : K04-PitX-Spoil  
Sample ID : K04-PITX-SPOIL-090711 6-8 IN  
Collected By : Brennen Graff  
Collection Date : 09/07/11 10:42

ESC Sample # : L534795-01

Site ID : K04

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/08/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.7		% Rec.	602/8015	09/08/11	5
TPH (GC/FID) High Fraction	1100	20.	mg/kg	3546/DRO	09/10/11	5
Surrogate recovery(%) o-Terphenyl	57.3		% Rec.	3546/DRO	09/10/11	5

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: 09/12/11 15:02 Printed: 09/12/11 15:02

Summary of Remarks For Samples Printed  
09/12/11 at 15:02:30

TSR Signing Reports: 358  
R3 - Rush: Two Day

Sample: L534795-01 Account: ENCANACO Received: 09/08/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/12/11 15:02



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

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Quality Assurance Report  
Level II

L534795

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Est. 1970

September 12, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG554093	09/08/11 08:16
a,a,a-Trifluorotoluene(FID)		% Rec.	94.47	59-128	WG554093	09/08/11 08:16
TPH (GC/FID) High Fraction	< 4	ppm			WG554075	09/09/11 21:55
o-Terphenyl		% Rec.	77.45	50-150	WG554075	09/09/11 21:55

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.35	115.	67-135	WG554093
a,a,a-Trifluorotoluene(FID)				99.34	59-128	WG554093
TPH (GC/FID) High Fraction	ppm	60	50.4	84.0	50-150	WG554075
o-Terphenyl				83.39	50-150	WG554075

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.01	6.35	109.	67-135	5.42	20	WG554093
a,a,a-Trifluorotoluene(FID)				98.21	59-128			WG554093
TPH (GC/FID) High Fraction	ppm	49.2	50.4	82.0	50-150	2.36	20	WG554075
o-Terphenyl				84.72	50-150			WG554075

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	24.5	0	5.5	89.2	55-109	L534136-13	WG554093
a,a,a-Trifluorotoluene(FID)					99.06	59-128		WG554093
TPH (GC/FID) High Fraction	ppm	43.8	0	60	73.0	50-150	L534150-05	WG554075
o-Terphenyl					70.98	50-150		WG554075

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	21.4	24.5	78.0	55-109	13.4	20	L534136-13	WG554093
a,a,a-Trifluorotoluene(FID)				96.05	59-128				WG554093
TPH (GC/FID) High Fraction	ppm	44.2	43.8	73.6	50-150	0.844	20	L534150-05	WG554075
o-Terphenyl				73.11	50-150				WG554075

Batch number /Run number / Sample number cross reference

WG554093: R1850176: L534795-01  
WG554075: R1853860: L534795-01

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Chris Hines / Jake Harris  
2717 County Road 215, Suite 100

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September 12, 2011

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Est. 1970

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

## Report Summary

Thursday September 22, 2011

Report Number: L536956

Samples Received: 09/20/11

Client Project: E34/K04

Description:

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

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Est. 1970

# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N1-091611

Collected By : SRM  
Collection Date : 09/16/11 12:30

ESC Sample # : L536956-01

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.6		% Rec.	8021/8015	09/20/11	5
a,a,a-Trifluorotoluene(PID)	95.5		% Rec.	8021/8015	09/20/11	5
TPH (GC/FID) High Fraction	370	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	69.3		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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12065 Lebanon Rd.  
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N2-091611

Collected By : SRM  
Collection Date : 09/16/11 12:45

ESC Sample # : L536956-02

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.2		% Rec.	8021/8015	09/20/11	5
a,a,a-Trifluorotoluene(PID)	95.0		% Rec.	8021/8015	09/20/11	5
TPH (GC/FID) High Fraction	490	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	69.0		% Rec.	3546/DRO	09/21/11	5

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N3-091611

Collected By : SRM  
Collection Date : 09/16/11 13:00

ESC Sample # : L536956-03

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.7		% Rec.	8021/8015	09/20/11	5
a,a,a-Trifluorotoluene(PID)	95.5		% Rec.	8021/8015	09/20/11	5
TPH (GC/FID) High Fraction	240	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	69.6		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N4-091611

Collected By : SRM  
Collection Date : 09/16/11 13:15

ESC Sample # : L536956-04

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/20/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.2		% Rec.	8021/8015	09/20/11	5
a,a,a-Trifluorotoluene(PID)	96.2		% Rec.	8021/8015	09/20/11	5
TPH (GC/FID) High Fraction	420	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	69.5		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N5-091611

Collected By : SRM  
Collection Date : 09/16/11 13:30

ESC Sample # : L536956-05

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.5		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	95.4		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	340	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	55.3		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N6-091611

Collected By : SRM  
Collection Date : 09/16/11 13:45

ESC Sample # : L536956-06

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.5		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	95.7		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	580	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	56.2		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N7-091611

