



**A28 595 (Location: 335804)**  
**Pit (Facility: 425547)**  
**Encana Oil & Gas (USA) Inc. (Operator: 100185)**

#### **REPORT OF WORK COMPLETED**

- Form 27 (Doc: 2232902) (Rem: 7742)
- Form 19 (Doc: 400777124)
- Form 19 Closure (Doc: 400815017)

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Report of Work Completed and Status Update) to document pit closure efforts on a well pad in the North Parachute area of operation in Garfield County. This form also includes documentation of transfer of material from another location to this project.

Initial pit closure and characterization efforts were carried out in June, 2009. The pit was drained, and the liner and above liner solids were removed for offsite disposal. Below-liner soil conditions were 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 a cuttings stockpile was also collected for laboratory analysis with results above allowable limits for TPH and arsenic.

A track-hoe was used to remove visually stained soils from the pit bottom, and a composite sample was collected to characterize the pit bottom. This process was repeated until pit bottom clearance was achieved on November 5, 2009.

The pit excavation and impacted soil stockpiles were allowed to sit through the remainder of 2009, and through much of 2010 and 2011 to allow for natural attenuation of hydrocarbon impacts through bioremediation. During this time, and in support of operational priorities and planned development, impacted material from several other pit closure projects in the area was transported to the A28 595 location for treatment. A summary table of imported material origins, volumes, and description is provided at the end of this document.

In 2011, active remediation of the stockpiled material was carried out by laying the material out in lifts, applying fertilizer and water, and turning the stockpile on a monthly basis. Samples were collected during this time to monitor the effectiveness of remediation efforts.

In 2012, to accommodate the large volume of material and limited working surface on location, the decision to create a remediation cell to support in-situ remediation was made. The stockpiles were consolidated and clearance of the pad surface was undertaken. During pad surface clearance efforts, additional impacted material not associated with the pit closure was uncovered in the fill slope. Once surface clearance was completed, the stockpiled material on location was treated with organic amendments, fertilizer application, and water before being placed in the cut slope. The remediation cell was then capped by approximately three feet (3') of native subsoil and topsoil and seeded.

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

## **STATUS UPDATE**

After construction of the remediation cell and interim reclamation of the site was completed, an environmental contractor supervised installation of an in-situ remediation system using a track-mounted soil auger. After installation was complete, a monthly schedule was established to support visits to the site to collect operations and maintenance (O&M) readings to monitor remediation progress.

When O&M readings indicate an endpoint has been reached in the remediation cell, clearance samples will be collected to demonstrate compliance with Table 910-1 constituents of concern, and a Notification of Completion will be submitted to document successful conclusion of remediation efforts.


## **ATTACHMENTS**

1. Table – Volumes, Origins, and Description of Material Remediated Onsite
2. Topographic Location Map
3. As-built drawing of interim reclaimed location and placement of remediation cell
4. Laboratory Results Summary Table
5. Contractor report of remediation system installation and O&M readings to date
6. 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>
300	Pit spoil	Transferred from D28 595 (335822)	7751
300	Pit spoil	Transferred from G29 595 (335573)	6321
200	Pit spoil	Transferred from I30A 595 (335807)	5255





# North Parachute Ranch

Garfield County, Colorado

0

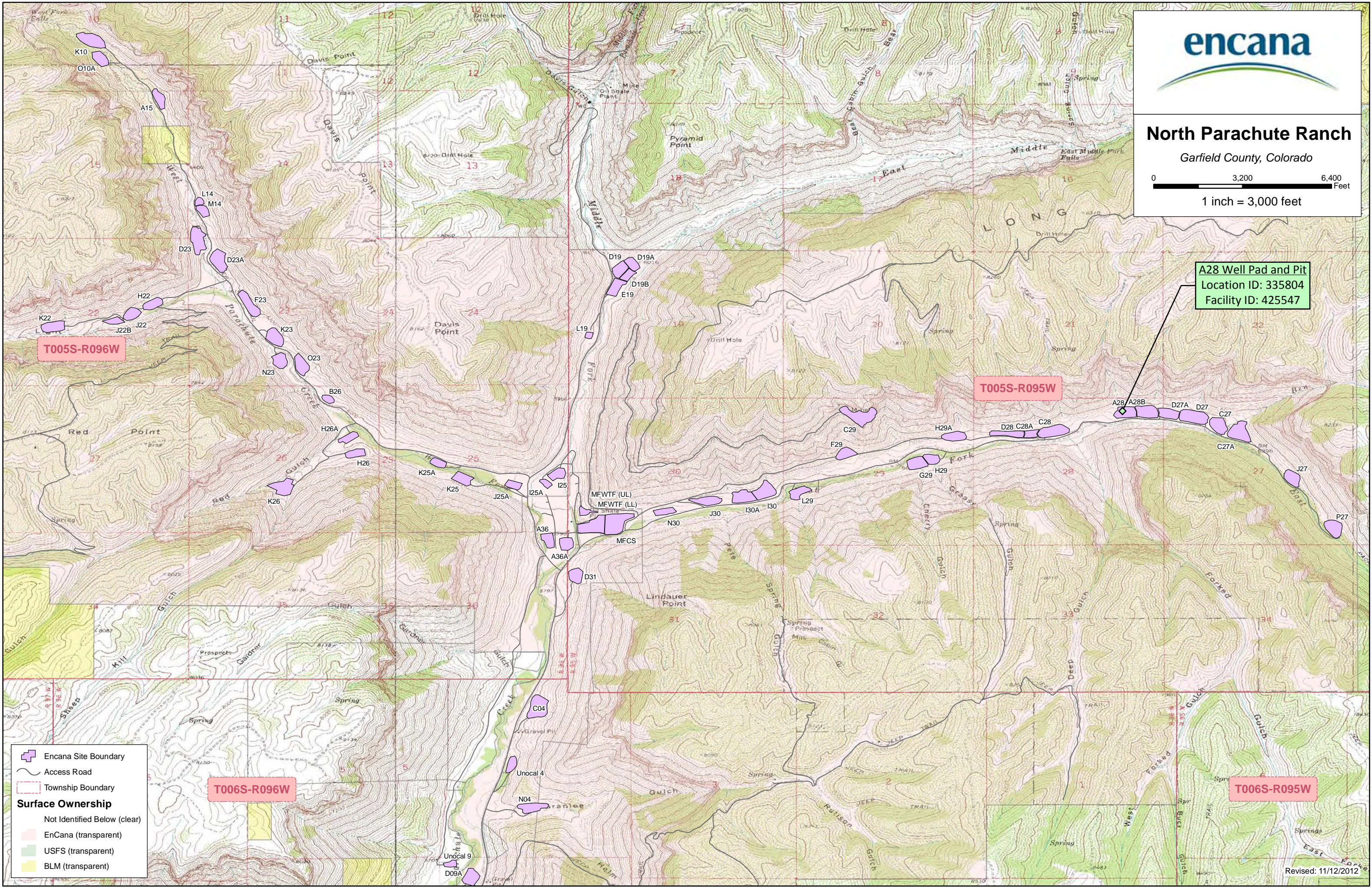
3,200

6,400

Feet

1 inch = 3,000 feet

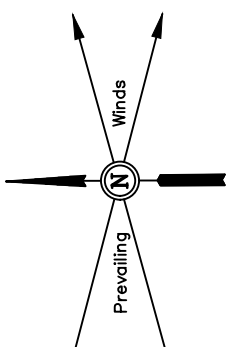
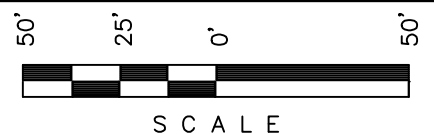
A28 Well Pad and Pit  
Location ID: 335804  
Facility ID: 425547





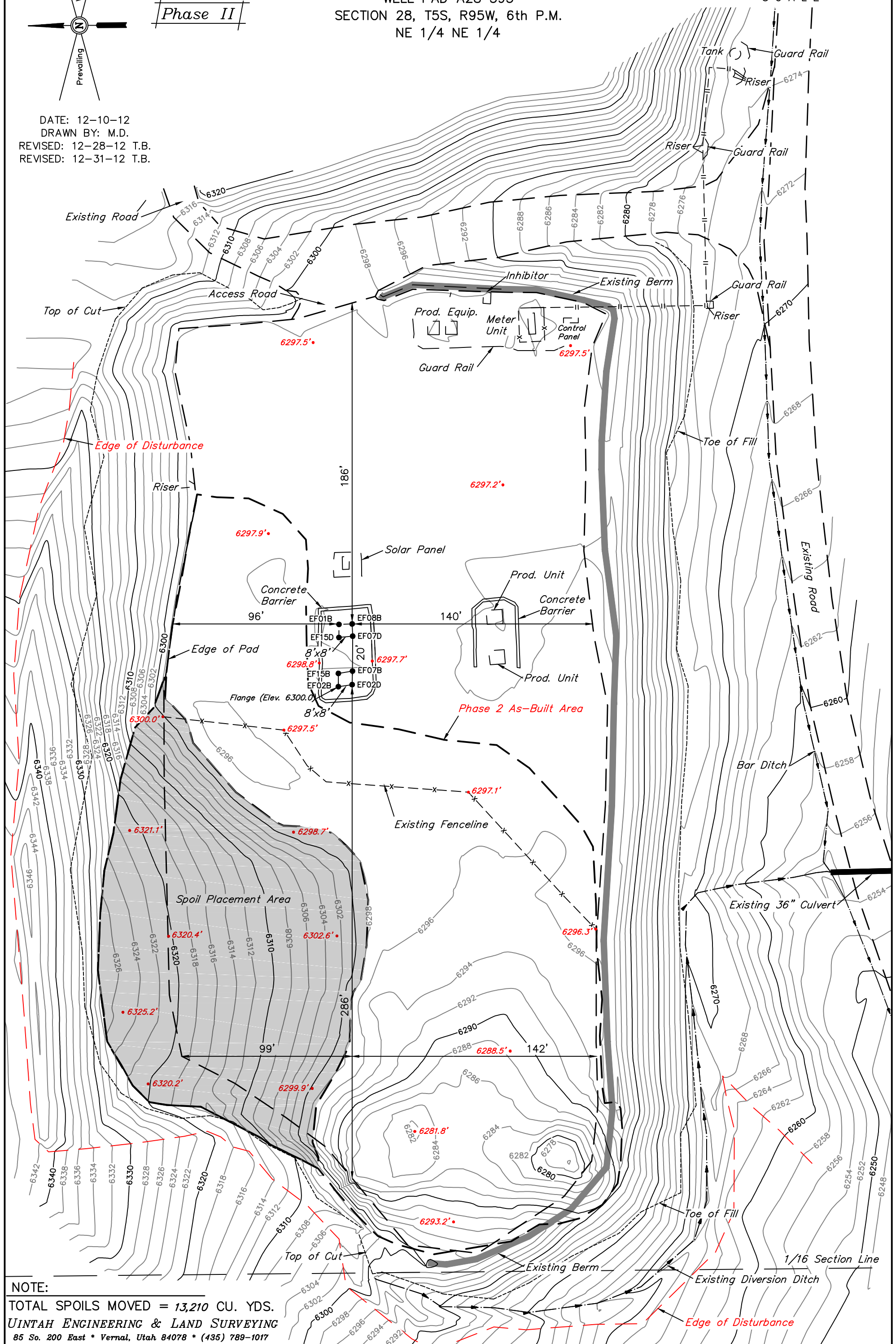
CONSTRUCTION LAYOUT FOR

NE 1/4 NE 1/4



Phase II

DATE: 12-10-12  
DRAWN BY: M.D.  
REVISED: 12-28-12 T.B.  
REVISED: 12-31-12 T.B.



NOTE:

TOTAL SPOILS MOVED = 13,210 CU. YDS.

*UINTAH ENGINEERING & LAND SURVEYING*  
85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

# Laboratory Results Summary Table

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

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																		Inorganics in Soil			Metals in Soil (mg/kg [ppm])														
Location	Sample Date:	Sample Matrix	Matrix Notes	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	
A28	06/08/09	Pit	pit spoil	15746	946	14800	0.517	3.18	0.61	14.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.36	20.5	8.4	15.6		0.57	24.9	10.1	37.7	21.2	0.17	24.4	1.2	0.065	66
A28	06/09/09	Pit	pit bottom	8990			1.05	1.29	0.295	7.03	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.14	79.2	8.9	41.9		0.7	20.7	15.1	46.3	20.7	0.0097	19.5	1.4	0.051	72.7
A28	07/14/09	Pit	pit bottom	77.996			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.66	20	8.7	24.5		0.91	10.7	16.8	30.2	16	0.035	19.3	1.1	0.26	39.8
A28	08/18/09	Cuttings		792.07			0.151	0.0049	0.0024	0.0032	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.051	0.0399	1.95	6.92	8.2	19		0.73	28.4	1.3	37.6	27.2	0.085	21.3	0.56	0.29	70.3
A28	10/21/09	Cuttings	cuttings blend with pit spoil	199.2	13.2	186	ND	ND	ND	0.0058	ND	ND	ND	ND	ND	ND	0.0054	ND	0.003	ND	ND	0.008	0.0093	1.21	5.37	8.7	18.6		0.55	26.8	0.48	38.4	26.5	0.042	22.2	0.53	0.26	64.2	
A28	10/21/09	Pit	pit bottom	793.3	7.3	786	ND	ND	ND	ND	ND	0.0014	ND	ND	ND	ND	0.0065	ND	0.005	ND	ND	0.005	0.0124	1.73	38.5	8.8	26.8		0.53	27.1	1.6	37.8	19	0.032	21.5	0.4	0.29	60.8	
A28	11/05/09	Pit	pit bottom	396.3	15.3	381					ND	ND	ND	ND	ND	ND	ND	ND	ND	0.004	ND	ND	0.009	0.0141	1.22		9.2	26.7		1	24.5	1	30.4	15.9	0.033	17.7	0.16	0.21	61.8
A28	08/26/10	Pit	pit spoil - onsite remediation	2200	100	2100	0.27	0.52	0.28	2	0.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.37	BDL	0.36	BDL	2.8	24	7.3	19	5100	0.62	27	BDL	39	18	0.11	19	BDL	BDL	64	
A28	12/01/10	Pit	Spoil being remediated onsite with	70	BDL	70	BDL	BDL	BDL	BDL																		16											
A28	05/13/11	Pit	NE pit spoil stockpile (imported from	540.66	0.66	540	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.65	13	7.9	8.2	2000	0.56	14	BDL	24	11	0.057	10	BDL	BDL	67	
A28	05/13/11	Pit	W pit spoil (on top of native fill)	1401.2	1.2	1400	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.3	12	8.4	16	4200	1	25	BDL	29	16	0.21	19	7.8	BDL	51	
A28	07/15/11	Pit	Center spoil	3908.2	8.2	3900	0.024	BDL	0.028	0.47																													
A28	07/15/11	Pit	N spoil	5080	380	4700	0.81	0.95	2	20																													
A28	07/15/11	Pit	S spoil	4711	11	4700	0.016	BDL	0.047	0.24																													
A28	07/15/11	Pit	W soil 5	2517	17	2500	0.013	BDL	0.043	0.5																													
A28	07/15/11	Pit	W spoil 11	7510	910	6600	1.5	BDL	5	47																													
A28	07/15/11	Pit	W spoil 4	3720	720	3000	0.9	BDL	3.7	31																													
A28	07/15/11	Pit	W spoil 6	1850	750	1100	0.38	1	3.3	19																													
A28	07/15/11	Pit	W spoil 9	4970	770	4200	1.2	BDL	4	32																													
A28	08/02/11	Pit	spoil 1	1300	BDL	1300	BDL	BDL	BDL	BDL																													
A28	08/02/11	Pit	spoil 10	7211	11	7200	0.0037	BDL	BDL	0.028																													
A28	08/02/11	Pit	spoil 11	3815	15	3800	0.0033	BDL	0.0028	0.043																													
A28	08/02/11	Pit	spoil 12	6810	10	6800	0.0031	BDL	BDL	0.034																													
A28	08/02/11	Pit	spoil 2	1300	BDL	1300	BDL	BDL	BDL	BDL																													
A28	08/02/11	Pit	spoil 3	1600	BDL	1600	BDL	BDL	BDL	BDL																													
A28	08/02/11	Pit	spoil 4	1600	BDL	1600	BDL	BDL	BDL	BDL																													
A28	08/02/11	Pit	spoil 5	4401.8	1.8	4400	0.0035	BDL	BDL	0.023																													
A28	08/02/11	Pit	spoil 6	960	BDL	960	BDL	BDL	BDL	BDL																													
A28	08/02/11	Pit	spoil 7	5005.4	5.4	5000	BDL	BDL	BDL	0.017	0.11	0.088	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.71	BDL	0.45	BDL	3.2	17	7.9	15	5300	BDL	28	BDL	41	18	0.32	29	9.1	BDL	75	
A28	08/02/11	Pit	spoil 8	6007.8	7.8	6000	0.0054	BDL	0.006	0.064																													
A28	08/02/11	Pit	spoil 9	6311	11	6300	0.0025	BDL	0.003	0.043																													
A28	09/13/11	Pit	spoil 1	510	BDL	510	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 10	1300	BDL	1300	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 11	2000	BDL	2000	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 12	1500	BDL	1500	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 2	320	BDL	320	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 3	340	BDL	340	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 4	150	BDL	150	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 5	280	BDL	280	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 6	220	BDL	220	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 7	670	BDL	670	BDL	BDL	BDL	BDL																													

# Laboratory Results Summary Table

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	
				500			0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		<12	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000	
A28	09/13/11	Pit	spoil 8	1600	BDL	1600	BDL	BDL	BDL	BDL																													
A28	09/13/11	Pit	spoil 9	1500	BDL	1500	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 1	280	BDL	280	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 10	680	BDL	680	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 11	560.6	0.6	560	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 12	910	BDL	910	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 7	480	BDL	480	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 8	1000	BDL	1000	BDL	BDL	BDL	BDL																													
A28	10/19/11	Pit	spoil 9	3600	BDL	3600	BDL	BDL	BDL	BDL																													
A28	05/02/12	Pit	Node 10	530	BDL	530																																	
A28	05/02/12	Pit	Node 11	530	BDL	530																																	
A28	05/02/12	Pit	Node 12	2200	BDL	2200																																	
A28	05/02/12	Pit	Node 8	730	BDL	730																																	
A28	05/02/12	Pit	Node 9	570	BDL	570																																	
A28	06/15/12	Pit	NODE 10 S	460	BDL	460	BDL	BDL	BDL	BDL																													
A28	06/15/12	Pit	NODE 11 SW	260	BDL	260	BDL	BDL	BDL	BDL																													
A28	06/15/12	Pit	NODE 12 W	670	BDL	670	BDL	BDL	BDL	BDL																													
A28	06/15/12	Pit	NODE 12 W DRO RE-RUN	790		790																																	
A28	06/15/12	Pit	NODE 8 E	400	BDL	400	BDL	BDL	BDL	BDL																													
A28	06/15/12	Pit	NODE 9 NW	350	BDL	350	BDL	BDL	BDL	BDL																													
A28	07/05/12	Pit	composite 1	120	BDL	120	BDL	BDL	BDL	BDL																													
A28	07/05/12	Pit	composite 2	110	BDL	110	BDL	BDL	BDL	BDL																													
A28	07/05/12	Pit	composite 3	200	BDL	200	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [MID] Center	1500	BDL	1500	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [MID] NE	62	BDL	62	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [MID] NW	560	BDL	560	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [MID] SE	810	BDL	810	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [MID] SW	25	BDL	25	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [NW] E	140	BDL	140	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [NW] N	75	BDL	75	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [NW] S	230	BDL	230	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [NW] Wwall	BDL	BDL	BDL	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [SW] Center	31	BDL	31	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [SW] N	BDL	BDL	BDL	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [SW] NE	30	BDL	30	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [SW] SW	19	BDL	19	BDL	BDL	BDL	BDL																													
A28	10/30/12	Pit	clearance [SW] Wwall	BDL	BDL	BDL	BDL	BDL	BDL	BDL																													
A28	11/13/12	Pit	clearance [MID] Center resample	180	BDL	180																																	
A28	11/13/12	Pit	clearance [MID] NW resample	6.1	BDL	6.1																																	
A28	11/13/12	Pit	clearance [MID] SE resample	23	BDL	23																																	