Collected By : SRM  
Collection Date : 09/16/11 14:00

ESC Sample # : L536956-07

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.5		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	95.5		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	210	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	63.6		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N8-091611

Collected By : SRM  
Collection Date : 09/16/11 14:15

ESC Sample # : L536956-08

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.6		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	95.5		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	280	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	67.9		% Rec.	3546/DRO	09/21/11	5

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REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N9-091611

Collected By : SRM  
Collection Date : 09/16/11 14:30

ESC Sample # : L536956-09

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/21/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/21/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/21/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.0		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	09/21/11	5
TPH (GC/FID) High Fraction	220	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	62.0		% Rec.	3546/DRO	09/21/11	5

BDL - Below Detection Limit

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# REPORT OF ANALYSIS

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

September 22, 2011

Date Received : September 20, 2011  
Description :

Sample ID : E-34-N10-091611

Collected By : SRM  
Collection Date : 09/16/11 14:45

ESC Sample # : L536956-10

Site ID :

Project # : E34/K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/22/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/22/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/22/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/22/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/21/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.3		% Rec.	8021/8015	09/21/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/22/11	5
TPH (GC/FID) High Fraction	200	20.	mg/kg	3546/DRO	09/21/11	5
Surrogate recovery(%)						
o-Terphenyl	69.1		% Rec.	3546/DRO	09/21/11	5

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L536956-08	WG556170	SAMP	TPH (GC/FID) High Fraction	R1867758	J6



Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

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  
09/22/11 at 13:17:44

TSR Signing Reports: 358  
R3 - Rush: Two Day

If COC says TPH, then please log for GRO and DRO.

Sample: L536956-01 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-02 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-03 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-04 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-05 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-06 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-07 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-08 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-09 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42  
Sample: L536956-10 Account: ENCANACO Received: 09/20/11 09:00 Due Date: 09/22/11 00:00 RPT Date: 09/22/11 10:42



YOUR LAB OF CHOICE

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

Parachute, CO 81635

Quality Assurance Report  
Level II

L536956

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

Tax I.D. 62-0814289

Est. 1970

September 22, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG556163	09/20/11 22:04
Ethylbenzene	< .0005	mg/kg			WG556163	09/20/11 22:04
Toluene	< .005	mg/kg			WG556163	09/20/11 22:04
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG556163	09/20/11 22:04
Total Xylene	< .0015	mg/kg			WG556163	09/20/11 22:04
a,a,a-Trifluorotoluene(FID)		% Rec.	90.29	59-128	WG556163	09/20/11 22:04
a,a,a-Trifluorotoluene(PID)		% Rec.	96.40	54-144	WG556163	09/20/11 22:04
Benzene	< .0005	mg/kg			WG556579	09/22/11 05:48
Ethylbenzene	< .0005	mg/kg			WG556579	09/22/11 05:48
Toluene	< .005	mg/kg			WG556579	09/22/11 05:48
Total Xylene	< .0015	mg/kg			WG556579	09/22/11 05:48
a,a,a-Trifluorotoluene(PID)		% Rec.	102.7	54-144	WG556579	09/22/11 05:48
TPH (GC/FID) High Fraction	< 4	ppm			WG556170	09/21/11 16:50
o-Terphenyl		% Rec.	82.48	50-150	WG556170	09/21/11 16:50

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0388	77.6	76-113	WG556163
Ethylbenzene	mg/kg	.05	0.0419	83.9	78-115	WG556163
Toluene	mg/kg	.05	0.0432	86.3	76-114	WG556163
Total Xylene	mg/kg	.15	0.123	82.0	81-118	WG556163
a,a,a-Trifluorotoluene(PID)				93.81	54-144	WG556163
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.80	105.	67-135	WG556163
a,a,a-Trifluorotoluene(FID)				95.58	59-128	WG556163
Benzene	mg/kg	.05	0.0458	91.7	76-113	WG556579
Ethylbenzene	mg/kg	.05	0.0513	103.	78-115	WG556579
Toluene	mg/kg	.05	0.0509	102.	76-114	WG556579
Total Xylene	mg/kg	.15	0.150	100.	81-118	WG556579
a,a,a-Trifluorotoluene(PID)				101.0	54-144	WG556579
TPH (GC/FID) High Fraction	ppm	60	47.2	78.7	50-150	WG556170
o-Terphenyl				80.53	50-150	WG556170

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0405	0.0388	81.0	76-113	4.27	20	WG556163
Ethylbenzene	mg/kg	0.0437	0.0419	87.0	78-115	4.20	20	WG556163
Toluene	mg/kg	0.0447	0.0432	89.0	76-114	3.45	20	WG556163
Total Xylene	mg/kg	0.128	0.123	85.0	81-118	3.77	20	WG556163
a,a,a-Trifluorotoluene(PID)				95.11	54-144			WG556163
TPH (GC/FID) Low Fraction	mg/kg	6.50	5.80	118.	67-135	11.5	20	WG556163
a,a,a-Trifluorotoluene(FID)				96.99	59-128			WG556163
Benzene	mg/kg	0.0446	0.0458	89.0	76-113	2.84	20	WG556579
Ethylbenzene	mg/kg	0.0497	0.0513	99.0	78-115	3.02	20	WG556579
Toluene	mg/kg	0.0496	0.0509	99.0	76-114	2.50	20	WG556579
Total Xylene	mg/kg	0.146	0.150	97.0	81-118	2.87	20	WG556579
a,a,a-Trifluorotoluene(PID)				102.4	54-144			WG556579

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

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



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

Parachute, CO 81635

Quality Assurance Report  
Level II

L536956

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

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September 22, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	44.9	47.2	75.0		50-150	5.00	25	WG556170
o-Terphenyl				71.91		50-150			WG556170

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Benzene	mg/kg	0.136	0	.05	54.2	32-137	L536964-03	WG556163
Ethylbenzene	mg/kg	0.122	0	.05	48.7	10-150	L536964-03	WG556163
Toluene	mg/kg	0.143	0	.05	57.2	20-142	L536964-03	WG556163
Total Xylene	mg/kg	0.356	0	.15	47.4	16-141	L536964-03	WG556163
a,a,a-Trifluorotoluene(PID)					91.84	54-144		WG556163
TPH (GC/FID) Low Fraction	mg/kg	14.6	0	5.5	53.2*	55-109	L536964-03	WG556163
a,a,a-Trifluorotoluene(FID)					92.00	59-128		WG556163
Benzene	mg/kg	0.214	0	.05	85.6	32-137	L536844-01	WG556579
Ethylbenzene	mg/kg	0.237	0	.05	94.8	10-150	L536844-01	WG556579
Toluene	mg/kg	0.238	0	.05	95.2	20-142	L536844-01	WG556579
Total Xylene	mg/kg	0.692	0	.15	92.2	16-141	L536844-01	WG556579
a,a,a-Trifluorotoluene(PID)					100.0	54-144		WG556579
TPH (GC/FID) High Fraction	ppm	318.	280.	60	63.8	50-150	L536956-08	WG556170
o-Terphenyl					66.18	50-150		WG556170

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.132	0.136	52.6	32-137	3.02	39	L536964-03	WG556163
Ethylbenzene	mg/kg	0.113	0.122	45.1	10-150	7.66	44	L536964-03	WG556163
Toluene	mg/kg	0.131	0.143	52.4	20-142	8.63	42	L536964-03	WG556163
Total Xylene	mg/kg	0.327	0.356	43.6	16-141	8.33	46	L536964-03	WG556163
a,a,a-Trifluorotoluene(PID)				95.06	54-144				WG556163
TPH (GC/FID) Low Fraction	mg/kg	13.2	14.6	48.0*	55-109	10.3	20	L536964-03	WG556163
a,a,a-Trifluorotoluene(FID)				91.72	59-128				WG556163
Benzene	mg/kg	0.232	0.214	92.8	32-137	8.10	39	L536844-01	WG556579
Ethylbenzene	mg/kg	0.257	0.237	103.	10-150	7.98	44	L536844-01	WG556579
Toluene	mg/kg	0.260	0.238	104.	20-142	8.87	42	L536844-01	WG556579
Total Xylene	mg/kg	0.746	0.692	99.4	16-141	7.50	46	L536844-01	WG556579
a,a,a-Trifluorotoluene(PID)				101.3	54-144				WG556579
TPH (GC/FID) High Fraction	ppm	295.	318.	25.6*	50-150	7.47	25	L536956-08	WG556170
o-Terphenyl				59.47	50-150				WG556170

Batch number /Run number / Sample number cross reference

WG556163: R1867393: L536956-01 02 03 04 05 06 07 08 09 10

WG556579: R1867634: L536956-10

WG556170: R1867758: L536956-01 02 03 04 05 06 07 08 09 10

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

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

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



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September 22, 2011

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

## Report Summary

Tuesday October 04, 2011

Report Number: L539225

Samples Received: 09/30/11

Client Project: K04

Description: K04 Soil Spoil

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.