**A28 (Location ID – 335804, Facility ID - 425547)**

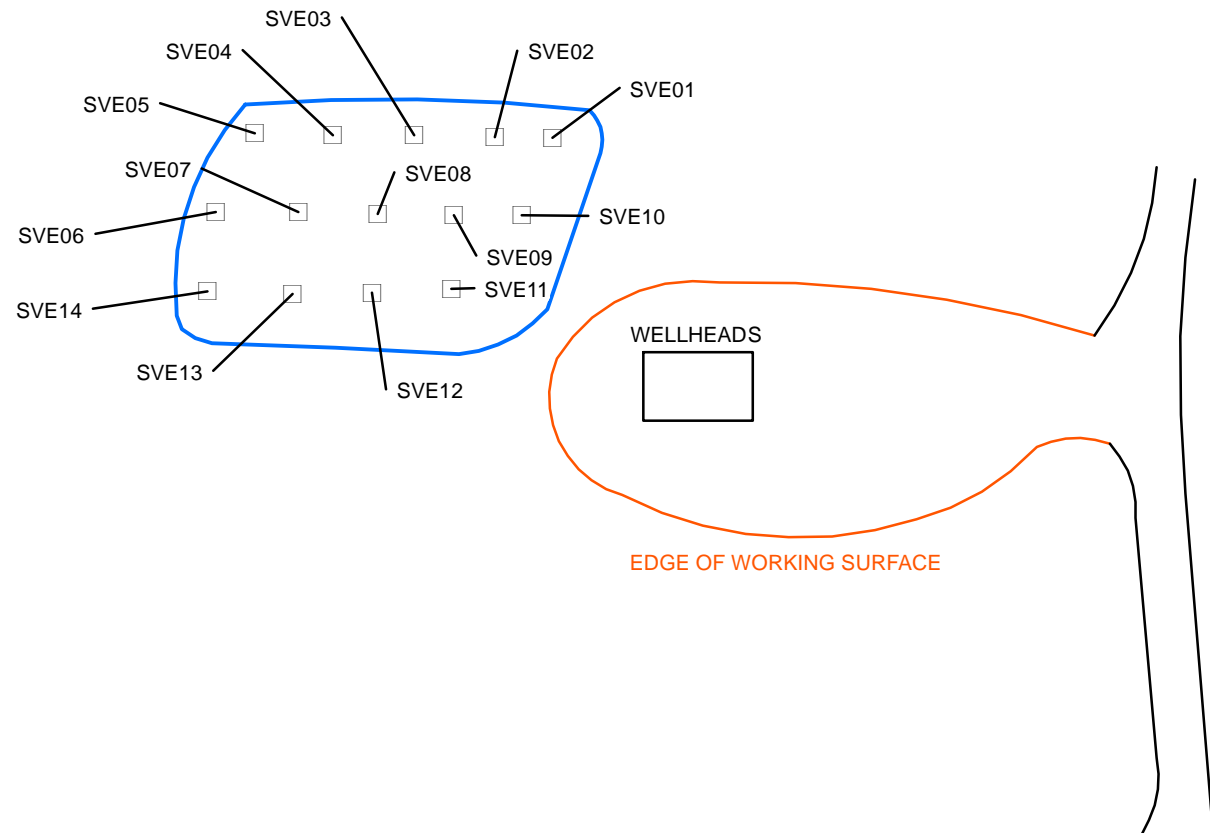
**SVE Site Background Information**

Document Date – 1/13/2014

**REPORT OF WORK COMPLETED**

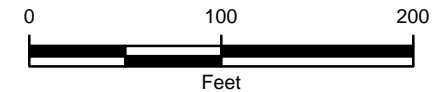
From January 21 through 29, 2013, LT Environmental Inc. (LTE) installed 14 passive soil vapor extraction (SVE) wells at depths ranging from 15 to 35 feet (ft) below ground surface (bgs) within a soil remediation cell. LTE contracted Site Services Drilling Company of Golden, Colorado, to install the soil borings using hollow stem augers for the installation of passive SVE wells.

Vent turbines were secured to top of each SVE well for the purpose of remediating residual hydrocarbon concentrations. TPH values of the soil placed in the remediation cell ranged from 510 milligrams per kilogram (mg/kg) to 15,745 mg/kg. LTE collected Observation and Monitoring (O&M) data on a monthly basis beginning May 2013.



# **LEGEND**

- ☐ PASSIVE SOIL VAPOR EXTRACTION WELL
- ☐ SOIL REMEDIATION CELL



SITE DIAGRAM  
A28 PAD  
GARFIELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.





**Encana A28 Pad**  
**Passive Soil Vapor Extraction Well Data**  
**Remediation Trending and Observations**

Subsurface soil contains a microbial population that “feeds” off organic material such as hydrocarbons. Soil vapor extraction (SVE) wells are installed to enhance and observe subsurface bio-parameters. Bio-parameters are indicators which are monitored to evaluate the subsurface environment that has been established and how active the microbial bacteria are at degrading residual organic material and hydrocarbons through the process of bio-degradation. The bio-parameters monitored for the purposes of evaluation are: oxygen, carbon dioxide, carbon monoxide, and methane. Ambient oxygen levels should be around 20.946%; however a decrease in this percentage indicates a displacement of oxygen due to another off-gas such as methane, carbon dioxide and carbon monoxide. Carbon dioxide is a direct byproduct of the microbial degradation of hydrocarbons. Carbon monoxide is generally associated with the combustion of hydrocarbons but can act as a pollutant in air and displace oxygen levels. Methane is a direct byproduct of the microbial degradation of organic material such as cellulose, fecal matter and plant fiber. In addition, a photo ionization detector (PID) was utilized to monitor gasoline range hydrocarbons and decreases over time. The following trends and observations can be made from the attached bio-parameter monitoring data:

- Data being evaluated was collected from 5/29/2013 through 12/30/2013.
- PID readings have been observed in all SVE wells and have ranged from 0 to 133 ppm.
- PID concentrations have diminished over time.
- Oxygen levels have been observed in all SVE wells ranging from 1.0 to 20.9%. All SVE wells show a persistent or continuing depletion of oxygen in the subsurface.
- Carbon dioxide is persistent at higher concentrations in all SVE wells except 11, 12, 13, and 14.
- Carbon monoxide has been observed in many of the SVE wells but not at concentrations that would displace oxygen to the degree that is more significant than carbon dioxide or methane.
- Methane has been observed in most wells but has particularly been observed at high concentrations in SVE wells 7 through 14.
- The subsurface environment appears to be highly active microbially due to the continued presence of a “food” or energy source.
- Winter months have reflected a drop in activity which is expected to rebound this Spring.
- Additional bio-parameter monitoring through this Spring should be conducted to observe the rebound in microbial activity and verify if hydrocarbon degradation continues to occur.
- Soil confirmation borings could be conducted toward late Summer if certain significant bio parameters stabilize.

**Table 1**  
**Operation and Maintenance Field Parameters**  
**A28 Well Pad**  
**Encana Oil & Gas (USA) Inc.**  
**Garfield County, Colorado**

Well ID	Date	Velocity (fpm)	Flow (cfm)	Temperature (°F)	PID (ppm)	O <sub>2</sub> (%)	H <sub>2</sub> S (ppm)	CO (ppm)	CO <sub>2</sub> (%)	CH <sub>4</sub> (%)
SVE01	5/29/2013	14.0	1.5	65.3	0.8	20.6	0.0	0.0	0.0	0.0
	6/25/2013	37.0	0.610	100.1	0.6	18.9	0.0	2.0	7.4	0.0
	7/31/2013	12.0	0.4	93.6	13.7	18.7	0.0	2.0	4.6	0.0
	8/28/2013	22.0	0.5	105.9	0.4	18.4	0.0	0.0	3.8	0.0
	9/25/2013	30.0	0.6	75.1	0.0	12.2	0.0	0.0	8.5	0.0
	10/28/2013	57.0	0.7	64.0	0.8	8.8	0.0	0.0	17.0	0.0
	11/27/2013	26.0	0.5	40.7	0.0	19.0	0.0	0.0	0.0	0.0
	12/30/2013	4.0	0.3	38.0	0.0	19.1	0.0	0.0	0.0	0.0
SVE02	5/29/2013	8.0	0.7	68.2	2.4	7.4	0.0	2.0	17.6	0.0
	6/25/2013	2.0	0.2	98.4	2.7	14.9	0.0	1.0	18.9	0.0
	7/31/2013	2.0	0.7	93.6	57.2	14.7	0.0	3.0	13.3	0.0
	8/28/2013	20.0	0.5	99.6	2.1	14.9	0.0	0.0	12.9	0.0
	9/25/2013	63.0	1.2	75.4	0.0	4.3	0.0	0.0	18.8	0.0
	10/28/2013	38.0	0.9	65.6	0.3	9.1	0.0	0.0	0.0	0.0
	11/27/2013	29.0	0.5	37.3	0.1	19.0	0.0	0.0	0.0	0.0
	12/30/2013	3.0	0.0	55.1	0.0	19.3	0.0	0.0	0.0	0.0
SVE03	5/29/2013	9.0	0.4	78.3	12.2	7.1	0.0	3.0	17.3	5.0
	6/25/2013	127.0	0.0	94.8	4.4	13.9	0.0	1.0	>20.0	0.0
	7/31/2013	7.0	0.3	92.8	98.6	13.6	0.0	2.0	15.1	0.0
	8/28/2013	40.0	1.1	98.6	2.1	13.1	0.0	0.0	15.9	0.0
	9/25/2013	25.0	0.8	78.3	0.7	8.4	0.0	0.0	>20.0	0.0
	10/28/2013	54.0	0.8	65.5	0.6	5.3	0.0	0.0	19.8	3.0
	11/27/2013	38.0	0.6	40.7	0.0	18.9	0.0	0.0	0.0	0.0
	12/30/2013	1.0	0.1	38.3	0.0	19.0	0.0	0.0	0.0	0.0
SVE04	5/29/2013	4.0	0.7	76.4	3.9	6.7	0.0	4.0	15.6	89.0
	6/25/2013	91.0	1.8	92.1	12.5	7.4	0.0	3.0	>20.0	9.0
	7/31/2013	3.0	0.1	91.3	8.9	12.5	0.0	2.0	16.6	0.0
	8/28/2013	68.0	1.5	94.6	10.3	6.9	0.0	1.0	>20.0	5.0
	9/25/2013	25.0	0.9	77.2	4.7	1.4	0.0	1.0	>20.0	0.0
	10/28/2013	37.0	1.1	65.4	3.3	9.1	0.0	0.0	>20.0	0.0
	11/27/2013	42.0	0.1	42.8	0.0	18.6	0.0	0.0	0.3	1.0
	12/30/2013	1.0	0.0	40.5	0.0	19.0	0.0	0.0	0.0	0.0
SVE05	5/29/2013	87.0	1.6	65.3	0.6	10.9	0.0	1.0	10.4	1.0
	6/25/2013	32.0	0.6	91.8	0.6	14.8	0.0	3.0	15.8	0.0
	7/31/2013	3.0	0.0	96.1	19.7	13.4	0.0	3.0	14.7	0.0
	8/28/2013	50.0	1.0	98.5	0.5	13.6	0.0	1.0	13.4	2.0
	9/25/2013	58.0	1.0	79.7	0.6	9.0	0.0	0.0	17.2	1.0
	10/28/2013	43.0	1.2	65.3	0.1	20.9	0.0	0.0	19.2	0.0
	11/27/2013	61.0	0.8	42.5	0.0	18.9	0.0	0.0	0.0	0.0
	12/30/2013	1.0	0.0	38.2	0.0	19.4	0.0	3.0	0.0	0.0
SVE06	5/29/2013	22.0	0.5	72.9	2.9	7.7	0.0	1.0	12.2	26.0
	6/25/2013	33.0	1.2	93.1	1.8	20.7	0.0	0.0	0.0	0.0
	7/31/2013	1.0	0.0	99.1	11.7	12.7	0.0	3.0	>20.0	3.0
	8/28/2013	7.0	0.1	101.4	2.3	8.4	0.0	0.0	>20.0	24.0
	9/25/2013	18.0	0.5	81.7	0.2	2.7	0.0	0.0	>20.0	27.0
	10/28/2013	42.0	0.8	65.7	0.7	12.2	0.0	0.0	0.7	7.0
	11/27/2013	38.0	0.7	42.3	0.0	19.2	0.0	0.0	0.0	0.0
	12/30/2013	1.0	0.1	45.0	0.0	18.9	0.0	3.0	0.0	0.0



**Table 1**  
**Operation and Maintenance Field Parameters**  
**A28 Well Pad**  
**Encana Oil & Gas (USA) Inc.**  
**Garfield County, Colorado**

Well ID	Date	Velocity (fpm)	Flow (cfm)	Temperature (°F)	PID (ppm)	O <sub>2</sub> (%)	H <sub>2</sub> S (ppm)	CO (ppm)	CO <sub>2</sub> (%)	CH <sub>4</sub> (%)
SVE07	5/29/2013	8.0	0.1	73.6	18.9	11.6	8.0	6.0	12.8	>100
	6/25/2013	200.0	7.1	93.5	15.3	14.2	4.0	1.0	15.6	>100
	7/31/2013	37.0	0.7	97.3	23.7	11.2	1.0	1.0	>20.0	>100
	8/28/2013	35.0	1.0	99.0	24.3	9.6	6.0	4.0	>20.0	>100
	9/25/2013	53.0	1.5	84.5	18.6	3.2	4.0	0.0	>20.0	>100
	10/28/2013	25.0	0.5	65.5	15.5	11.9	8.0	0.0	5.6	>100
	11/27/2013	28.0	0.7	43.8	16.8	12.1	2.0	0.0	14.8	>100
	12/30/2013	0.0	0.0	41.5	0.0	17.2	0.0	0.0	0.0	0.0
SVE08	5/29/2013	30.0	0.8	76.3	14.3	13.0	3.0	2.0	9.9	>100
	6/25/2013	32.0	0.1	90.1	13.4	7.3	3.0	3.0	>20.0	>100
	7/31/2013	4.0	0.2	96.3	25.0	11.3	1.0	1.0	>20.0	>100
	8/28/2013	2.0	0.0	98.7	12.1	8.0	6.0	4.0	>20	89.0
	9/25/2013	27.0	0.8	80.7	15.2	1.0	1.0	0.0	>20.0	>100
	10/28/2013	3.0	0.2	69.9	6.3	7.2	3.0	0.0	7.8	>100
	11/27/2013	23.0	0.4	42.1	4.8	13.6	0.0	0.0	9.9	>100
	12/30/2013	1.0	0.0	45.4	0.0	15.3	0.0	0.0	0.0	0.0
SVE09	5/29/2013	7.0	0.5	72.0	33.5	10.9	8.0	7.0	11.5	>100
	6/25/2013	21.0	0.9	91.7	62.0	8.1	4.0	5.0	>20.0	29.0
	7/31/2013	22.0	0.7	96.1	133.0	10.3	5.0	1.0	>20.0	>100
	8/28/2013	13.0	0.3	100.1	55.9	9.1	8.0	7.0	>20	>100
	9/25/2013	144.0	2.9	78.8	36.7	4.8	7.0	1.0	>20.0	>100
	10/28/2013	30.0	0.3	76.3	15.7	5.5	5.0	0.0	>20.0	>100
	11/27/2013	10.0	0.2	45.0	0.1	19.0	0.0	0.0	0.0	0.0
	12/30/2013	2.0	0.0	38.8	0.0	18.9	0.0	0.0	0.0	0.0
SVE10	5/29/2013	49.0	2.2	65.8	19.3	19.7	7.0	4.0	0.5	>100
	6/25/2013	23.0	0.5	93.5	28.3	11.1	6.0	3.0	>20.0	>100
	7/31/2013	1.0	0.4	95.7	77.4	12.3	6.0	2.0	>20.0	>100
	8/28/2013	43.0	1.1	99.8	31.8	8.2	7.0	5.0	>20	>100
	9/25/2013	64.0	1.5	77.9	28.9	9.2	6.0	0.0	>20.0	>100
	10/28/2013	33.0	0.5	67.6	19.0	13.3	38.0	0.0	18.4	>100
	11/27/2013	22.0	0.6	44.9	9.6	13.4	2.0	6.0	12.8	>100
	12/30/2013	1.0	0.0	46.4	0.0	13.3	0.0	2.0	0.0	0.0
SVE11	5/29/2013	19.0	0.7	57.9	3.8	18.6	0.0	4.0	2.1	>100
	6/25/2013	0.0	0.0	90.4	2.8	18.4	0.0	0.0	3.8	>100
	7/31/2013	1.0	0.0	97.1	3.5	18.5	0.0	3.0	2.4	>100
	8/28/2013	27.0	0.5	97.4	2.1	17.8	0.0	4.0	6.0	>100
	9/25/2013	29.0	0.5	75.1	4.1	18.2	0.0	0.0	3.8	>100
	10/28/2013	30.0	0.6	64.7	5.1	19.9	0.0	3.0	1.8	>100
	11/27/2013	9.0	0.3	45.8	4.5	18.9	0.0	0.0	0.0	0.0
	12/30/2013	1.0	0.0	38.6	0.0	20.1	0.0	2.0	0.0	0.0
SVE12	5/29/2013	15.0	0.5	59.9	19.1	15.8	0.0	0.0	6.2	>100
	6/25/2013	26.0	0.1	93.8	18.9	13.4	3.0	4.0	14.2	>100
	7/31/2013	7.0	0.4	97.4	20.0	14.5	4.0	7.0	11.9	>100
	8/28/2013	29.0	0.7	98.1	19.3	13.8	6.0	3.0	14.4	>100
	9/25/2013	27.0	0.5	78.4	20.8	12.4	4.0	1.0	11.1	>100
	10/28/2013	14.0	0.5	68.6	16.4	13.3	1.0	0.0	4.6	>100
	11/27/2013	8.0	0.2	43.8	2.5	17.9	0.0	3.0	1.2	22.0
	12/30/2013	1.0	0.0	48.6	13.0	14.3	0.0	0.0	2.7	>100

**Table 1**  
**Operation and Maintenance Field Parameters**  
**A28 Well Pad**  
**Encana Oil & Gas (USA) Inc.**  
**Garfield County, Colorado**

Well ID	Date	Velocity (fpm)	Flow (cfm)	Temperature (°F)	PID (ppm)	O <sub>2</sub> (%)	H <sub>2</sub> S (ppm)	CO (ppm)	CO <sub>2</sub> (%)	CH <sub>4</sub> (%)
SVE13	5/29/2013	24.0	0.5	60.5	21.5	18.1	0.0	4.0	2.7	>100
	6/25/2013	30.0	0.5	94.3	13.4	18.0	0.0	1.0	3.2	>100
	7/31/2013	32.0	0.5	95.2	12.9	18.1	0.0	3.0	2.8	>100
	8/28/2013	24.0	0.5	98.2	7.1	18.1	2.0	0.0	2.6	>100
	9/25/2013	30.0	0.7	82.2	9.0	18.4	0.0	0.0	1.8	>100
	10/28/2013	20.0	0.4	65.0	5.9	19.9	0.0	0.0	1.9	>100
	11/27/2013	38.0	0.9	47.8	17.5	16.7	4.0	5.0	7.8	>100
	12/30/2013	1.0	0.0	43.5	0.6	17.3	0.0	4.0	0.0	0.0
SVE14	5/29/2013	1.0	0.0	60.1	13.6	18.7	0.0	3.0	1.7	42.0
	6/25/2013	58.0	3.7	93.8	24.8	18.2	0.0	0.0	3.4	52.0
	7/31/2013	14.0	0.5	97.9	24.4	17.7	0.0	3.0	3.9	77.0
	8/28/2013	3.0	0.0	97.9	24.7	17.3	0.0	2.0	3.7	72.0
	9/25/2013	110.0	2.1	79.1	31.1	16.4	0.0	0.0	6.4	>100
	10/28/2013	44.0	0.8	63.9	10.8	19.9	0.0	0.0	0.0	82.0
	11/27/2013	33.0	0.5	43.7	0.7	18.7	0.0	0.0	0.1	>100
	12/30/2013	2.0	0.1	50.4	0.4	19.8	0.0	0.0	0.0	0.0

Notes:

fpm - feet per minute

cfm - cubic feet per minute

PID - photoionization detector

ppm - parts per million

O<sub>2</sub> - oxygen

H<sub>2</sub>S - hydrogen sulfide

CO - carbon monoxide

CO<sub>2</sub> - carbon dioxide

CH<sub>4</sub> - methane

°F - degrees fahrenheit

> - greater than

mg/kg - milligrams per kilogram

TPH - total petroleum hydrocarbons

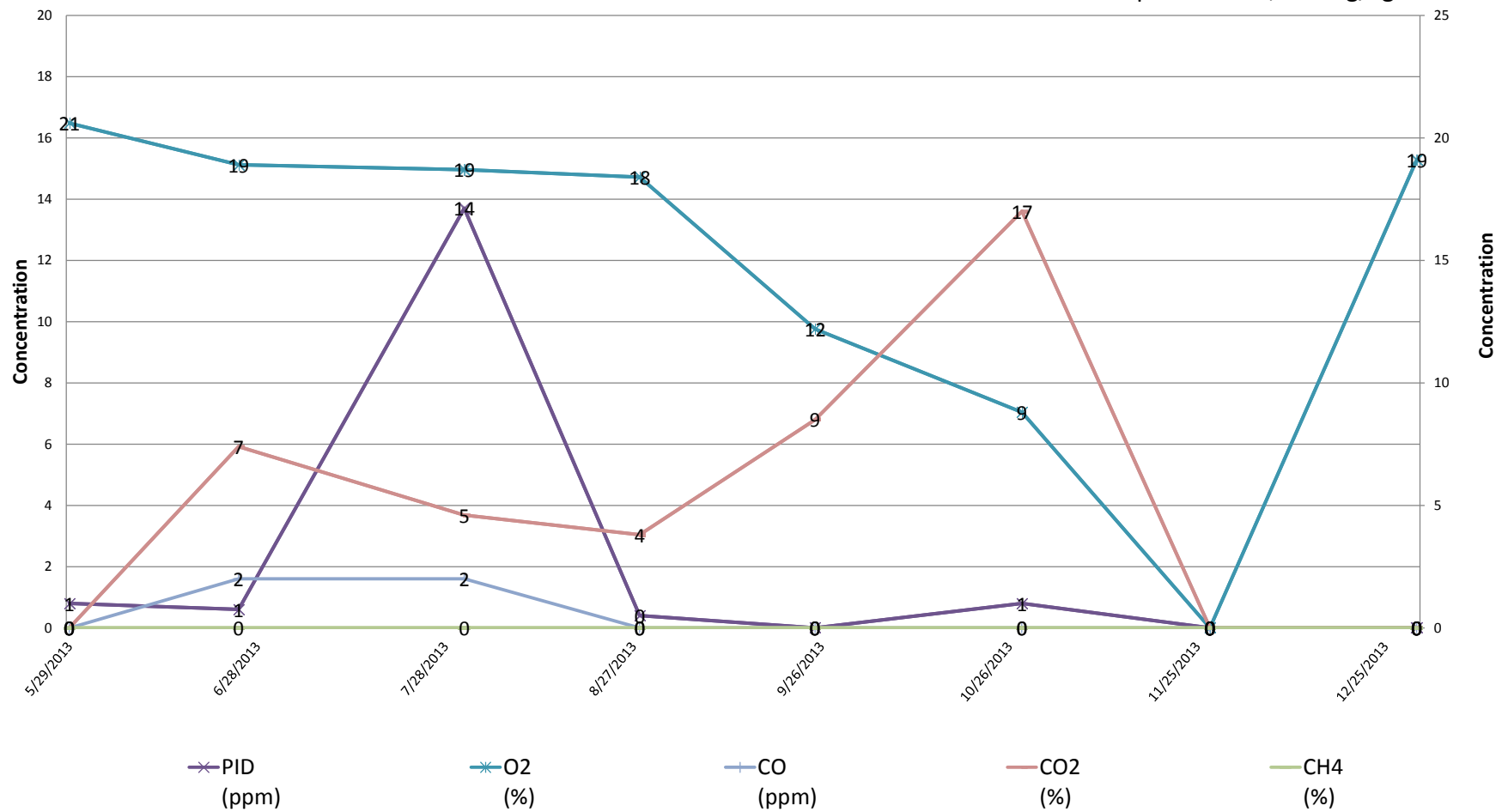
Range of Spoil Samples exceeding the COGCC TPH standard of 500 mg/kg