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REPORT OF ANALYSIS

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N1-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 13:00

ESC Sample # : L539225-01

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	99.2		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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# REPORT OF ANALYSIS

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N2-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 13:15

ESC Sample # : L539225-02

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	99.5		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1900	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N3-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 13:30

ESC Sample # : L539225-03

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1000	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N4-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 13:45

ESC Sample # : L539225-04

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	99.5		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	2000	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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# REPORT OF ANALYSIS

Chris Hines  
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2717 County Road 215, Suite 100  
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October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N5-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 14:00

ESC Sample # : L539225-05

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	99.5		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1800	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N6-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 14:15

ESC Sample # : L539225-06

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.9		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	98.4		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	2500	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N7-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 14:30

ESC Sample # : L539225-07

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	98.9		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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

October 04, 2011

Date Received : September 30, 2011  
Description : K04 Soil Spoil

Sample ID : K04-N8-092911

Collected By : Scotty Mann  
Collection Date : 09/29/11 14:45

ESC Sample # : L539225-08

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/01/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/01/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/01/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/01/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.4		% Rec.	8021/8015	10/01/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	10/01/11	5
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	10/04/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/04/11	20

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
L539225-01	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-02	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-03	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-04	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-05	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-06	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-07	WG558357	SAMP	o-Terphenyl	R1882733	J7
L539225-08	WG558353	SAMP	TPH (GC/FID) Low Fraction	R1881992	J6
	WG558357	SAMP	o-Terphenyl	R1882733	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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

Definitions

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





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Chris Hines  
2717 County Road 215, Suite 100  
Parachute, CO 81635

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Level II

L539225

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(615) 758-5858  
1-800-767-5859  
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Tax I.D. 62-0814289

Est. 1970

October 04, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG558353	10/01/11 14:17
Ethylbenzene	< .0005	mg/kg			WG558353	10/01/11 14:17
Toluene	< .005	mg/kg			WG558353	10/01/11 14:17
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG558353	10/01/11 14:17
Total Xylene	< .0015	mg/kg			WG558353	10/01/11 14:17
a,a,a-Trifluorotoluene(FID)		% Rec.	96.54	59-128	WG558353	10/01/11 14:17
a,a,a-Trifluorotoluene(PID)		% Rec.	101.0	54-144	WG558353	10/01/11 14:17
TPH (GC/FID) High Fraction	< 4	ppm			WG558357	10/03/11 20:04
o-Terphenyl		% Rec.	63.45	50-150	WG558357	10/03/11 20:04

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0444	88.8	76-113	WG558353
Ethylbenzene	mg/kg	.05	0.0468	93.6	78-115	WG558353
Toluene	mg/kg	.05	0.0478	95.7	76-114	WG558353
Total Xylene	mg/kg	.15	0.137	91.2	81-118	WG558353
a,a,a-Trifluorotoluene(PID)				98.31	54-144	WG558353
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.89	107.	67-135	WG558353
a,a,a-Trifluorotoluene(FID)				96.73	59-128	WG558353
TPH (GC/FID) High Fraction	ppm	60	45.8	76.4	50-150	WG558357
o-Terphenyl				74.21	50-150	WG558357

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0525	0.0444	105.	76-113	16.8	20	WG558353
Ethylbenzene	mg/kg	0.0542	0.0468	108.	78-115	14.7	20	WG558353
Toluene	mg/kg	0.0553	0.0478	110.	76-114	14.5	20	WG558353
Total Xylene	mg/kg	0.158	0.137	105.	81-118	14.2	20	WG558353
a,a,a-Trifluorotoluene(PID)				99.24	54-144			WG558353
TPH (GC/FID) Low Fraction	mg/kg	6.14	5.89	112.	67-135	4.17	20	WG558353
a,a,a-Trifluorotoluene(FID)				95.61	59-128			WG558353
TPH (GC/FID) High Fraction	ppm	48.5	45.8	81.0	50-150	5.63	25	WG558357
o-Terphenyl				78.07	50-150			WG558357

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.199	0	.05	79.7	32-137	L539225-08	WG558353
Ethylbenzene	mg/kg	0.154	0	.05	61.4	10-150	L539225-08	WG558353
Toluene	mg/kg	0.194	0	.05	77.4	20-142	L539225-08	WG558353
Total Xylene	mg/kg	0.455	0	.15	60.7	16-141	L539225-08	WG558353
a,a,a-Trifluorotoluene(PID)					99.00	54-144		WG558353
TPH (GC/FID) Low Fraction	mg/kg	11.9	0	5.5	43.4*	55-109	L539225-08	WG558353
a,a,a-Trifluorotoluene(FID)					91.98	59-128		WG558353
TPH (GC/FID) High Fraction	ppm	163.	48.0	60	192.*	50-150	L538959-06	WG558357
o-Terphenyl					59.36	50-150		WG558357

\* 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  
2717 County Road 215, Suite 100  
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Quality Assurance Report  
Level II