Sample ID	Date	TPH (mg/kg)
pit spoil	6/8/2009	15,746
spoil 1	9/13/2011	510



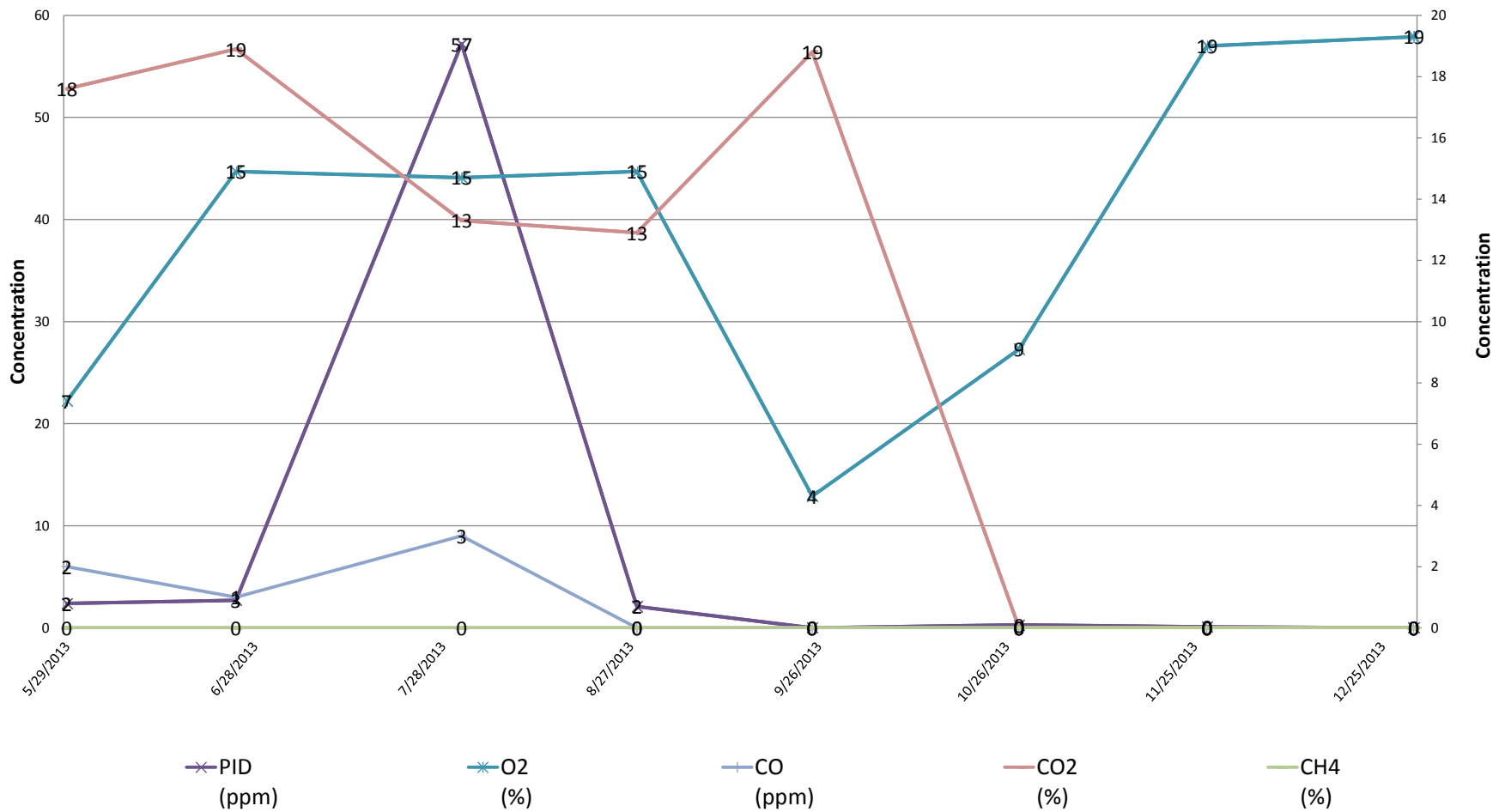
Encana A28 Pad  
SVE01

Pit Spoil TPH: 15,746 mg/kg



Encana A28 Pad  
SVE02

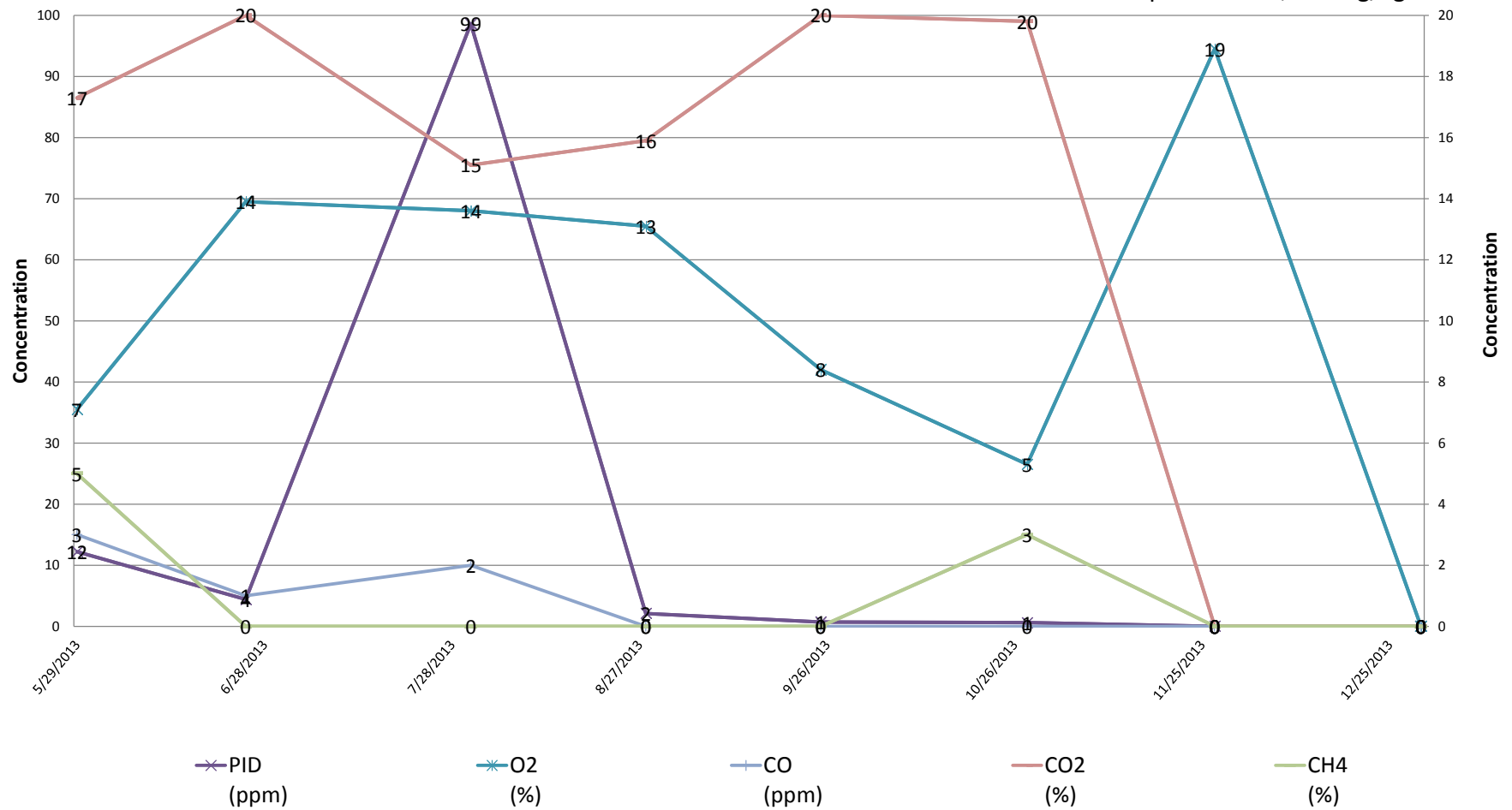
Pit Spoil TPH: 15,746 mg/kg





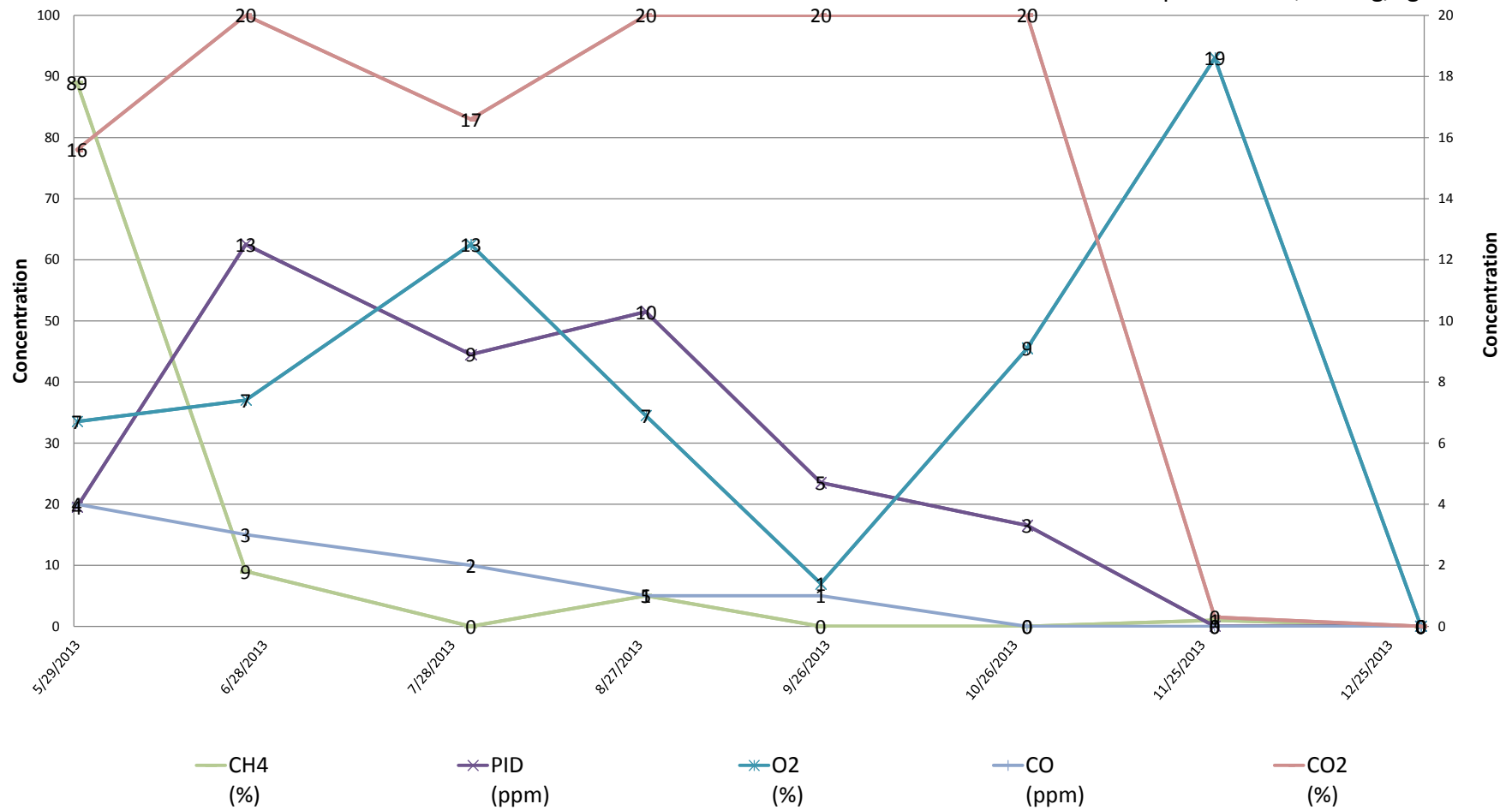
Encana A28 Pad  
SVE03

Pit Spoil TPH: 15,746 mg/kg



Encana A28 Pad  
SVE04

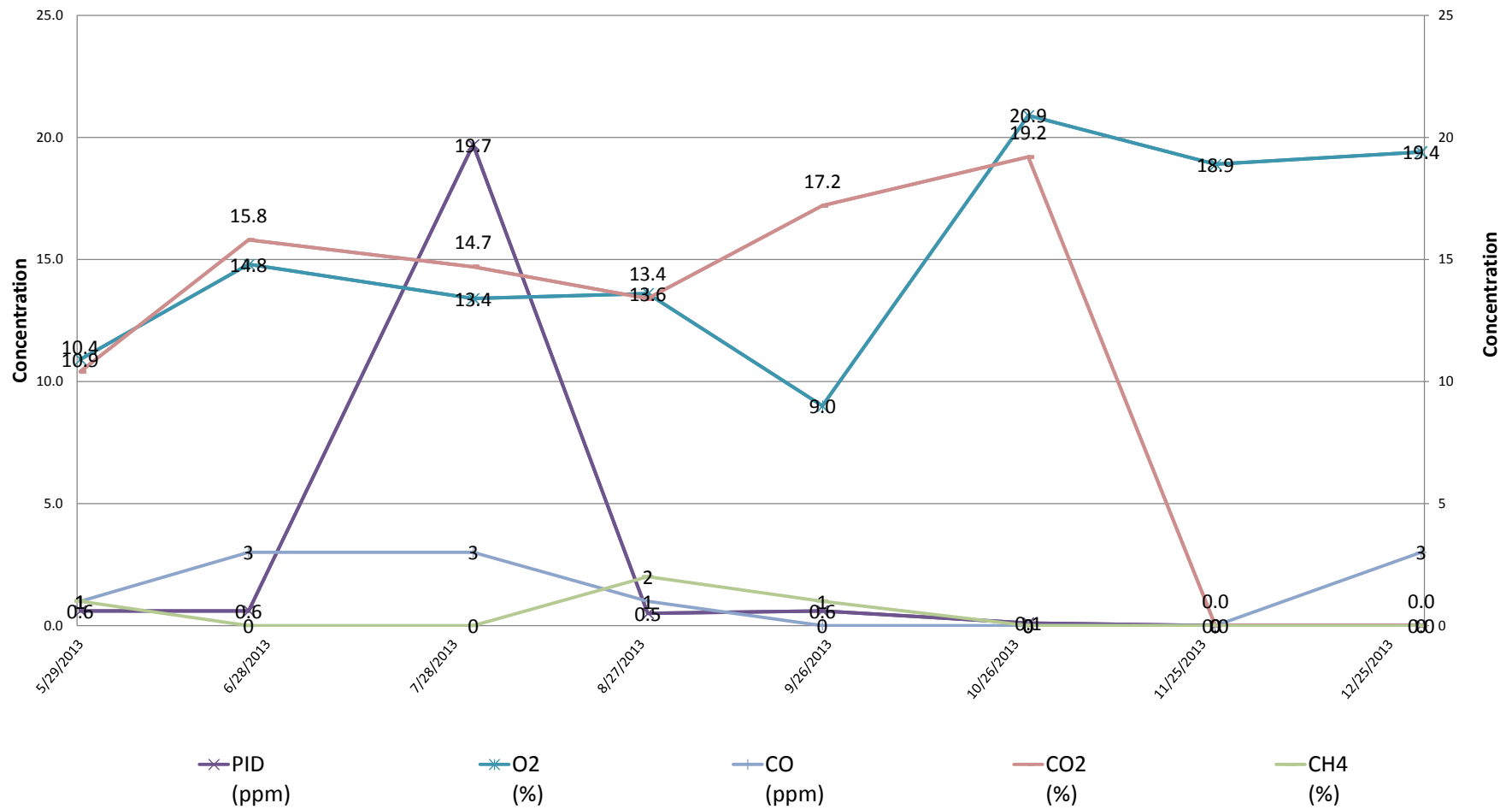
Pit Spoil TPH: 15,746 mg/kg





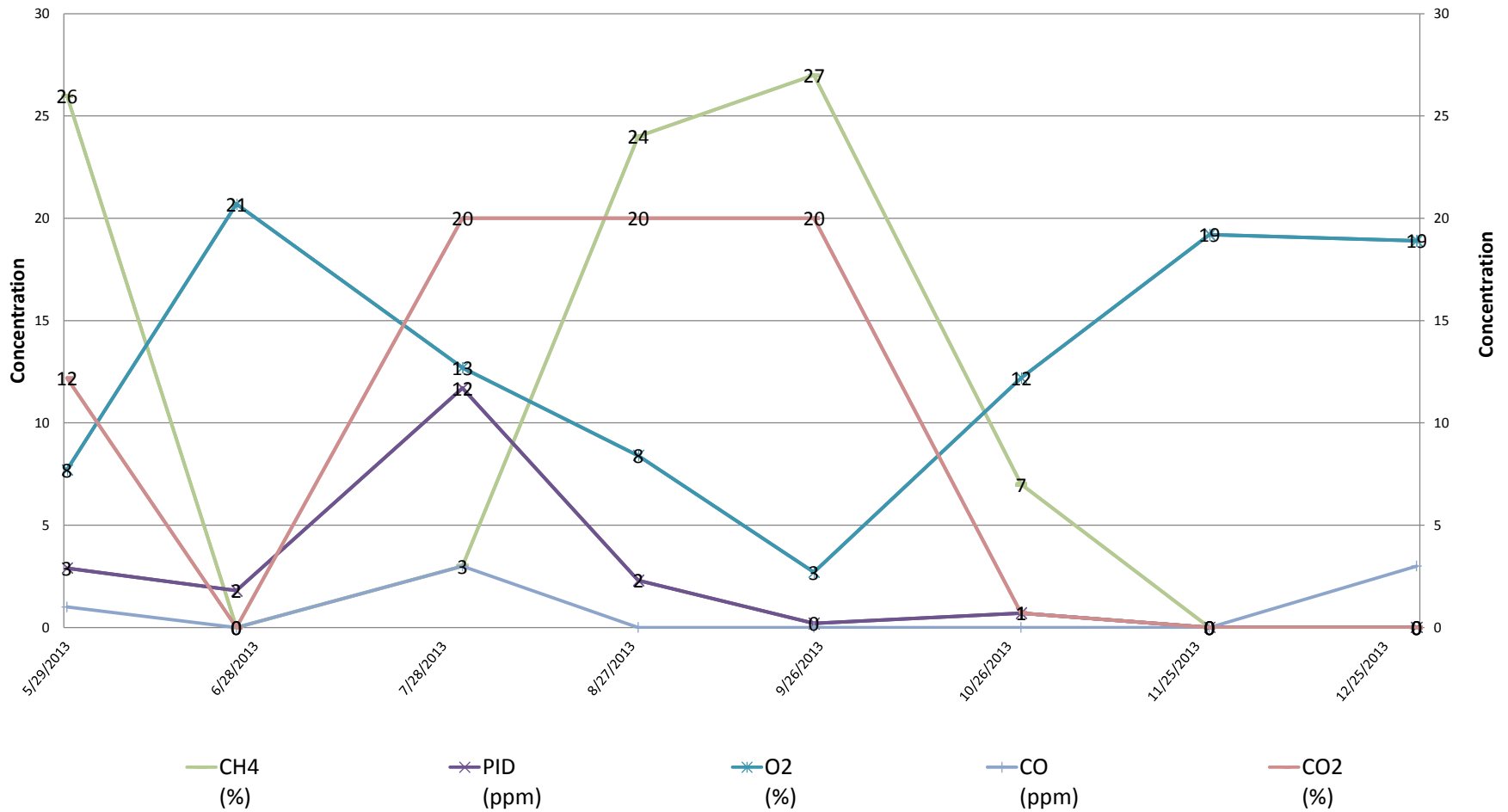
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SVE05