L539225

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

Est. 1970

October 04, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.207	0.199	82.8	32-137	3.84	39	L539225-08	WG558353
Ethylbenzene	mg/kg	0.161	0.154	64.4	10-150	4.61	44	L539225-08	WG558353
Toluene	mg/kg	0.200	0.194	80.1	20-142	3.40	42	L539225-08	WG558353
Total Xylene	mg/kg	0.479	0.455	63.8	16-141	5.07	46	L539225-08	WG558353
a,a,a-Trifluorotoluene(PID)				98.45	54-144				WG558353
TPH (GC/FID) Low Fraction	mg/kg	13.6	11.9	49.4*	55-109	12.9	20	L539225-08	WG558353
a,a,a-Trifluorotoluene(FID)				90.67	59-128				WG558353
TPH (GC/FID) High Fraction	ppm	156.	163.	180.*	50-150	4.58	25	L538959-06	WG558357
o-Terphenyl				67.57	50-150				WG558357

Batch number /Run number / Sample number cross reference

WG558353: R1881992: L539225-01 02 03 04 05 06 07 08  
WG558357: R1882733: L539225-01 02 03 04 05 06 07 08

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

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

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



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

## Report Summary

Monday October 24, 2011

Report Number: L542499

Samples Received: 10/20/11

Client Project: K04

Description: K04-E34 Soil Spoil

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.

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REPORT OF ANALYSIS

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

October 24, 2011

Date Received : October 20, 2011  
Description : K04-E34 Soil Spoil  
Sample ID : K04-E34-SS-N6-101911  
Collected By : SRM  
Collection Date : 10/19/11 15:30

ESC Sample # : L542499-01

Site ID :

Project # : K04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/20/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/20/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/20/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/20/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/20/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.0		% Rec.	8021/8015	10/20/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	10/20/11	5
TPH (GC/FID) High Fraction	56.	4.0	mg/kg	3546/DRO	10/22/11	1
Surrogate recovery(%)						
o-Terphenyl	73.2		% Rec.	3546/DRO	10/22/11	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: 10/24/11 10:01 Printed: 10/24/11 10:02

Summary of Remarks For Samples Printed  
10/24/11 at 10:02:07

TSR Signing Reports: 358  
R3 - Rush: Two Day

If COC says TPH, then please log for GRO and DRO.

Sample: L542499-01 Account: ENCANACO Received: 10/20/11 09:00 Due Date: 10/24/11 00:00 RPT Date: 10/24/11 10:01



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EnCana Oil & Gas Inc. - CO  
Chris Hines  
2717 County Road 215, Suite 100  
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Quality Assurance Report  
Level II

L542499

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October 24, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG561548	10/20/11 15:14
Ethylbenzene	< .0005	mg/kg			WG561548	10/20/11 15:14
Toluene	< .005	mg/kg			WG561548	10/20/11 15:14
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG561548	10/20/11 15:14
Total Xylene	< .0015	mg/kg			WG561548	10/20/11 15:14
a,a,a-Trifluorotoluene(FID)		% Rec.	100.5	59-128	WG561548	10/20/11 15:14
a,a,a-Trifluorotoluene(PID)		% Rec.	106.4	54-144	WG561548	10/20/11 15:14
TPH (GC/FID) High Fraction	< 4	ppm			WG561594	10/21/11 13:23
o-Terphenyl		% Rec.	82.39	50-150	WG561594	10/21/11 13:23

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0469	93.8	76-113	WG561548
Ethylbenzene	mg/kg	.05	0.0534	107.	78-115	WG561548
Toluene	mg/kg	.05	0.0503	101.	76-114	WG561548
Total Xylene	mg/kg	.15	0.161	108.	81-118	WG561548
a,a,a-Trifluorotoluene(PID)				103.6	54-144	WG561548
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.12	93.0	67-135	WG561548
a,a,a-Trifluorotoluene(FID)				99.46	59-128	WG561548
TPH (GC/FID) High Fraction	ppm	60	47.7	79.6	50-150	WG561594
o-Terphenyl				84.39	50-150	WG561594

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0504	0.0469	101.	76-113	7.33	20	WG561548
Ethylbenzene	mg/kg	0.0562	0.0534	112.	78-115	5.06	20	WG561548
Toluene	mg/kg	0.0529	0.0503	106.	76-114	5.11	20	WG561548
Total Xylene	mg/kg	0.169	0.161	112.	81-118	4.37	20	WG561548
a,a,a-Trifluorotoluene(PID)				104.9	54-144			WG561548
TPH (GC/FID) Low Fraction	mg/kg	5.42	5.12	98.0	67-135	5.69	20	WG561548
a,a,a-Trifluorotoluene(FID)				100.8	59-128			WG561548
TPH (GC/FID) High Fraction	ppm	49.1	47.7	82.0	50-150	2.77	20	WG561594
o-Terphenyl				82.49	50-150			WG561594

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.217	0	.05	86.6	32-137	L542494-01	WG561548
Ethylbenzene	mg/kg	0.246	0	.05	98.4	10-150	L542494-01	WG561548
Toluene	mg/kg	0.235	0	.05	94.0	20-142	L542494-01	WG561548
Total Xylene	mg/kg	0.761	0	.15	101.	16-141	L542494-01	WG561548
a,a,a-Trifluorotoluene(PID)					102.3	54-144		WG561548
TPH (GC/FID) Low Fraction	mg/kg	20.0	0.0812	5.5	72.5	55-109	L542494-01	WG561548
a,a,a-Trifluorotoluene(FID)					101.8	59-128		WG561548
TPH (GC/FID) High Fraction	ppm	1420	515.	60	300.*	50-150	L542535-01	WG561594
o-Terphenyl					148.4	50-150		WG561594

\* 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  
2717 County Road 215, Suite 100  
Parachute, CO 81635

Quality Assurance Report  
Level II

L542499

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October 24, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.231	0.217	92.6	32-137	6.66	39	L542494-01	WG561548
Ethylbenzene	mg/kg	0.256	0.246	102.	10-150	3.85	44	L542494-01	WG561548
Toluene	mg/kg	0.244	0.235	97.8	20-142	3.99	42	L542494-01	WG561548
Total Xylene	mg/kg	0.778	0.761	104.	16-141	2.30	46	L542494-01	WG561548
a,a,a-Trifluorotoluene(PID)				103.4	54-144				WG561548
TPH (GC/FID) Low Fraction	mg/kg	22.1	20.0	80.1	55-109	9.91	20	L542494-01	WG561548
a,a,a-Trifluorotoluene(FID)				105.8	59-128				WG561548

Batch number /Run number / Sample number cross reference

WG561548: R1903312: L542499-01  
WG561594: R1904239: L542499-01

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
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Est. 1970

October 24, 2011

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

## Report Summary

Friday May 04, 2012

Report Number: L572774

Samples Received: 05/02/12

Client Project: KO4 REMEDATION

Description: KO4 Landfarm

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

Entire Report Reviewed By:

Jayred Willis , ESC Representative

### Laboratory Certification Numbers

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

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Est. 1970

REPORT OF ANALYSIS

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N1-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:00

ESC Sample # : L572774-01

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/02/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	95.3		% Rec.	602/8015	05/02/12	5
TPH (GC/FID) High Fraction	580	20.	mg/kg	3546/DRO	05/03/12	5
Surrogate recovery(%) o-Terphenyl	85.2		% Rec.	3546/DRO	05/03/12	5

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: 05/04/12 10:42 Printed: 05/04/12 10:42



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Est. 1970

# REPORT OF ANALYSIS

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N2-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:10

ESC Sample # : L572774-02

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/02/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	95.0		% Rec.	602/8015	05/02/12	5
TPH (GC/FID) High Fraction	2400	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	125.		% Rec.	3546/DRO	05/03/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/04/12 10:42 Printed: 05/04/12 10:42



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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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N3-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:20

ESC Sample # : L572774-03

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.1		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	1200	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	137.		% Rec.	3546/DRO	05/03/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N4-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:30

ESC Sample # : L572774-04

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	89.7		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	320	4.0	mg/kg	3546/DRO	05/03/12	1
Surrogate recovery(%) o-Terphenyl	66.0		% Rec.	3546/DRO	05/03/12	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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N5-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:40

ESC Sample # : L572774-05

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.3		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	190	4.0	mg/kg	3546/DRO	05/03/12	1
Surrogate recovery(%) o-Terphenyl	49.7		% Rec.	3546/DRO	05/03/12	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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N6-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 12:50

ESC Sample # : L572774-06

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.8		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	280	4.0	mg/kg	3546/DRO	05/03/12	1
Surrogate recovery(%) o-Terphenyl	65.8		% Rec.	3546/DRO	05/03/12	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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N7-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:00

ESC Sample # : L572774-07

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.2		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	280	4.0	mg/kg	3546/DRO	05/03/12	1
Surrogate recovery(%) o-Terphenyl	77.6		% Rec.	3546/DRO	05/03/12	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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N8-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:10

ESC Sample # : L572774-08

Site ID : KO4

Project # : KO4 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.3		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	420	20.	mg/kg	3546/DRO	05/04/12	5
Surrogate recovery(%) o-Terphenyl	81.8		% Rec.	3546/DRO	05/04/12	5

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N9-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:20

ESC Sample # : L572774-09

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.0		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	330	4.0	mg/kg	3546/DRO	05/03/12	1
Surrogate recovery(%) o-Terphenyl	84.5		% Rec.	3546/DRO	05/03/12	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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N10-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:30

ESC Sample # : L572774-10

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.2		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	720	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	107.		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N11-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:40

ESC Sample # : L572774-11

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.4		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	320	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	63.0		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N12-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 13:50

ESC Sample # : L572774-12

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.1		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	890	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	100.		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N13-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 14:00

ESC Sample # : L572774-13

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.8		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	720	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	86.1		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N14-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 14:10

ESC Sample # : L572774-14

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.3		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	390	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	82.0		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N15-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 14:20