Pit Spoil TPH: 15,746 mg/kg



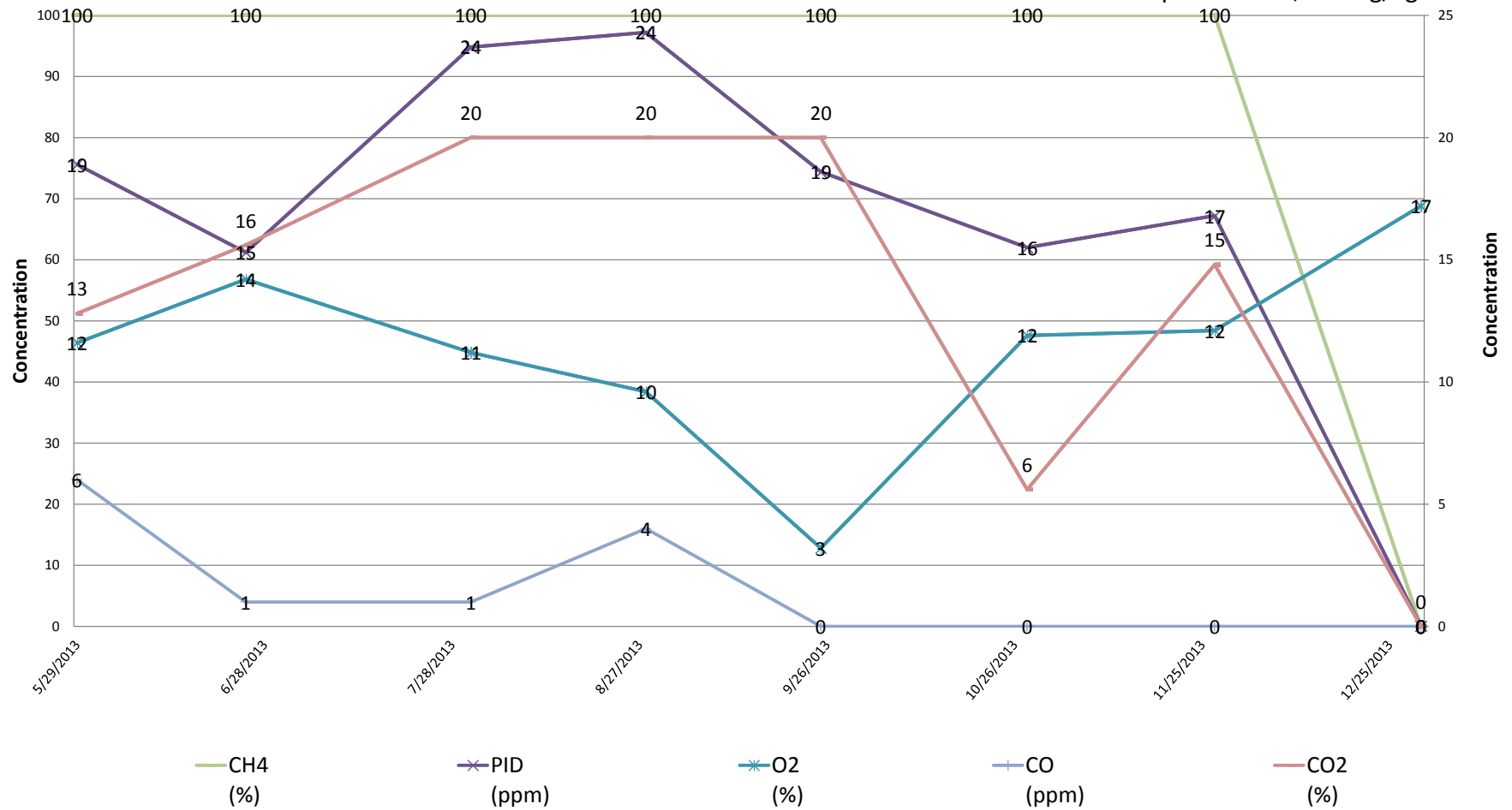
Encana A28 Pad  
SVE06

Pit Spoil TPH: 15,746 mg/kg



# Encana A28 Pad SVE07

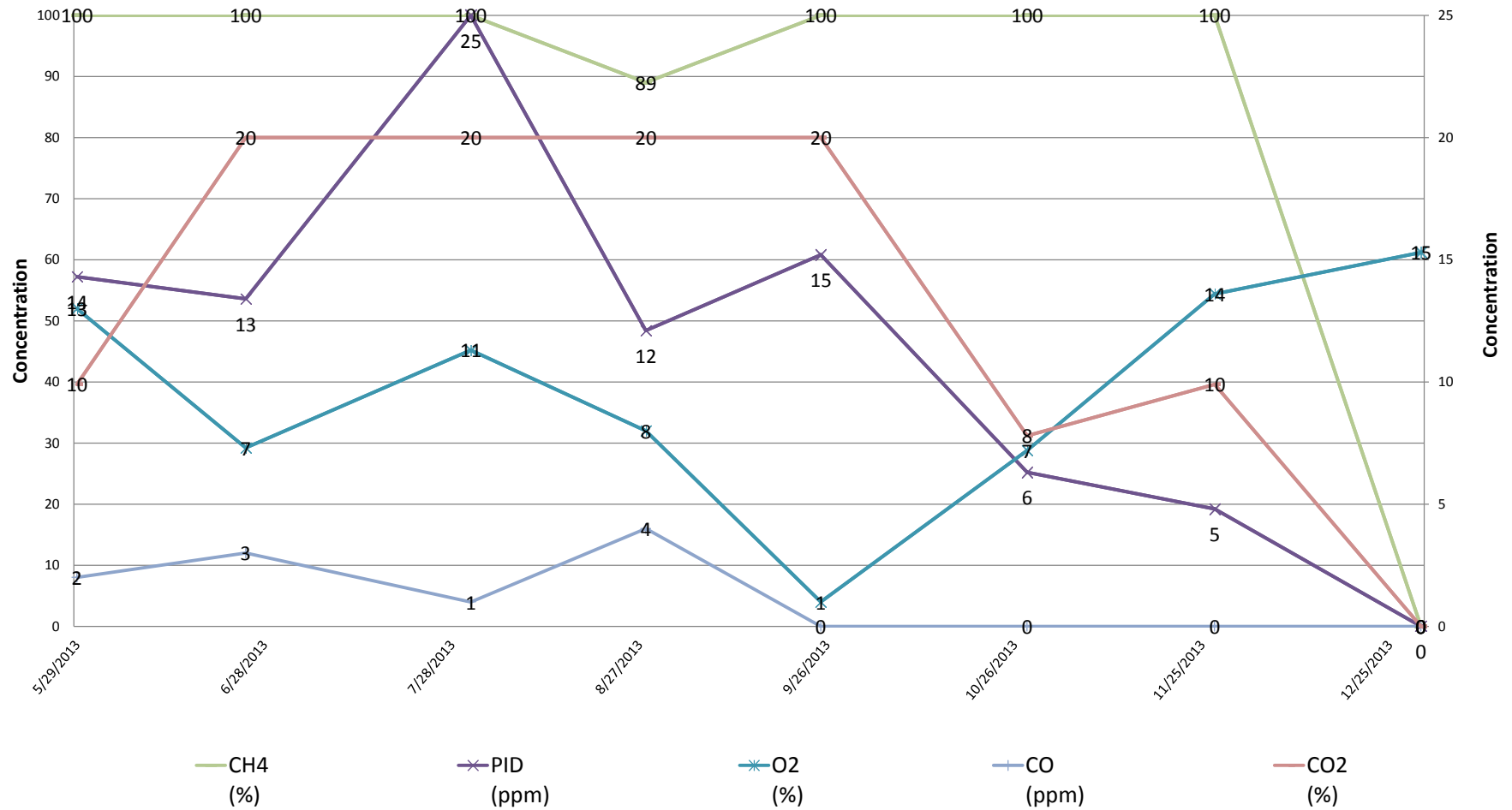
Pit Spoil TPH: 15,746 mg/kg





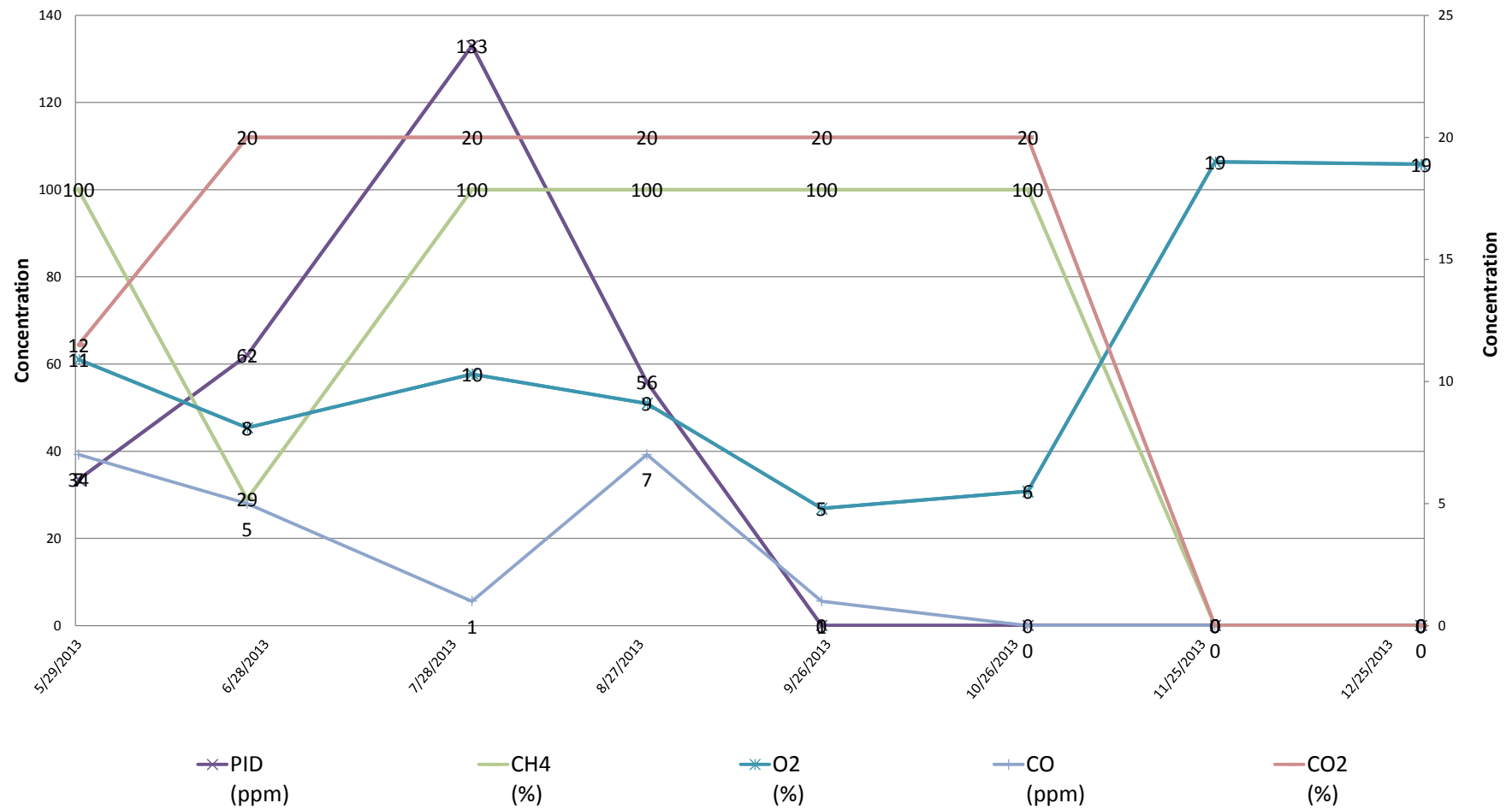
Encana A28 Pad  
SVE08

Pit Spoil TPH: 15,746 mg/kg



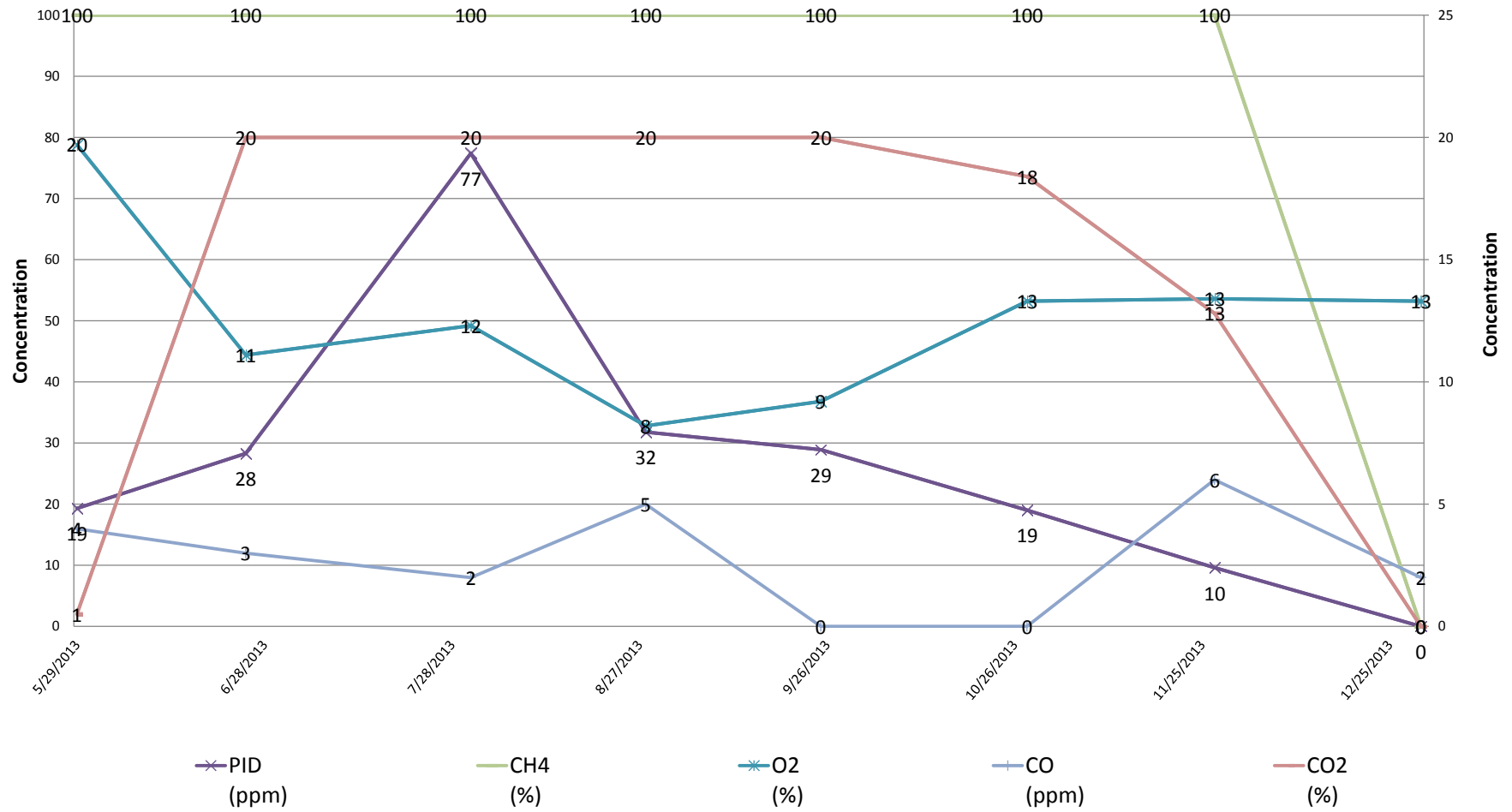
Encana A28 Pad  
SVE09

Pit Spoil TPH: 15,746 mg/kg



Encana A28 Pad  
SVE10

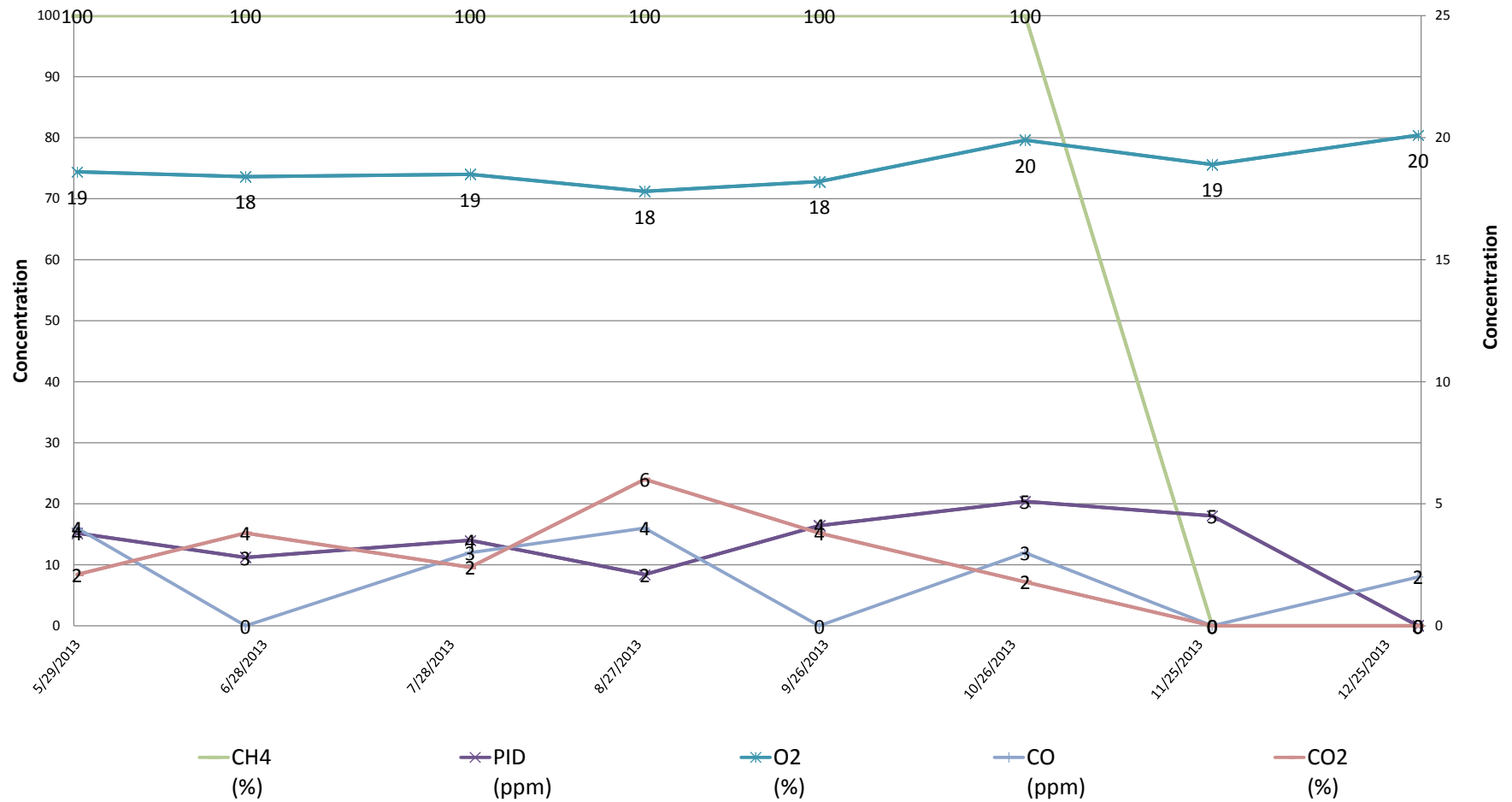
Pit Spoil TPH: 15,746 mg/kg





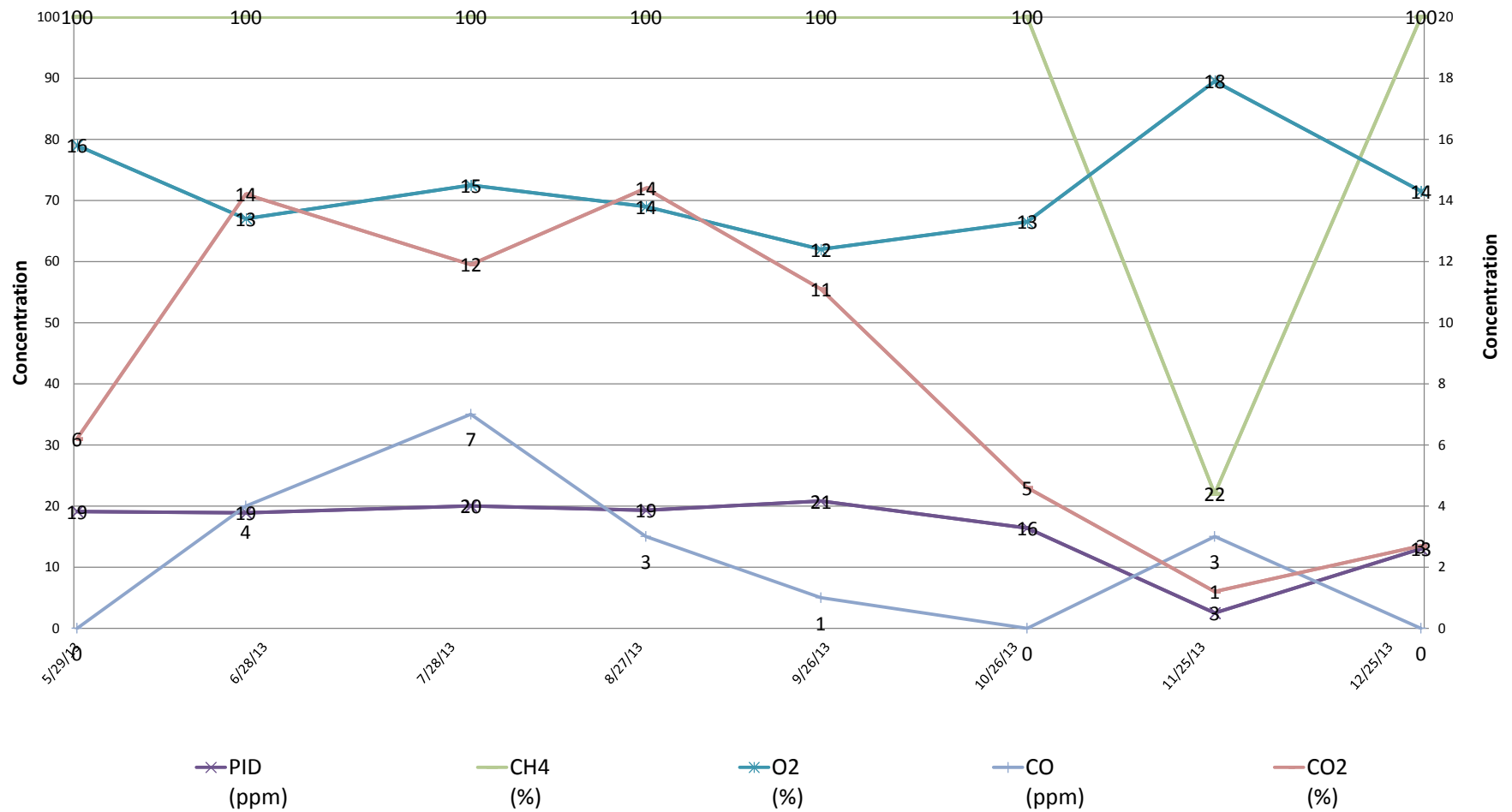
# Encana A28 Pad SVE11

Pit Spoil TPH: 15,746 mg/kg



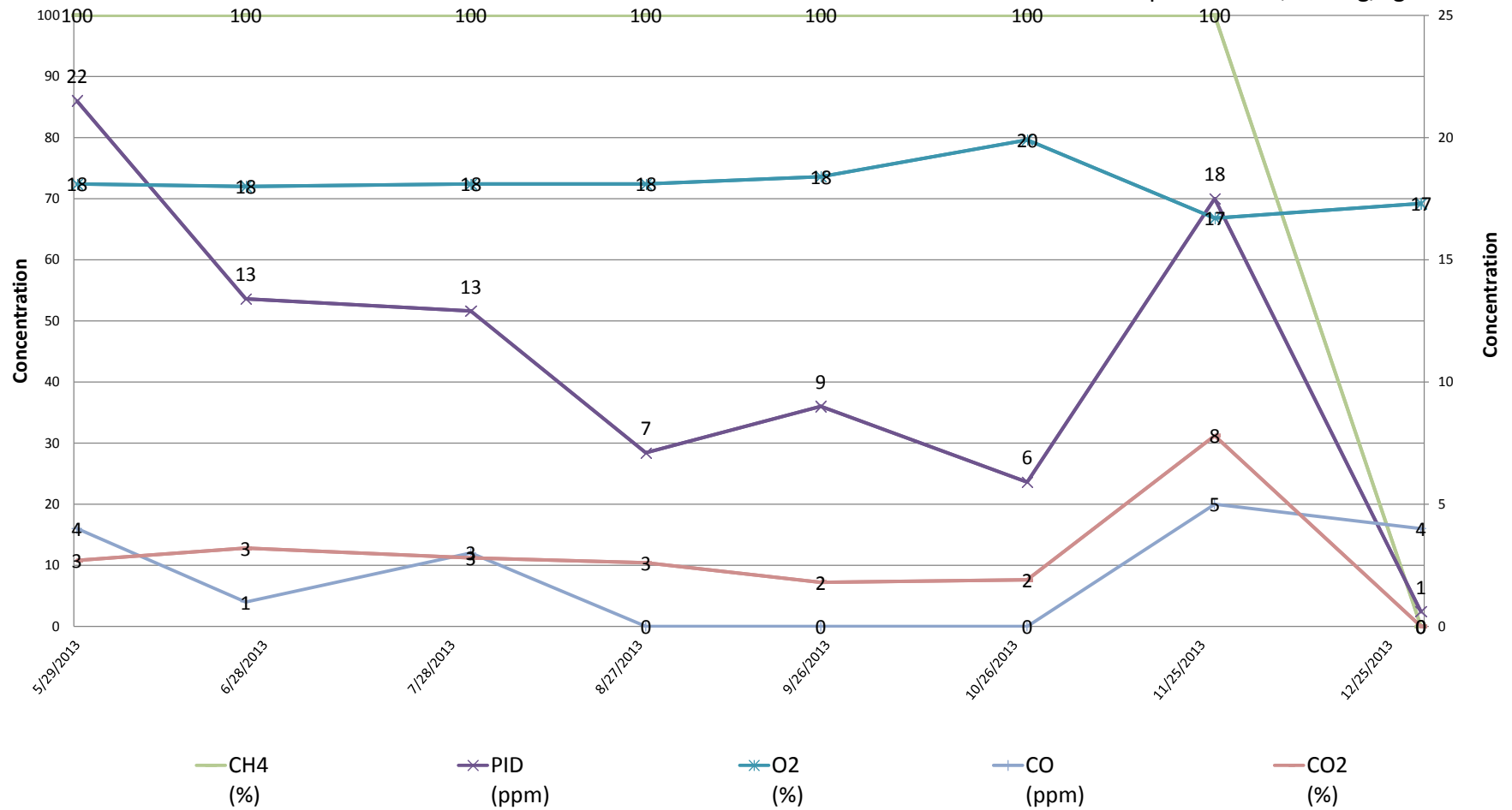
# Encana A28 Pad SVE12

Pit Spoil TPH: 15,746 mg/kg



# Encana A28 Pad SVE13

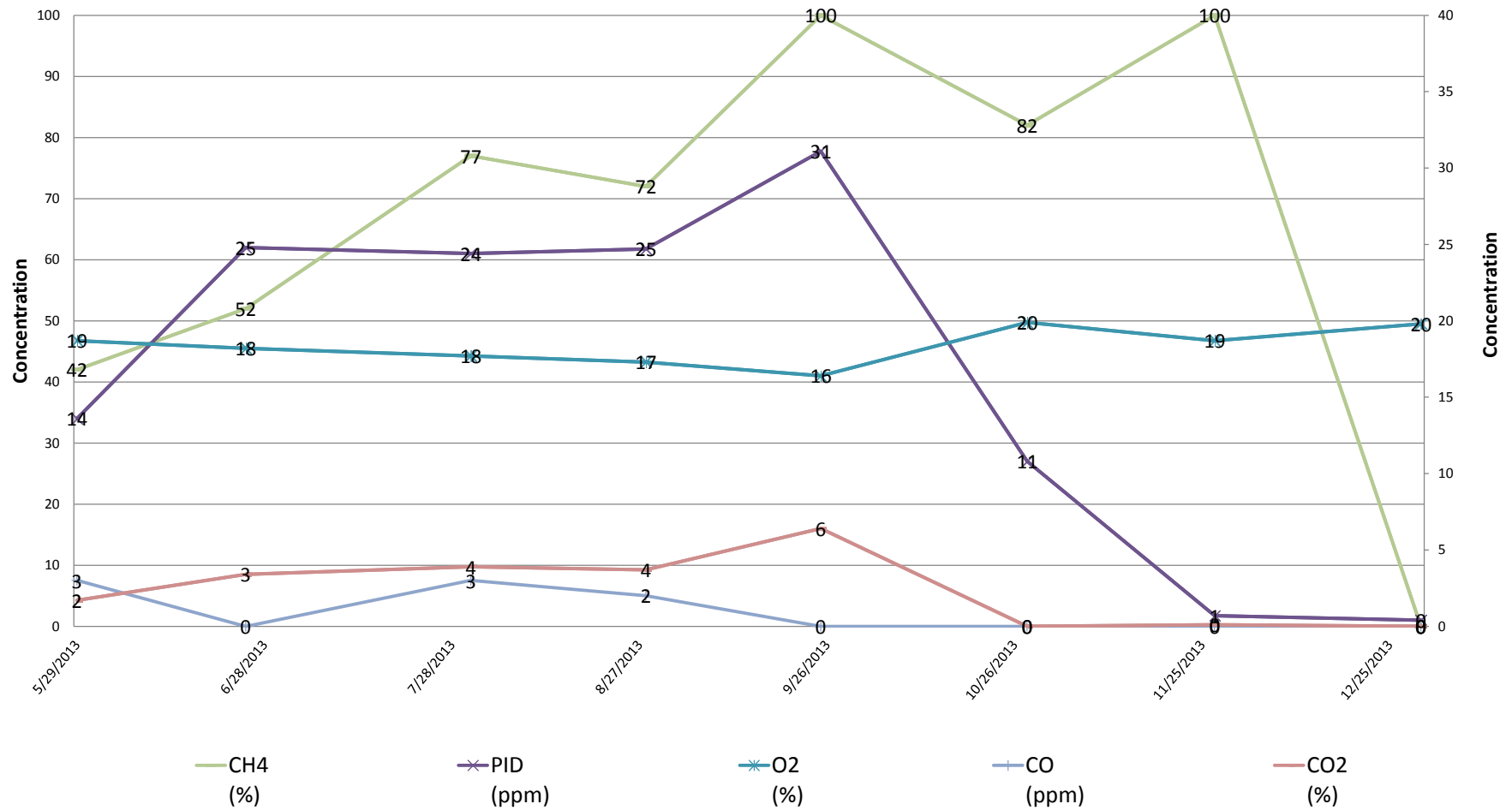
Pit Spoil TPH: 15,746 mg/kg





# Encana A28 Pad SVE14

Pit Spoil TPH: 15,746 mg/kg





06/18/09

## Technical Report for

**EnCana**

**Site Clearance**

**A28/Parachute, CO/09124442 8720.382**

**Accutest Job Number: T30811**

**Sampling Dates: 06/08/09 - 06/09/09**

### Report to:

**EnCana  
2717 Co. Rd. 215  
Parachute, CO 81635  
brett.middleton@encana.com**

**ATTN: Brett Middleton**

**Total number of pages in report: 63**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

**Paul Canevaro  
Laboratory Director**

**Client Service contact: Sylvia Garza 713-271-4700**

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Sample Results .....</b>	<b>4</b>
<b>2.1:</b> T30811-1: A28-PIT SPOIL .....	5
<b>2.2:</b> T30811-1A: A28-PIT SPOIL .....	11
<b>2.3:</b> T30811-1B: A28-PIT SPOIL .....	12
<b>2.4:</b> T30811-2: A28-PIT BOTTOM .....	13
<b>2.5:</b> T30811-2A: A28-PIT BOTTOM .....	19
<b>2.6:</b> T30811-2B: A28-PIT BOTTOM .....	20
<b>Section 3: Misc. Forms .....</b>	<b>21</b>
<b>3.1:</b> Chain of Custody .....	22
<b>Section 4: GC/MS Volatiles - QC Data Summaries .....</b>	<b>25</b>
<b>4.1:</b> Method Blank Summary .....	26
<b>4.2:</b> Blank Spike Summary .....	27
<b>4.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	28
<b>Section 5: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>29</b>
<b>5.1:</b> Method Blank Summary .....	30
<b>5.2:</b> Blank Spike Summary .....	31
<b>5.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	32
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>33</b>
<b>6.1:</b> Method Blank Summary .....	34
<b>6.2:</b> Blank Spike/Blank Spike Duplicate Summary .....	35
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>36</b>
<b>7.1:</b> Method Blank Summary .....	37
<b>7.2:</b> Blank Spike Summary .....	38
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	39
<b>Section 8: Metals Analysis - QC Data Summaries .....</b>	<b>40</b>
<b>8.1:</b> Prep QC MP9680: As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn .....	41
<b>8.2:</b> Prep QC MP9681: Hg .....	46
<b>8.3:</b> Prep QC MP9697: B .....	50
<b>8.4:</b> Prep QC MP9698: Ba .....	55
<b>Section 9: General Chemistry - QC Data Summaries .....</b>	<b>60</b>
<b>9.1:</b> Method Blank and Spike Results Summary .....	61
<b>9.2:</b> Duplicate Results Summary .....	62
<b>9.3:</b> Matrix Spike Results Summary .....	63





Sample Summary

EnCana

Job No: T30811

Site Clearance

Project No: A28/Parachute, CO/09124442 8720.382

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T30811-1	06/08/09	08:00 CH	06/10/09	SO	Soil	A28-PIT SPOIL
T30811-1A	06/08/09	08:00 CH	06/10/09	AQ	Water Extract	A28-PIT SPOIL
T30811-1B	06/08/09	08:00 CH	06/10/09	SO	Soil	A28-PIT SPOIL
T30811-2	06/09/09	15:10 CH	06/10/09	SO	Soil	A28-PIT BOTTOM
T30811-2A	06/09/09	15:10 CH	06/10/09	AQ	Water Extract	A28-PIT BOTTOM
T30811-2B	06/09/09	15:10 CH	06/10/09	SO	Soil	A28-PIT BOTTOM

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL	<b>Date Sampled:</b>	06/08/09
<b>Lab Sample ID:</b>	T30811-1	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Site Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0017960.D	1	06/15/09	OM	n/a	n/a	VM730
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	517	340	94	ug/kg	
108-88-3	Toluene	3180	340	85	ug/kg	
100-41-4	Ethylbenzene	610	340	85	ug/kg	
1330-20-7	Xylene (total)	14400	1000	250	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-121%
2037-26-5	Toluene-D8	107%		76-132%
460-00-4	4-Bromofluorobenzene	104%		73-165%
17060-07-0	1,2-Dichloroethane-D4	87%		57-122%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: A28-PIT SPOIL

Lab Sample ID: T30811-1

Date Sampled: 06/08/09

Matrix: SO - Soil

Date Received: 06/10/09

Method: SW846 8270C SW846 3550B

Percent Solids: 84.9

Project: Site Clearance

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	P04240.D	10	06/16/09	GJ	06/12/09	OP12245	EP210
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	2000	540	ug/kg	
208-96-8	Acenaphthylene	ND	2000	460	ug/kg	
120-12-7	Anthracene	ND	2000	380	ug/kg	
56-55-3	Benzo(a)anthracene	ND	2000	750	ug/kg	
50-32-8	Benzo(a)pyrene	ND	2000	310	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	2000	480	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	2000	460	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	2000	370	ug/kg	
218-01-9	Chrysene	ND	2000	430	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	2000	1000	ug/kg	
206-44-0	Fluoranthene	ND	2000	400	ug/kg	
86-73-7	Fluorene	ND	2000	530	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	2000	700	ug/kg	
90-12-0	1-Methylnaphthalene	941	2000	460	ug/kg	J
91-57-6	2-Methylnaphthalene	1370	2000	620	ug/kg	J
91-20-3	Naphthalene	ND	2000	390	ug/kg	
85-01-8	Phenanthrene	939	2000	530	ug/kg	J
129-00-0	Pyrene	ND	2000	380	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		26-124%
4165-62-2	Phenol-d5	59%		19-106%
118-79-6	2,4,6-Tribromophenol	50%		18-129%
4165-60-0	Nitrobenzene-d5	70%		18-104%
321-60-8	2-Fluorobiphenyl	80%		21-114%
1718-51-0	Terphenyl-d14	81%		24-149%