ESC Sample # : L572774-15

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.1		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	880	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	2420		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N16-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 14:30

ESC Sample # : L572774-16

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.3		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	540	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	81.8		% Rec.	3546/DRO	05/03/12	20

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

May 04, 2012

Date Received : May 02, 2012  
Description : KO4 Landfarm  
Sample ID : KO4-GO9/L27-PS-N17-050112 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/01/12 14:40

ESC Sample # : L572774-17

Site ID : KO4

Project # : KO4 REMEDATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/03/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	91.2		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	340	80.	mg/kg	3546/DRO	05/03/12	20
Surrogate recovery(%) o-Terphenyl	47.5		% Rec.	3546/DRO	05/03/12	20

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
L572774-02	WG590749	SAMP	o-Terphenyl	R2155173	J7
L572774-03	WG590749	SAMP	o-Terphenyl	R2155173	J7
L572774-10	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-11	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-12	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-13	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-14	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-15	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-16	WG590750	SAMP	o-Terphenyl	R2156316	J7
L572774-17	WG590750	SAMP	o-Terphenyl	R2156316	J7

Attachment B  
Explanation of QC Qualifier Codes

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

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed  
05/04/12 at 10:42:51

TSR Signing Reports: 358  
R3 - Rush: Two Day

Try not to report benzene as BDL above a 250x dilution. ONLY log soil samples under this account. Waters get logged under ENCRCO.

Sample: L572774-01 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-02 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-03 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-04 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-05 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-06 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-07 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-08 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-09 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-10 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-11 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-12 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-13 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-14 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-15 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-16 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42  
Sample: L572774-17 Account: ENCANACO Received: 05/02/12 09:00 Due Date: 05/04/12 00:00 RPT Date: 05/04/12 10:42



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Quality Assurance Report  
Level II

L572774

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Est. 1970

May 04, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG590692	05/02/12 13:24
a,a,a-Trifluorotoluene(FID)		% Rec.	102.2	59-128	WG590692	05/02/12 13:24
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG590713	05/02/12 23:55
a,a,a-Trifluorotoluene(FID)		% Rec.	90.88	59-128	WG590713	05/02/12 23:55
TPH (GC/FID) High Fraction	< 4	ppm			WG590749	05/03/12 10:13
o-Terphenyl		% Rec.	71.77	50-150	WG590749	05/03/12 10:13
TPH (GC/FID) High Fraction	< 4	ppm			WG590750	05/03/12 18:36
o-Terphenyl		% Rec.	79.08	50-150	WG590750	05/03/12 18:36

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.36	116.	67-135	WG590692
a,a,a-Trifluorotoluene(FID)				109.5	59-128	WG590692
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.71	104.	67-135	WG590713
a,a,a-Trifluorotoluene(FID)				95.51	59-128	WG590713
TPH (GC/FID) High Fraction	ppm	60	41.6	69.4	50-150	WG590749
o-Terphenyl				73.59	50-150	WG590749
TPH (GC/FID) High Fraction	ppm	60	40.8	68.0	50-150	WG590750
o-Terphenyl				80.07	50-150	WG590750

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.80	6.36	105.	67-135	9.33	20	WG590692
a,a,a-Trifluorotoluene(FID)				109.8	59-128			WG590692
TPH (GC/FID) Low Fraction	mg/kg	5.82	5.71	106.	67-135	1.89	20	WG590713
a,a,a-Trifluorotoluene(FID)				96.54	59-128			WG590713
TPH (GC/FID) High Fraction	ppm	44.4	41.6	74.0	50-150	6.50	25	WG590749
o-Terphenyl				76.05	50-150			WG590749

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	19.7	0	5.5	71.5	55-109	L572774-02	WG590692
a,a,a-Trifluorotoluene(FID)					100.5	59-128		WG590692
TPH (GC/FID) Low Fraction	mg/kg	20.7	0	5.5	75.3	55-109	L572774-03	WG590713
a,a,a-Trifluorotoluene(FID)					92.46	59-128		WG590713

\* 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	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
TPH (GC/FID) Low Fraction	mg/kg	18.2	19.7	66.0	55-109	7.96	20	L572774-02		WG590692
a,a,a-Trifluorotoluene(FID)				95.86	59-128					WG590692
TPH (GC/FID) Low Fraction	mg/kg	19.6	20.7	71.4	55-109	5.34	20	L572774-03		WG590713
a,a,a-Trifluorotoluene(FID)				92.03	59-128					WG590713

Batch number /Run number / Sample number cross reference

WG590692: R2154153: L572774-01 02  
WG590713: R2154173: L572774-03 04 05 06 07 08 09 10 11 12 13 14 15 16 17  
WG590749: R2155173: L572774-01 02 03 04 05 06 07 08 09  
WG590750: R2156316: L572774-10 11 12 13 14 15 16 17

\* \* Calculations are performed prior to rounding of reported values.  
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May 04, 2012

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

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

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

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



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2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Friday June 08, 2012

Report Number: L578680

Samples Received: 06/06/12

Client Project: KO4-GO9-L27

Description: KO4-GO9/L27-Pit Spoil

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

Entire Report Reviewed By:

Jayred Willis, ESC Representative

### Laboratory Certification Numbers

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

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# REPORT OF ANALYSIS

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

June 08, 2012

Date Received : June 06, 2012  
Description : KO4-GO9/L27-Pit Spoil  
Sample ID : KO4-GO9/L27-PS-C1-060512 .5-1.5 FT  
Collected By : Shad Johnson  
Collection Date : 06/05/12 13:30

ESC Sample # : L578680-01

Site ID : KO4

Project # : KO4-GO9-L27

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/06/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.1		% Rec.	602/8015	06/06/12	5
TPH (GC/FID) High Fraction	400	40.	mg/kg	3546/DRO	06/07/12	10
Surrogate recovery(%) o-Terphenyl	81.7		% Rec.	3546/DRO	06/07/12	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/08/12 08:57 Printed: 06/08/12 09:13

L578680-01 (DRO) - extracted at dilution, cannot run lower



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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

June 08, 2012

Date Received : June 06, 2012  
Description : KO4-GO9/L27-Pit Spoil  
Sample ID : KO4-GO9/L27-PS-C2-060512 .5-1.5 FT  
Collected By : Shad Johnson  
Collection Date : 06/05/12 13:40

ESC Sample # : L578680-02

Site ID : KO4

Project # : KO4-GO9-L27

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/06/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.5		% Rec.	602/8015	06/06/12	5
TPH (GC/FID) High Fraction	360	40.	mg/kg	3546/DRO	06/07/12	10
Surrogate recovery(%) o-Terphenyl	84.0		% Rec.	3546/DRO	06/07/12	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/08/12 08:57 Printed: 06/08/12 09:13

L578680-02 (DRO) - extracted at dilution, cannot run lower



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# REPORT OF ANALYSIS

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2717 County Road 215, Suite 100  
Parachute, CO 81635

June 08, 2012

Date Received : June 06, 2012  
Description : KO4-GO9/L27-Pit Spoil  
Sample ID : KO4-GO9/L27-PS-C3-060512 .5-1.5 FT  
Collected By : Shad Johnson  
Collection Date : 06/05/12 13:50

ESC Sample # : L578680-03

Site ID : KO4

Project # : KO4-GO9-L27

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/07/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	92.2		% Rec.	602/8015	06/07/12	5
TPH (GC/FID) High Fraction	310	40.	mg/kg	3546/DRO	06/07/12	10
Surrogate recovery(%) o-Terphenyl	81.5		% Rec.	3546/DRO	06/07/12	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/08/12 08:57 Printed: 06/08/12 09:13

L578680-03 (DRO) - extracted at dilution, cannot run lower



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Quality Assurance Report  
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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596399	06/06/12 15:51
a,a,a-Trifluorotoluene(FID)		% Rec.	93.28	59-128	WG596399	06/06/12 15:51
TPH (GC/FID) High Fraction	< 4	ppm			WG596486	06/07/12 11:26
o-Terphenyl		% Rec.	72.67	50-150	WG596486	06/07/12 11:26

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.43	117.	67-135	WG596399
a,a,a-Trifluorotoluene(FID)				99.09	59-128	WG596399
TPH (GC/FID) High Fraction	ppm	60	50.3	83.9	50-150	WG596486
o-Terphenyl				81.47	50-150	WG596486

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.59	6.43	120.	67-135	2.43	20	WG596399
a,a,a-Trifluorotoluene(FID)				99.75	59-128			WG596399
TPH (GC/FID) High Fraction	ppm	53.7	50.3	90.0	50-150	6.51	23	WG596486
o-Terphenyl				84.44	50-150			WG596486

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	24.8	1.10	5.5	86.4	55-109	L578672-01	WG596399
a,a,a-Trifluorotoluene(FID)					97.08	59-128		WG596399
TPH (GC/FID) High Fraction	ppm	35.4	0	60	59.0	50-150	L578481-02	WG596486
o-Terphenyl					47.98*	50-150		WG596486

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	23.5	24.8	81.6	55-109	5.46	20	L578672-01	WG596399
a,a,a-Trifluorotoluene(FID)				96.72	59-128				WG596399
TPH (GC/FID) High Fraction	ppm	37.9	35.4	63.2	50-150	6.86	25	L578481-02	WG596486
o-Terphenyl				51.35	50-150				WG596486

Batch number /Run number / Sample number cross reference

WG596399: R2200093: L578680-01 02 03  
WG596486: R2201355: L578680-01 02 03

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