(a) Dilution required due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



# Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL	<b>Date Sampled:</b>	06/08/09
<b>Lab Sample ID:</b>	T30811-1	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Method:</b>	SW846 8015		
<b>Project:</b>	Site Clearance		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE044866.D	40	06/12/09	FI	n/a	n/a	GEE2277
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	946	270	19	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	92%		46-127%
98-08-8	aaa-Trifluorotoluene	65%		44-120%

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL		
<b>Lab Sample ID:</b>	T30811-1	<b>Date Sampled:</b>	06/08/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	06/10/09
<b>Method:</b>	SW846 8015 M SW846 3550B	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC213590.D	100	06/15/09	FO	06/12/09	OP12246	GCC915
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	14800	970	320	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% <sup>a</sup>		33-115%		

(a) Outside control limits due to dilution.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: A28-PIT SPOIL

Lab Sample ID: T30811-1

Matrix: SO - Soil

Project: Site Clearance

Date Sampled: 06/08/09

Date Received: 06/10/09

Percent Solids: 84.9

## SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	15.6	0.65	0.13	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Cadmium	0.57	0.32	0.065	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Chromium	35.0	3.2	0.23	mg/kg	5	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Copper	37.7	1.6	0.084	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Lead	21.2	3.2	1.3	mg/kg	5	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Mercury	0.17	0.018	0.00069	mg/kg	1	06/12/09	06/12/09 AE	SW846 7471A <sup>1</sup>	SW846 7471A <sup>4</sup>
Nickel	24.4	2.6	0.084	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Selenium	1.2	0.65	0.16	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Silver	0.065 B	0.65	0.052	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Zinc	66.0	1.3	0.26	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4115

(2) Instrument QC Batch: MA4117

(3) Prep QC Batch: MP9680

(4) Prep QC Batch: MP9681

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL	<b>Date Sampled:</b>	06/08/09
<b>Lab Sample ID:</b>	T30811-1	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	10.1	2.0	mg/kg	1	06/16/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	24.9	5.2	mg/kg	1	06/16/09 12:00	KD	SW846 6010/7196A M
Sodium Adsorption Ratio	20.5	0.40	ratio	1	06/17/09	TW	LADNR29B
Solids, Percent	84.9		%	1	06/11/09	SS	SM 2540B M
Specific Conductivity	1360	1.0	umhos/cm	1	06/16/09 14:00	KD	EPA 120.1
pH	8.4		su	1	06/17/09 16:15	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL	<b>Date Sampled:</b>	06/08/09
<b>Lab Sample ID:</b>	T30811-1A	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	2190	200	4.2	ug/l	1	06/15/09	06/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4121

(2) Prep QC Batch: MP9697

(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



Report of Analysis

<b>Client Sample ID:</b>	A28-PIT SPOIL	<b>Date Sampled:</b>	06/08/09
<b>Lab Sample ID:</b>	T30811-1B	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium <sup>a</sup>	9870	290	0.88	mg/kg	25	06/13/09	06/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

- (1) Instrument QC Batch: MA4121  
(2) Prep QC Batch: MP9698  
  
(a) Prep by LA DNR 29 B

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM	<b>Date Sampled:</b>	06/09/09
<b>Lab Sample ID:</b>	T30811-2	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Site Clearance		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0017961.D	1	06/15/09	OM	n/a	n/a	VM730
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.43 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1050	320	88	ug/kg	
108-88-3	Toluene	1290	320	80	ug/kg	
100-41-4	Ethylbenzene	295	320	80	ug/kg	J
1330-20-7	Xylene (total)	7030	950	240	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		70-121%
2037-26-5	Toluene-D8	109%		76-132%
460-00-4	4-Bromofluorobenzene	106%		73-165%
17060-07-0	1,2-Dichloroethane-D4	71%		57-122%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28-PIT BOTTOM  
**Lab Sample ID:** T30811-2  
**Matrix:** SO - Soil  
**Method:** SW846 8270C SW846 3550B  
**Project:** Site Clearance

**Date Sampled:** 06/09/09  
**Date Received:** 06/10/09  
**Percent Solids:** 84.9

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	P04262.D	10	06/16/09	GJ	06/12/09	OP12245	EP211
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	1900	530	ug/kg	
208-96-8	Acenaphthylene	ND	1900	450	ug/kg	
120-12-7	Anthracene	ND	1900	370	ug/kg	
56-55-3	Benzo(a)anthracene	ND	1900	740	ug/kg	
50-32-8	Benzo(a)pyrene	ND	1900	300	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	1900	470	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	1900	450	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	1900	360	ug/kg	
218-01-9	Chrysene	ND	1900	420	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	1900	1000	ug/kg	
206-44-0	Fluoranthene	ND	1900	400	ug/kg	
86-73-7	Fluorene	ND	1900	520	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1900	690	ug/kg	
90-12-0	1-Methylnaphthalene	469	1900	450	ug/kg	J
91-57-6	2-Methylnaphthalene	793	1900	610	ug/kg	J
91-20-3	Naphthalene	ND	1900	380	ug/kg	
85-01-8	Phenanthrene	ND	1900	520	ug/kg	
129-00-0	Pyrene	ND	1900	370	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	53%		26-124%
4165-62-2	Phenol-d5	70%		19-106%
118-79-6	2,4,6-Tribromophenol	60%		18-129%
4165-60-0	Nitrobenzene-d5	84%		18-104%
321-60-8	2-Fluorobiphenyl	63%		21-114%
1718-51-0	Terphenyl-d14	100%		24-149%

(a) Dilution required due to matrix interference.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	A28-PIT BOTTOM	
<b>Lab Sample ID:</b>	T30811-2	<b>Date Sampled:</b> 06/09/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 06/10/09
<b>Method:</b>	SW846 8015	<b>Percent Solids:</b> 84.9
<b>Project:</b>	Site Clearance	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE044867.D	20	06/12/09	FI	n/a	n/a	GEE2277
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.43 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	510	130	8.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		46-127%
98-08-8	aaa-Trifluorotoluene	65%		44-120%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM			<b>Date Sampled:</b>	06/09/09
<b>Lab Sample ID:</b>	T30811-2			<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	84.9
<b>Method:</b>	SW846 8015 M SW846 3550B				
<b>Project:</b>	Site Clearance				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC213591.D	100	06/15/09	FO	06/12/09	OP12246	GCC915
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	8480	960	320	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% <sup>a</sup>		33-115%		

(a) Outside control limits due to dilution.

ND = Not detected

MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID: A28-PIT BOTTOM

Lab Sample ID: T30811-2

Matrix: SO - Soil

Project: Site Clearance

Date Sampled: 06/09/09

Date Received: 06/10/09

Percent Solids: 84.9

## SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	41.9	0.63	0.13	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Cadmium	0.70	0.32	0.063	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Chromium	35.8	3.2	0.22	mg/kg	5	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Copper	46.3	1.6	0.082	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Lead	20.7	3.2	1.3	mg/kg	5	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Mercury	0.0097 B	0.019	0.00074	mg/kg	1	06/12/09	06/12/09 AE	SW846 7471A <sup>1</sup>	SW846 7471A <sup>4</sup>
Nickel	19.5	2.5	0.082	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Selenium	1.4	0.63	0.15	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Silver	0.051 U	0.63	0.051	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Zinc	72.7	1.3	0.25	mg/kg	1	06/12/09	06/14/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4115

(2) Instrument QC Batch: MA4117

(3) Prep QC Batch: MP9680

(4) Prep QC Batch: MP9681

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM	<b>Date Sampled:</b>	06/09/09
<b>Lab Sample ID:</b>	T30811-2	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	15.1	2.0	mg/kg	1	06/16/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	20.7	5.2	mg/kg	1	06/16/09 12:00	KD	SW846 6010/7196A M
Sodium Adsorption Ratio	79.2	0.40	ratio	1	06/17/09	TW	LADNR29B
Solids, Percent	84.9		%	1	06/11/09	SS	SM 2540B M
Specific Conductivity	2140	1.0	umhos/cm	1	06/16/09 14:00	KD	EPA 120.1
pH	8.9		su	1	06/17/09 16:15	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM	<b>Date Sampled:</b>	06/09/09
<b>Lab Sample ID:</b>	T30811-2A	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	3610	200	4.2	ug/l	1	06/15/09	06/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4121

(2) Prep QC Batch: MP9697

(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM	<b>Date Sampled:</b>	06/09/09
<b>Lab Sample ID:</b>	T30811-2B	<b>Date Received:</b>	06/10/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.9
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium <sup>a</sup>	512	59	0.18	mg/kg	5	06/13/09	06/16/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

- (1) Instrument QC Batch: MA4121  
(2) Prep QC Batch: MP9698  
  
(a) Prep by LA DNR 29 B

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Misc. Forms

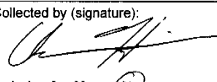
### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody


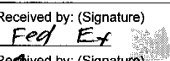
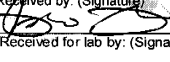
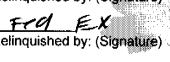
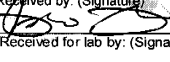


<b>Encana</b> 2717 Co. Rd. 215 Parachute, CO 81635				Alternate billing information:				Analysis/Container/Preservative												Chain of Custody Page <u>1</u> of <u>1</u>			
				Report to:																Prepared by:  <b>ENVIRONMENTAL SCIENCE CORP.</b> 12065 Lebanon Road Mt. Juliet, TN 37122  Phone (615) 758-5858 Phone (800) 767-5859 FAX (615) 758-5859  <b>T30811</b>			
				Email to: Brett.Middleton@encana.com																			
Project Description: Site Clearance				City/State Collected: Parachute, CO				See attached												CoCode ENCRCO (lab use only) Template/Prelogin  Shipped Via:			
Phone: 970.285.2739 FAX: 970.285.2705				Client Project #: 09124442 8720.382 ESC Key:																			
Collected by: Chris Hines				Site/Facility ID#: A28																			
Collected by (signature):  Packed on Ice: <u>N</u> <u>Y</u>				Date Results Needed: <input checked="" type="checkbox"/> Same Day ..... 200% <input type="checkbox"/> Next Day ..... 100% <input type="checkbox"/> Two Day ..... 50% Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes																			
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs													Remarks/Contaminant	Sample # (lab only)		
A28 - Pit Spoil		Comp	SS	NA	6/8/09	0800	1	X	NA														
A28 - Pit Bottom		Comp	SS	NA	6/9/09	1510	1	X	NA														

\*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other \_\_\_\_\_ pH \_\_\_\_\_ Temp 4.6

Remarks:

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

Relinquished by: (Signature) 	Date: 6/9/09	Time: 1600	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier		Condition: (lab use only)	
	Date:	Time:	Received by: (Signature) 	Temp: 4.6	Bottles Received:		
Relinquished by: (Signature) 	Date:	Time:	Received for lab by: (Signature) 	Date: 6/9/09	Time: 0930	pH Checked:	NCF:

**T30811: Chain of Custody**

**Page 1 of 3**

## 3.1 3

**Individual forms management**

23 of 63  
 **ACCUTEST.**  
 T30811 Laboratories

3.1 3





## GC/MS Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T30811  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM730-MB	M0017946.D	1	06/15/09	OM	n/a	n/a	VM730

The QC reported here applies to the following samples:

Method: SW846 8260B

T30811-1, T30811-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	1.4	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.3	ug/kg	
108-88-3	Toluene	ND	5.0	1.3	ug/kg	
1330-20-7	Xylene (total)	ND	15	3.8	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	73% 70-121%
2037-26-5	Toluene-D8	88% 76-132%
460-00-4	4-Bromofluorobenzene	106% 73-165%
17060-07-0	1,2-Dichloroethane-D4	66% 57-122%

Blank Spike Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM730-BS	M0017944.D	1	06/15/09	OM	n/a	n/a	VM730

The QC reported here applies to the following samples: Method: SW846 8260B

T30811-1, T30811-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	54.3	109	70-114
100-41-4	Ethylbenzene	50	53.7	107	60-119
108-88-3	Toluene	50	57.2	114	68-115
1330-20-7	Xylene (total)	150	162	108	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	75%	70-121%
2037-26-5	Toluene-D8	93%	76-132%
460-00-4	4-Bromofluorobenzene	104%	73-165%
17060-07-0	1,2-Dichloroethane-D4	65%	57-122%



Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T30399-3MS	M0017951.D	1	06/15/09	OM	n/a	n/a	VM730
T30399-3MSD	M0017952.D	1	06/15/09	OM	n/a	n/a	VM730
T30399-3	M0017950.D	1	06/15/09	OM	n/a	n/a	VM730

The QC reported here applies to the following samples:

Method: SW846 8260B

T30811-1, T30811-2

CAS No.	Compound	T30399-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3280	2990	91	2950	90	1	70-114/38
100-41-4	Ethylbenzene	ND		3280	2940	90	2930	89	0	60-119/40
108-88-3	Toluene	ND		3280	3110	95	3130	95	1	68-115/38
1330-20-7	Xylene (total)	ND		9840	8750	89	8620	88	1	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T30399-3	Limits
1868-53-7	Dibromofluoromethane	70%	68% * a	73%	70-121%
2037-26-5	Toluene-D8	92%	91%	88%	76-132%
460-00-4	4-Bromofluorobenzene	103%	104%	104%	73-165%
17060-07-0	1,2-Dichloroethane-D4	58%	54% * a	58%	57-122%

(a) Outside control limits.



## GC/MS Semi-volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T30811  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12245-MB	P04232.D	1	06/15/09	GJ	06/12/09	OP12245	EP210

The QC reported here applies to the following samples:

Method: SW846 8270C

T30811-1, T30811-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	170	46	ug/kg	
208-96-8	Acenaphthylene	ND	170	39	ug/kg	
120-12-7	Anthracene	ND	170	32	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	64	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	41	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	39	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	31	ug/kg	
218-01-9	Chrysene	ND	170	36	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	88	ug/kg	
206-44-0	Fluoranthene	ND	170	34	ug/kg	
86-73-7	Fluorene	ND	170	45	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	60	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	52	ug/kg	
91-20-3	Naphthalene	ND	170	33	ug/kg	
85-01-8	Phenanthrene	ND	170	45	ug/kg	
129-00-0	Pyrene	ND	170	32	ug/kg	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	54% 26-124%
4165-62-2	Phenol-d5	64% 19-106%
118-79-6	2,4,6-Tribromophenol	70% 18-129%
4165-60-0	Nitrobenzene-d5	58% 18-104%
321-60-8	2-Fluorobiphenyl	73% 21-114%
1718-51-0	Terphenyl-d14	94% 24-149%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T30811  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12245-BS	P04261.D	1	06/16/09	GJ	06/12/09	OP12245	EP211

The QC reported here applies to the following samples:

Method: SW846 8270C

T30811-1, T30811-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1400	84	53-106
208-96-8	Acenaphthylene	1670	1530	92	61-121
120-12-7	Anthracene	1670	1590	95	66-105
56-55-3	Benzo(a)anthracene	1670	1610	97	62-113
50-32-8	Benzo(a)pyrene	1670	1620	97	61-118
205-99-2	Benzo(b)fluoranthene	1670	1600	96	67-110
191-24-2	Benzo(g,h,i)perylene	1670	2020	121	57-124
207-08-9	Benzo(k)fluoranthene	1670	1630	98	65-116
218-01-9	Chrysene	1670	1650	99	71-106
53-70-3	Dibenzo(a,h)anthracene	1670	1900	114	59-123
206-44-0	Fluoranthene	1670	1580	95	64-114
86-73-7	Fluorene	1670	1500	90	65-99
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1920	115	51-133
90-12-0	1-Methylnaphthalene	1670	1250	75	56-94
91-57-6	2-Methylnaphthalene	1670	1230	74	48-101
91-20-3	Naphthalene	1670	1280	77	57-94
85-01-8	Phenanthrene	1670	1550	93	66-102
129-00-0	Pyrene	1670	1710	103	49-117

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	68%	26-124%
4165-62-2	Phenol-d5	72%	19-106%
118-79-6	2,4,6-Tribromophenol	94%	18-129%
4165-60-0	Nitrobenzene-d5	76%	18-104%
321-60-8	2-Fluorobiphenyl	82%	21-114%
1718-51-0	Terphenyl-d14	91%	24-149%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T30811  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12245-MS	P04236.D	1	06/15/09	GJ	06/12/09	OP12245	EP210
OP12245-MSD	P04237.D	1	06/16/09	GJ	06/12/09	OP12245	EP210
T30853-13	P04235.D	1	06/15/09	GJ	06/12/09	OP12245	EP210

The QC reported here applies to the following samples:

Method: SW846 8270C

T30811-1, T30811-2

CAS No.	Compound	T30853-13 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		2080	1780	86	1680	81	6	53-106/49
208-96-8	Acenaphthylene	ND		2080	2010	97	1910	92	5	61-121/49
120-12-7	Anthracene	ND		2080	1940	93	1830	88	6	66-105/40
56-55-3	Benzo(a)anthracene	ND		2080	1980	95	1840	88	7	62-113/43
50-32-8	Benzo(a)pyrene	ND		2080	2020	97	1860	89	8	61-118/44
205-99-2	Benzo(b)fluoranthene	ND		2080	1940	93	1830	88	6	67-110/42
191-24-2	Benzo(g,h,i)perylene	ND		2080	1990	96	1950	93	2	57-124/50
207-08-9	Benzo(k)fluoranthene	ND		2080	2220	107	1960	94	12	65-116/37
218-01-9	Chrysene	ND		2080	2040	98	1910	92	7	71-106/39
53-70-3	Dibenzo(a,h)anthracene	ND		2080	2020	97	1980	95	2	59-123/37
206-44-0	Fluoranthene	ND		2080	2100	101	1950	93	7	64-114/45
86-73-7	Fluorene	ND		2080	1860	90	1760	84	6	65-99/42
193-39-5	Indeno(1,2,3-cd)pyrene	ND		2080	2050	99	2010	96	2	51-133/55
90-12-0	1-Methylnaphthalene	ND		2080	1670	80	1560	75	7	56-94/49
91-57-6	2-Methylnaphthalene	ND		2080	1640	79	1530	73	7	48-101/48
91-20-3	Naphthalene	ND		2080	1700	82	1600	77	6	57-94/49
85-01-8	Phenanthrene	ND		2080	1900	91	1790	86	6	66-102/47
129-00-0	Pyrene	ND		2080	2020	97	1800	86	12	49-117/46

CAS No.	Surrogate Recoveries	MS	MSD	T30853-13	Limits
367-12-4	2-Fluorophenol	68%	63%	52%	26-124%
4165-62-2	Phenol-d5	76%	71%	63%	19-106%
118-79-6	2,4,6-Tribromophenol	91%	85%	71%	18-129%
4165-60-0	Nitrobenzene-d5	77%	72%	57%	18-104%
321-60-8	2-Fluorobiphenyl	85%	79%	69%	21-114%
1718-51-0	Terphenyl-d14	89%	79%	77%	24-149%



## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T30811  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2277-MB	EE044851.D	1	06/12/09	FI	n/a	n/a	GEE2277

The QC reported here applies to the following samples:

Method: OA-1

T30811-1, T30811-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.55	mg/kg	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	65% 35-119%
98-08-8	aaa-Trifluorotoluene	70% 42-100%



Blank Spike/Blank Spike Duplicate Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2277-BS	EE044846.D	1	06/12/09	FI	n/a	n/a	GEE2277
GEE2277-BSD	EE044847.D	1	06/12/09	FI	n/a	n/a	GEE2277

The QC reported here applies to the following samples: Method: OA-1

T30811-1, T30811-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.4	0.341	85	0.334	84	2	76-109/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	70%	69%	35-119%
98-08-8	aaa-Trifluorotoluene	71%	70%	42-100%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12246-MB	CC213575.D	1	06/12/09	FO	06/12/09	OP12246	GCC914

The QC reported here applies to the following samples: Method: SW846 8015 M

T30811-1, T30811-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	66% 33-115%

Blank Spike Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12246-BS	CC213576.D	1	06/12/09	FO	06/12/09	OP12246	GCC914

The QC reported here applies to the following samples:

Method: SW846 8015 M

T30811-1, T30811-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	28.4	85	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	66%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T30811  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12246-MS	CC213577.D	1	06/12/09	FO	06/12/09	OP12246	GCC914
OP12246-MSD	CC213578.D	1	06/12/09	FO	06/12/09	OP12246	GCC914
T30811-1	CC213590.D	100	06/15/09	FO	06/12/09	OP12246	GCC915

The QC reported here applies to the following samples: Method: SW846 8015 M

T30811-1, T30811-2

CAS No.	Compound	T30811-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	14800		38.8	6330	-21846*	5420	-24034*	15	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T30811-1	Limits
84-15-1	o-Terphenyl	37%	60%	0%* b	33-115%

- (a) Outside control limits due to high level in sample relative to spike amount.  
(b) Outside control limits due to dilution.



## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9680  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 06/12/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.044	<0.50
Barium	10	.007	.03	0.0030	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11	-0.027	<5.0
Cadmium	0.25	.013	.05	-0.0040	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.0045	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.14	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.023	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.051	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.099	<0.50
Silver	0.50	.043	.04	0.015	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.041	<1.0

Associated samples MP9680: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9680  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

06/12/09

06/12/09

Metal	T30811-1 Original	DUP	RPD	QC Limits	T30811-1 Original MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic	15.6	22.0	16.2	0-20	15.6	56.7	27.8	136.5N
Barium	4120	3350	50.4*(a)	0-20	4120	6750	27.8	4094.0(c)
Beryllium								
Boron	13.3	9.8	29.6 (b)	0-20	13.3	71.6	55.7	104.9
Cadmium	0.57	0.72	16.5	0-20	0.57	24.5	27.8	85.8
Calcium								
Chromium	30.4	37.6	7.2	0-20	30.4	61.3	27.8	94.5
Cobalt								
Copper	37.7	42.1	7.9	0-20	37.7	71.7	27.8	117.8
Iron								
Lead	18.5	22.8	7.3	0-20	18.5	53.7	27.8	116.7
Magnesium								
Manganese								
Molybdenum								
Nickel	24.4	40.2	31.4 (b)	0-20	24.4	45.9	27.8	59.6N
Potassium								
Selenium	1.2	1.3	26.7 (b)	0-20	1.2	26.8	27.8	90.1
Silver	0.065	0.17	200.0(b)	0-20	0.065	26.9	27.8	96.6
Sodium								
Strontium								
Thallium								
Tin								
Titanium								
Vanadium								
Zinc	66.0	84.7	7.2	0-20	66.0	109	27.8	108.5

Associated samples MP9680: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

(b) RPD acceptable due to low duplicate and sample concentrations.

(c) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9680  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 06/12/09

Metal	T30811-1 Original	MSD	SpikeLot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	15.6	39.3	24.4	84.5	47.2 (a)	20
Barium	4120	5500	24.4	-451.1(b)	20.4 (a)	20
Beryllium						
Boron	13.3	67.7	48.8	111.7	10.5	20
Cadmium	0.57	21.3	24.4	84.8	25.8 (a)	20
Calcium						
Chromium	30.4	54.0	24.4	77.9N	12.7	20
Cobalt						
Copper	37.7	68.1	24.4	119.7	5.0	20
Iron						
Lead	18.5	44.8	24.4	96.8	18.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel	24.4	45.1	24.4	64.8N	12.1	20
Potassium						
Selenium	1.2	23.5	24.4	89.4	26.6 (a)	20
Silver	0.065	23.9	24.4	98.0	15.8	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	66.0	96.2	24.4	71.4N	26.8 (a)	20

Associated samples MP9680: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible matrix interference.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T30811  
 Account: ENCACOP - EnCana  
 Project: Site Clearance

QC Batch ID: MP9680  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: mg/kg

Prep Date: 06/12/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	275	280	98.2	81-119
Barium	506	520	97.3	83-117
Beryllium				
Boron	84.2	94.8	88.8	64-136
Cadmium	167	182	91.8	82-118
Calcium				
Chromium	135	142	95.1	81-120
Cobalt				
Copper	131	132	99.2	83-117
Iron				
Lead	65.8	72.2	91.1	82-118
Magnesium				
Manganese				
Molybdenum				
Nickel	148	155	95.5	83-117
Potassium				
Selenium	164	165	99.4	78-123
Silver	122	126	96.8	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	330	346	95.4	79-121

Associated samples MP9680: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

8.1.3  
8

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9680  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/12/09

Metal	T30811-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	241	266	7.6	0-10
Barium	63500	95600	10.7*(a)	0-10
Beryllium				
Boron	204	217	6.8	0-10
Cadmium	8.82	8.84	5.9	0-10
Calcium				
Chromium	469	546	1.1	0-10
Cobalt				
Copper	582	575	4.2	0-10
Iron				
Lead	284	321	1.7	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	377	414	8.4	0-10
Potassium				
Selenium	17.8	25.3	5.1	0-10
Silver	1.00	0.00		0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1020	1150	5.2	0-10

Associated samples MP9680: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9681  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 06/12/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0025	<0.017

Associated samples MP9681: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9681  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 06/12/09

06/12/09

Metal	T30811-1 Original DUP		RPD	QC Limits	T30811-1 Original MS		Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.17	0.17	0.0	0-20	0.17	0.41	0.258	93.1	75-125

Associated samples MP9681: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.2.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9681  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 06/12/09

Metal	T30811-1		Spike lot		MSD	QC
	Original	MSD	HGTXWS1	% Rec		
Mercury	0.17	0.39	0.282	77.9	5.0	

Associated samples MP9681: T30811-1, T30811-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

8.2.2

8





BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9697  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/15/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1	70.2	<100
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35		
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8		
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130		
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP9697: T30811-1A, T30811-2A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9697  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

06/15/09

06/15/09

	T30811-2A			QC	T30811-2A		Spikelot			QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec		Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Boron	3610	1570	78.8*(a)	0-20	3610	4650	2000	52.1N		80-120
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP9697: T30811-1A, T30811-2A

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9697  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/15/09

Metal	T30811-2A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	3610	3900	2000	14.5N	17.5	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9697: T30811-1A, T30811-2A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9697  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/15/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	886	1000	88.6	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9697: T30811-1A, T30811-2A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.3  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9697  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/15/09

Metal	T30811-2A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1810	1660	8.2	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9697: T30811-1A, T30811-2A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.4  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9698  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 06/13/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.35	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP9698: T30811-1B, T30811-2B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9698  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 06/13/09

06/13/09

Metal	T30811-1B Original	DUP	RPD	QC Limits	T30811-1B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	9870	8160	19.0	0-20	9870	9710	14.1	-1135.1a	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9698: T30811-1B, T30811-2B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9698  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 06/13/09

Metal	T30811-1B Original	MSD	SpikeLot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	9870	10100	14.1	1630.2(a	3.9	20
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9698: T30811-1B, T30811-2B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



SERIAL DILUTION RESULTS SUMMARY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9698  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 06/13/09

Metal	T30811-1B			QC	
	Original	SDL 25:125%DIF		Limits	
Aluminum					
Antimony					
Arsenic					
Barium	168000	173000	2.6	0-10	
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP9698: T30811-1B, T30811-2B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.4.4

8



## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN17125	2.0	<2.0	mg/kg	40	44.5	111.1	80-120%
Specific Conductivity	GN17129	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN17125: T30811-1, T30811-2  
Batch GN17129: T30811-1, T30811-2  
(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN17125	T30811-1	mg/kg	10.1	10.7	6.0	0-20%
Solids, Percent	GN17072	T30811-1	%	84.9	84.4	0.6	0-20%
Specific Conductivity	GN17129	T30811-1	umhos/cm	1360	1360	0.0	0-20%
pH	GN17153	T30811-2	su	8.9	8.9	0.1	0-20%

Associated Samples:

Batch GN17072: T30811-1, T30811-2

Batch GN17125: T30811-1, T30811-2

Batch GN17129: T30811-1, T30811-2

Batch GN17153: T30811-1, T30811-2

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T30811  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN17125	T30811-1	mg/kg	10.1	40	45.9	89.5	75-125%

Associated Samples:

Batch GN17125: T30811-1, T30811-2

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



08/03/09

## Technical Report for

EnCana

Site Clearance

A28PITBOTTOM-071409

Accutest Job Number: T33244R

Sampling Date: 07/14/09

Report to:

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Parachute, CO 81635  
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Total number of pages in report: **57**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Sample Results .....</b>	<b>4</b>
<b>2.1:</b> T33244-1R: A28PITBOTTOM-071409 .....	5
<b>2.2:</b> T33244-1RA: A28PITBOTTOM-071409 .....	11
<b>2.3:</b> T33244-1RB: A28PITBOTTOM-071409 .....	12
<b>Section 3: Misc. Forms .....</b>	<b>13</b>
<b>3.1:</b> Chain of Custody .....	14
<b>Section 4: GC/MS Volatiles - QC Data Summaries .....</b>	<b>18</b>
<b>4.1:</b> Method Blank Summary .....	19
<b>4.2:</b> Blank Spike Summary .....	20
<b>4.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	21
<b>Section 5: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>22</b>
<b>5.1:</b> Method Blank Summary .....	23
<b>5.2:</b> Blank Spike Summary .....	24
<b>5.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	25
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>26</b>
<b>6.1:</b> Method Blank Summary .....	27
<b>6.2:</b> Blank Spike Summary .....	28
<b>6.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	29
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>30</b>
<b>7.1:</b> Method Blank Summary .....	31
<b>7.2:</b> Blank Spike Summary .....	32
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	33
<b>Section 8: Metals Analysis - QC Data Summaries .....</b>	<b>34</b>
<b>8.1:</b> Prep QC MP9890: As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn .....	35
<b>8.2:</b> Prep QC MP9894: Hg .....	40
<b>8.3:</b> Prep QC MP9926: Ba .....	44
<b>8.4:</b> Prep QC MP9927: B .....	49
<b>Section 9: General Chemistry - QC Data Summaries .....</b>	<b>54</b>
<b>9.1:</b> Method Blank and Spike Results Summary .....	55
<b>9.2:</b> Duplicate Results Summary .....	56
<b>9.3:</b> Matrix Spike Results Summary .....	57



Sample Summary

EnCana

Job No: T33244R

Site Clearance

Project No: A28PITBOTTOM-071409

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
T33244-1R	07/14/09	11:50	DP	07/15/09	SO	Soil	A28PITBOTTOM-071409
T33244-1RA	07/14/09	11:50	DP	07/15/09	AQ	Water Extract	A28PITBOTTOM-071409
T33244-1RB	07/14/09	11:50	DP	07/15/09	SO	Soil	A28PITBOTTOM-071409

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

## Report of Analysis

## Report of Analysis

**Client Sample ID:** A28PITBOTTOM-071409**Lab Sample ID:** T33244-1R**Date Sampled:** 07/14/09**Matrix:** SO - Soil**Date Received:** 07/15/09**Method:** SW846 8260B**Percent Solids:** 88.8**Project:** Site Clearance

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0018884.D	1	07/17/09	JL	n/a	n/a	VM761
Run #2							

	Initial Weight	Final Volume
Run #1	5.76 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.9	1.4	ug/kg	
108-88-3	Toluene	ND	4.9	1.2	ug/kg	
100-41-4	Ethylbenzene	ND	4.9	1.2	ug/kg	
1330-20-7	Xylene (total)	ND	15	3.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-121%
2037-26-5	Toluene-D8	103%		76-132%
460-00-4	4-Bromofluorobenzene	109%		73-165%
17060-07-0	1,2-Dichloroethane-D4	105%		57-122%

ND = Not detected      MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: A28PITBOTTOM-071409

Lab Sample ID: T33244-1R

Date Sampled: 07/14/09

Matrix: SO - Soil

Date Received: 07/15/09

Method: SW846 8270C SW846 3550B

Percent Solids: 88.8

Project: Site Clearance

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J12117.D	1	07/21/09	SC	07/20/09	OP12536	EJ559
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	190	52	ug/kg	
208-96-8	Acenaphthylene	ND	190	44	ug/kg	
120-12-7	Anthracene	ND	190	36	ug/kg	
56-55-3	Benzo(a)anthracene	ND	190	72	ug/kg	
50-32-8	Benzo(a)pyrene	ND	190	30	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	190	46	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	190	44	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	190	35	ug/kg	
218-01-9	Chrysene	ND	190	41	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	190	99	ug/kg	
206-44-0	Fluoranthene	ND	190	39	ug/kg	
86-73-7	Fluorene	ND	190	51	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	190	67	ug/kg	
90-12-0	1-Methylnaphthalene	ND	190	44	ug/kg	
91-57-6	2-Methylnaphthalene	ND	190	59	ug/kg	
91-20-3	Naphthalene	ND	190	37	ug/kg	
85-01-8	Phenanthrene	ND	190	50	ug/kg	
129-00-0	Pyrene	ND	190	36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	57%		26-124%
4165-62-2	Phenol-d5	69%		19-106%
118-79-6	2,4,6-Tribromophenol	106%		18-129%
4165-60-0	Nitrobenzene-d5	57%		18-104%
321-60-8	2-Fluorobiphenyl	73%		21-114%
1718-51-0	Terphenyl-d14	146%		24-149%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409	
<b>Lab Sample ID:</b>	T33244-1R	<b>Date Sampled:</b> 07/14/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 07/15/09
<b>Method:</b>	SW846 8015	<b>Percent Solids:</b> 88.8
<b>Project:</b>	Site Clearance	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE046017.D	1	07/16/09	FI	n/a	n/a	GEE2332
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.67 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.596	5.6	0.39	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	92%		46-127%
98-08-8	aaa-Trifluorotoluene	106%		44-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409			<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-1R			<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	88.8
<b>Method:</b>	SW846 8015 M    SW846 3550B				
<b>Project:</b>	Site Clearance				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC214249.D	1	07/22/09	FO	07/21/09	OP12545	GCC931
Run #2							

	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	77.4	9.1	3.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		33-115%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: A28PITBOTTOM-071409

Lab Sample ID: T33244-1R

Matrix: SO - Soil

Date Sampled: 07/14/09

Date Received: 07/15/09

Percent Solids: 88.8

Project: Site Clearance

## SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	24.5	0.67	0.13	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Cadmium	0.91	0.33	0.067	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Chromium	27.5	0.67	0.047	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Copper	30.2	1.7	0.087	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Lead	16.0	0.67	0.27	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Mercury	0.035	0.017	0.00069	mg/kg	1	07/22/09	07/22/09	NS SW846 7471A <sup>2</sup>	SW846 7471A <sup>4</sup>
Nickel	19.3	2.7	0.087	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Selenium	1.1	0.67	0.16	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Silver	0.26 B	0.67	0.053	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>
Zinc	39.8	1.3	0.27	mg/kg	1	07/21/09	07/21/09	NS SW846 6010B <sup>1</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4180

(2) Instrument QC Batch: MA4182

(3) Prep QC Batch: MP9890

(4) Prep QC Batch: MP9894

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL



Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-1R	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.8
<b>Project:</b>	Site Clearance		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	16.8	2.0	mg/kg	1	07/24/09 11:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	10.7	2.7	mg/kg	1	07/24/09 11:00	KD	SW846 6010/7196A M
Sodium Adsorption Ratio	20.0	0.40	ratio	1	07/29/09	TW	LADNR29B
Specific Conductivity	2660	1.0	umhos/cm	1	07/24/09 15:30	KD	EPA 120.1
pH	8.7		su	1	07/22/09	MC	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-1RA	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	88.8
<b>Project:</b>	Site Clearance		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron <sup>a</sup>	824	200	4.2	ug/l	1	07/30/09	07/31/09 NS	SW846 6010B <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA4199  
(2) Prep QC Batch: MP9927  
  
(a) Hot Water Soluble Boron by Methods of Soil Analysis Part 3.

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28PITBOTTOM-071409	<b>Date Sampled:</b>	07/14/09
<b>Lab Sample ID:</b>	T33244-1RB	<b>Date Received:</b>	07/15/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.8
<b>Project:</b>	Site Clearance		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium <sup>a</sup>	467	54	0.16	mg/kg	5	07/26/09	07/28/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

- (1) Instrument QC Batch: MA4192  
(2) Prep QC Batch: MP9926  
  
(a) Prep by LA DNR 29 B

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



**Table 1:**  
Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS <sup>1</sup>	ANALYTICAL METHOD (SW846)
<b>Organic Compounds in Soil</b>		
TPH (total volatile and extractable petroleum hydrocarbons)	1,500 mg/kg	8015
Benzene	0.17 mg/kg <sup>2</sup>	8260B
Toluene	85 mg/kg <sup>2</sup>	8260B
Ethylbenzene	100 mg/kg <sup>2</sup>	8260B
Xylenes (total)	175 mg/kg <sup>2</sup>	8260B
Arenathene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benzo(a)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(b)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(k)fluoranthene	2.2 mg/kg <sup>2</sup>	8270C
Benzo(a)pyrene	0.022 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(a,h)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-c,d)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
<b>Inorganics in Soils</b>		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12 <sup>2</sup>	LAHQ208
pH	6-9	9045C
<b>Metals in Soils</b>		
Arsenic	0.39 mg/kg <sup>2</sup>	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>	6010B
Boron (Hot Water Soluble)	2 mg/l <sup>2</sup>	6010B
Cadmium	7.0 mg/kg <sup>2a</sup>	6010B
Chromium (III)	120,000 mg/kg <sup>2</sup>	6010B
Chromium (VI)	23 mg/kg <sup>2a</sup>	6010B
Copper	3,100 mg/kg <sup>2</sup>	6010B
Lead (inorganic)	400 mg/kg <sup>2</sup>	6010B
Mercury	23 mg/kg <sup>2</sup>	6010B
Nickel (soluble salts)	1,800 mg/kg <sup>2a</sup>	6010B
Selenium	390 mg/kg <sup>2a</sup>	6010B
Silver	390 mg/kg <sup>2</sup>	6010B
Zinc	25,000 mg/kg <sup>2a</sup>	6010B
<b>Liquid Hydrocarbons in Soils and Ground Water</b>		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW-846 analytical methods be used where possible and that analyses of samples be performed in accordance with the methods in the latest version of EPA SW-846.

<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

## 3.1 3

Airbill Numbers: \_\_\_\_\_

### TRIP BLANK INFORMATION

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 2/15/9

**Client Instructions:**

16 of 57  
 **ACCUTEST.**  
 T33244R Laboratories

# SAMPLE RECEIPT LOG

JOB #: T33244 DATE/TIME RECEIVED: 07/15/09 09:15

CLIENT: En Cana INITIALS: FF

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	A28DIT BOTTOM - 071409	07/14/09	1150	S	16.02	1	VR	⊖ 2 3 4 5 6 7 8 <2 >12
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
	2	E19 CUTTINGS - 071409		1230		1	VR	⊖ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
	3	E10 BALK GROUND - 071409		1315		1	VR	⊖ 2 3 4 5 6 7 8 <2 >12	
						2-3	2H	⊖ 2 3 4 5 6 7 8 <2 >12	
FF 07/15/09									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12
									1 2 3 4 5 6 7 8 <2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other  
 LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

T33244R: Chain of Custody

Page 4 of 4





## GC/MS Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244R  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM761-MB	M0018880.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples:

Method: SW846 8260B

T33244-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	1.4	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.3	ug/kg	
108-88-3	Toluene	ND	5.0	1.3	ug/kg	
1330-20-7	Xylene (total)	ND	15	3.8	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	107% 70-121%
2037-26-5	Toluene-D8	100% 76-132%
460-00-4	4-Bromofluorobenzene	97% 73-165%
17060-07-0	1,2-Dichloroethane-D4	104% 57-122%

Blank Spike Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM761-BS	M0018878.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples:

Method: SW846 8260B

T33244-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	46.3	93	70-114
100-41-4	Ethylbenzene	50	41.3	83	60-119
108-88-3	Toluene	50	42.1	84	68-115
1330-20-7	Xylene (total)	150	125	83	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-121%
2037-26-5	Toluene-D8	100%	76-132%
460-00-4	4-Bromofluorobenzene	96%	73-165%
17060-07-0	1,2-Dichloroethane-D4	106%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T33284-1MS	M0018889.D	1	07/17/09	JL	n/a	n/a	VM761
T33284-1MSD	M0018890.D	1	07/17/09	JL	n/a	n/a	VM761
T33284-1	M0018888.D	1	07/17/09	JL	n/a	n/a	VM761

The QC reported here applies to the following samples:

Method: SW846 8260B

T33244-1R

CAS No.	Compound	T33284-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		64.8	60.9	94	58.5	91	4	70-114/38
100-41-4	Ethylbenzene	ND		64.8	60.3	93	55.5	87	8	60-119/40
108-88-3	Toluene	ND		64.8	67.3	104	59.2	93	13	68-115/38
1330-20-7	Xylene (total)	ND		195	176	90	165	86	6	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T33284-1	Limits
1868-53-7	Dibromofluoromethane	106%	103%	105%	70-121%
2037-26-5	Toluene-D8	116%	106%	101%	76-132%
460-00-4	4-Bromofluorobenzene	131%	109%	102%	73-165%
17060-07-0	1,2-Dichloroethane-D4	109%	105%	110%	57-122%



## GC/MS Semi-volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244R  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12536-MB	P04858.D	1	07/20/09	SC	07/20/09	OP12536	EP239

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	170	46	ug/kg	
208-96-8	Acenaphthylene	ND	170	39	ug/kg	
120-12-7	Anthracene	ND	170	32	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	64	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	41	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	39	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	31	ug/kg	
218-01-9	Chrysene	ND	170	36	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	88	ug/kg	
206-44-0	Fluoranthene	ND	170	34	ug/kg	
86-73-7	Fluorene	ND	170	45	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	60	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	52	ug/kg	
91-20-3	Naphthalene	ND	170	33	ug/kg	
85-01-8	Phenanthrene	ND	170	45	ug/kg	
129-00-0	Pyrene	ND	170	32	ug/kg	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	45% 26-124%
4165-62-2	Phenol-d5	47% 19-106%
118-79-6	2,4,6-Tribromophenol	51% 18-129%
4165-60-0	Nitrobenzene-d5	48% 18-104%
321-60-8	2-Fluorobiphenyl	53% 21-114%
1718-51-0	Terphenyl-d14	66% 24-149%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T33244R  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12536-BS	P04859.D	1	07/20/09	SC	07/20/09	OP12536	EP239

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1300	78	53-106
208-96-8	Acenaphthylene	1670	1460	88	61-121
120-12-7	Anthracene	1670	1400	84	66-105
56-55-3	Benzo(a)anthracene	1670	1410	85	62-113
50-32-8	Benzo(a)pyrene	1670	1420	85	61-118
205-99-2	Benzo(b)fluoranthene	1670	1440	86	67-110
191-24-2	Benzo(g,h,i)perylene	1670	1260	76	57-124
207-08-9	Benzo(k)fluoranthene	1670	1420	85	65-116
218-01-9	Chrysene	1670	1420	85	71-106
53-70-3	Dibenzo(a,h)anthracene	1670	1310	79	59-123
206-44-0	Fluoranthene	1670	1580	95	64-114
86-73-7	Fluorene	1670	1300	78	65-99
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1320	79	51-133
90-12-0	1-Methylnaphthalene	1670	1210	73	56-94
91-57-6	2-Methylnaphthalene	1670	1180	71	48-101
91-20-3	Naphthalene	1670	1230	74	57-94
85-01-8	Phenanthrene	1670	1360	82	66-102
129-00-0	Pyrene	1670	1270	76	49-117

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	69%	26-124%
4165-62-2	Phenol-d5	72%	19-106%
118-79-6	2,4,6-Tribromophenol	83%	18-129%
4165-60-0	Nitrobenzene-d5	74%	18-104%
321-60-8	2-Fluorobiphenyl	77%	21-114%
1718-51-0	Terphenyl-d14	74%	24-149%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T33244R  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12536-MS	P04873.D	1	07/21/09	SC	07/20/09	OP12536	EP239
OP12536-MSD	P04874.D	1	07/21/09	SC	07/20/09	OP12536	EP239
T33405-6	P04872.D	1	07/20/09	SC	07/20/09	OP12536	EP239

The QC reported here applies to the following samples:

Method: SW846 8270C

T33244-1R

CAS No.	Compound	T33405-6 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	200 U		1990	1480	74	1180	59	23	53-106/49
208-96-8	Acenaphthylene	200 U		1990	1600	80	1290	65	21	61-121/49
120-12-7	Anthracene	200 U		1990	1950	98	1590	80	20	66-105/40
56-55-3	Benzo(a)anthracene	200 U		1990	2000	101	1620	81	21	62-113/43
50-32-8	Benzo(a)pyrene	200 U		1990	2050	103	1540	77	28	61-118/44
205-99-2	Benzo(b)fluoranthene	200 U		1990	2150	108	1700	85	23	67-110/42
191-24-2	Benzo(g,h,i)perylene	200 U		1990	2060	104	1720	86	18	57-124/50
207-08-9	Benzo(k)fluoranthene	200 U		1990	1990	100	1490	75	29	65-116/37
218-01-9	Chrysene	200 U		1990	1990	100	1590	80	22	71-106/39
53-70-3	Dibenzo(a,h)anthracene	200 U		1990	1980	100	1650	83	18	59-123/37
206-44-0	Fluoranthene	47.8	J	1990	1740	85	1480	72	16	64-114/45
86-73-7	Fluorene	200 U		1990	1650	83	1320	66	22	65-99/42
193-39-5	Indeno(1,2,3-cd)pyrene	200 U		1990	2020	102	1680	84	18	51-133/55
90-12-0	1-Methylnaphthalene	200 U		1990	1040	52*	894	45*	15	56-94/49
91-57-6	2-Methylnaphthalene	200 U		1990	1000	50	859	43*	15	48-101/48
91-20-3	Naphthalene	200 U		1990	996	50*	860	43*	15	57-94/49
85-01-8	Phenanthrene	200 U		1990	1930	97	1570	79	21	66-102/47
129-00-0	Pyrene	45.6	J	1990	2230	110	1610	78	32	49-117/46

CAS No.	Surrogate Recoveries	MS	MSD	T33405-6	Limits
367-12-4	2-Fluorophenol	44%	37%	36%	26-124%
4165-62-2	Phenol-d5	45%	38%	42%	19-106%
118-79-6	2,4,6-Tribromophenol	99%	80%	81%	18-129%
4165-60-0	Nitrobenzene-d5	46%	39%	40%	18-104%
321-60-8	2-Fluorobiphenyl	58%	47%	51%	21-114%
1718-51-0	Terphenyl-d14	103%	73%	75%	24-149%





## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T33244R  
**Account:** ENCACOP EnCana  
**Project:** Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2332-MB	EE046003.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples:

Method: SW846 8015

T33244-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.35	mg/kg	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	95%	46-127%
98-08-8	aaa-Trifluorotoluene	105%	44-120%

Blank Spike Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2332-BS	EE045999.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples: Method: SW846 8015

T33244-1R

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.388	97	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	94%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T33013-4MS	EE046010.D	1	07/16/09	FI	n/a	n/a	GEE2332
T33013-4MSD	EE046011.D	1	07/16/09	FI	n/a	n/a	GEE2332
T33013-4	EE046016.D	1	07/16/09	FI	n/a	n/a	GEE2332

The QC reported here applies to the following samples: Method: SW846 8015

T33244-1R

CAS No.	Compound	T33013-4 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.858	J	20.9	28.5	133*	22.5	104	24*	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T33013-4	Limits
460-00-4	4-Bromofluorobenzene	100%	101%	94%	46-127%
98-08-8	aaa-Trifluorotoluene	98%	114%	105%	44-120%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-MB	IF191036.D	1	07/23/09	FO	07/21/09	OP12545	GIB852

The QC reported here applies to the following samples:

Method: SW846 8015 M

T33244-1R

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	82% 33-115%

7.1.1  
7

Blank Spike Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-BS	IF191037.D	1	07/23/09	FO	07/21/09	OP12545	GIF852

The QC reported here applies to the following samples: Method: SW846 8015 M

T33244-1R

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	29.2	88	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T33244R  
Account: ENCACOP EnCana  
Project: Site Clearance

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12545-MS	IF191038.D	1	07/23/09	FO	07/21/09	OP12545	GIB852
OP12545-MSD	IF191039.D	1	07/23/09	FO	07/21/09	OP12545	GIF852
T33244-2	IF191065.D	1	07/23/09	FO	07/21/09	OP12545	GIF852

The QC reported here applies to the following samples:

Method: SW846 8015 M

T33244-1R

CAS No.	Compound	T33244-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	89.1		43.4	145	129*	109	47	28	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T33244-2	Limits
84-15-1	o-Terphenyl	106%	87%	73%	33-115%

7.3.1  
7





## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9890  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/21/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.038	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0020	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.0020	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.021	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	-0.024	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.048	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.012	<0.50
Silver	0.50	.043	.04	0.011	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	-0.0090	<1.0

Associated samples MP9890: T33244-1R

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9890  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

07/21/09

07/21/09

Metal	T33017-1 Original	DUP	RPD	QC Limits	T33017-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	2.0	2.8	33.3*(a)	0-20	2.0	25.2	26.1	89.1	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium	0.23	0.25	8.3	0-20	0.23	23.6	26.1	89.7	80-120
Calcium									
Chromium	5.6	5.0	11.3	0-20	5.6	29.2	26.1	90.6	80-120
Cobalt									
Copper	5.6	7.1	23.6*(a)	0-20	5.6	31.4	26.1	99.0	80-120
Iron									
Lead	3.6	4.1	13.0	0-20	3.6	28.0	26.1	93.7	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	2.8	2.8	0.0	0-20	2.8	26.2	26.1	89.8	80-120
Potassium									
Selenium	0.24	0.32	28.6 (b)	0-20	0.24	23.0	26.1	87.4	80-120
Silver	0.12	0.16	28.6 (b)	0-20	0.12	23.9	26.1	91.3	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	6.5	7.1	8.8	0-20	6.5	26.1	26.1	75.2N	80-120

Associated samples MP9890: T33244-1R

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

(b) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9890  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/21/09

Metal	T33017-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	2.0	23.0	24.4	86.0	9.1	20
Barium	anr					
Beryllium						
Boron						
Cadmium	0.23	21.9	24.4	88.7	7.5	20
Calcium						
Chromium	5.6	27.1	24.4	88.0	7.5	20
Cobalt						
Copper	5.6	28.7	24.4	94.6	9.0	20
Iron						
Lead	3.6	25.8	24.4	90.9	8.2	20
Magnesium						
Manganese						
Molybdenum						
Nickel	2.8	24.3	24.4	88.0	7.5	20
Potassium						
Selenium	0.24	21.1	24.4	85.4	8.6	20
Silver	0.12	22.0	24.4	89.6	8.3	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	6.5	25.8	24.4	79.0N	1.2	20

Associated samples MP9890: T33244-1R

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9890  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/21/09

Metal	LCS Result	Spikelot MPLCD050	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	258	280	92.1	81-119
Barium	anr			
Beryllium				
Boron				
Cadmium	168	182	92.3	82-118
Calcium				
Chromium	137	142	96.5	81-120
Cobalt				
Copper	129	132	97.7	83-117
Iron				
Lead	65.5	72.2	90.7	82-118
Magnesium				
Manganese				
Molybdenum				
Nickel	146	155	94.2	83-117
Potassium				
Selenium	155	165	93.9	78-123
Silver	119	126	94.4	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	302	346	87.3	79-121

Associated samples MP9890: T33244-1R

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

8.1.3  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9890  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/21/09

Metal	T33017-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	32.0	39.9	24.7 (a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	3.77	6.35	68.4 (a)	0-10
Calcium				
Chromium	90.7	400	340.6*(b)	0-10
Cobalt				
Copper	91.8	140	52.8*(b)	0-10
Iron				
Lead	58.4	302	416.3(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	45.6	179	293.4(a)	0-10
Potassium				
Selenium	3.88	0.00	100.0(a)	0-10
Silver	2.01	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	107	501	370.4*(b)	0-10

Associated samples MP9890: T33244-1R

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9894  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/22/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0053	<0.017

Associated samples MP9894: T33244-1R

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9894  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 07/22/09

07/22/09

Metal	T33244-1R		QC Limits	T33244-1R		Spikelot HGTXWS1	% Rec	QC Limits
	Original	DUP		Original	MS			
Mercury	0.035	0.028	22.2 (a)	0-20	0.035 0.29	0.259	98.3	75-125

Associated samples MP9894: T33244-1R

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

8.2.2

8



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
 Account: ENCACOP - EnCana  
 Project: Site Clearance

QC Batch ID: MP9894  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 07/22/09

Metal	T33244-1R Original MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
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Mercury	0.035	0.30	0.261	101.5	3.4
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Associated samples MP9894: T33244-1R

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2

8

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

Methods: SW846 7471A  
Units: mg/kg

Metal	LCS Result	Spikelot HGLCD050 % Rec	QC Limits
Mercury	7.8	8.48	92.0 66-132

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.060	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP9926: T33244-1RB

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

07/26/09

Metal	T33013-2B Original	DUP	RPD	QC Limits	T33013-2B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	165	165	0.0	0-20	165	194	20.9	138.5(a)	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9926: T33244-1RB

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

Metal	T33013-2B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	165	185	20.9	95.6	4.7	20
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9926: T33244-1RB

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 07/26/09

Metal	LCS Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9926: T33244-1RB

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.3  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9926  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/26/09

Metal	T33013-2B		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium	3120	3100	0.4	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9926: T33244-1RB

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.4  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	400	33	34		
Antimony	10	4.5	6		
Arsenic	10	3.5	4		
Barium	400	.28	5.4		
Beryllium	10	.22	.4		
Boron	200	2.2	4.2	19.4	<200
Cadmium	8.0	.5	.6		
Calcium	10000	11	70		
Chromium	20	2.2	3.8		
Cobalt	100	1	1.6		
Copper	50	1.2	12		
Iron	200	26	26		
Lead	6.0	3.2	3.4		
Magnesium	10000	13	16		
Manganese	30	.4	15		
Molybdenum	20	1.9	2.6		
Nickel	80	1.9	6.4		
Potassium	10000	110	110		
Selenium	10	6.5	6.4		
Silver	20	1.7	1.6		
Sodium	10000	260	270		
Strontium	40	.34	.8		
Thallium	20	6.5	5.2		
Tin	40	3.6	5.8		
Titanium	40	.6	.6		
Vanadium	100	1.2	1.2		
Zinc	40	.98	8.2		

Associated samples MP9927: T33244-1RA

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

07/30/09

07/30/09

Metal	T33013-3A			QC	T33013-3A		Spikelot		QC
	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	1840	1990	7.8	0-20	1840	3330	1550	78.1	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP9927: T33244-1RA

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	T33013-3A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	1840	3260	1560	74.0	2.1	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP9927: T33244-1RA

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

QC Batch ID: MP9927  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 07/30/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	2000	1600	99.8	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9927: T33244-1RA

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.4.3  
8

SERIAL DILUTION RESULTS SUMMARY

Login Number: T33244R  
 Account: ENCACOP - EnCana  
 Project: Site Clearance

QC Batch ID: MP9927  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 07/30/09

Metal	T33013-3A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	936	882	5.7	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP9927: T33244-1RA

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.4.4  
8



## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN17466	2.0	<2.0	mg/kg	40	41.6	103.9	80-120%
Sodium Adsorption Ratio	GN17525	0.40	1.2*(a)	ratio				
Specific Conductivity	GN17469	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN17466: T33244-1R  
Batch GN17469: T33244-1R  
Batch GN17525: T33244-1R  
(\*) Outside of QC limits  
(a) The calculated Sodium Absorption Ratio in the method blank was above the method reporting limit. The concentration of sodium found in the sample was 10 times above the concentration found in the method blank.

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN17466	T33012-1	mg/kg	3.4	3.1	9.3	0-20%
Sodium Adsorption Ratio	GN17525	T33013-2	ratio	26.5	26.9	1.7	0-20%
Specific Conductivity	GN17469	T33012-1	umhos/cm	3190	3190	0.0	0-20%
pH	GN17446	T33244-2	su	7.2	7.2	0.0	0-20%

Associated Samples:

Batch GN17446: T33244-1R

Batch GN17466: T33244-1R

Batch GN17469: T33244-1R

Batch GN17525: T33244-1R

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T33244R  
Account: ENCACOP - EnCana  
Project: Site Clearance

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN17466	T33012-1	mg/kg	3.4	40	41.6	95.6	75-125%

Associated Samples:

Batch GN17466: T33244-1R

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits





09/09/09

## Technical Report for

EnCana

EnCana Oil & Gas (USA) Inc.

A28 Cuttings 8/18/09

Accutest Job Number: T35710

Sampling Date: 08/18/09

Report to:

EnCana  
2717 Co. Rd. 215  
Parachute, CO 81635  
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ATTN: Chris Hines

Total number of pages in report: **61**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Sample Results .....</b>	<b>4</b>
<b>2.1:</b> T35710-1: A28CUTTINGS-081809 .....	5
<b>2.2:</b> T35710-1A: A28CUTTINGS-081809 .....	11
<b>2.3:</b> T35710-1B: A28CUTTINGS-081809 .....	12
<b>2.4:</b> T35710-1C: A28CUTTINGS-081809 .....	13
<b>Section 3: Misc. Forms .....</b>	<b>15</b>
<b>3.1:</b> Chain of Custody .....	16
<b>Section 4: GC/MS Volatiles - QC Data Summaries .....</b>	<b>20</b>
<b>4.1:</b> Method Blank Summary .....	21
<b>4.2:</b> Blank Spike Summary .....	22
<b>4.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	23
<b>Section 5: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>24</b>
<b>5.1:</b> Method Blank Summary .....	25
<b>5.2:</b> Blank Spike Summary .....	26
<b>5.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	27
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>28</b>
<b>6.1:</b> Method Blank Summary .....	29
<b>6.2:</b> Blank Spike Summary .....	30
<b>6.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	31
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>32</b>
<b>7.1:</b> Method Blank Summary .....	33
<b>7.2:</b> Blank Spike Summary .....	34
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	35
<b>Section 8: Metals Analysis - QC Data Summaries .....</b>	<b>36</b>
<b>8.1:</b> Prep QC MP10164: Ca,Mg,Na,Sodium Adsorption Ratio .....	37
<b>8.2:</b> Prep QC MP10188: As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn .....	39
<b>8.3:</b> Prep QC MP10196: Hg .....	44
<b>8.4:</b> Prep QC MP10213: Ba .....	48
<b>8.5:</b> Prep QC MP10214: B .....	53
<b>Section 9: General Chemistry - QC Data Summaries .....</b>	<b>58</b>
<b>9.1:</b> Method Blank and Spike Results Summary .....	59
<b>9.2:</b> Duplicate Results Summary .....	60
<b>9.3:</b> Matrix Spike Results Summary .....	61



Sample Summary

EnCana

EnCana Oil & Gas (USA) Inc.  
Project No: A28 Cuttings 8/18/09

Job No: T35710

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T35710-1	08/18/09	10:30 DP	08/19/09	SO	Soil	A28CUTTINGS-081809
T35710-1A	08/18/09	10:30 DP	08/19/09	AQ	Water Extract	A28CUTTINGS-081809
T35710-1B	08/18/09	10:30 DP	08/19/09	SO	Soil	A28CUTTINGS-081809
T35710-1C	08/18/09	10:30 DP	08/19/09	SO	Soil	A28CUTTINGS-081809

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

## Report of Analysis

## Report of Analysis

**Client Sample ID:** A28CUTTINGS-081809  
**Lab Sample ID:** T35710-1  
**Matrix:** SO - Soil  
**Method:** SW846 8260B  
**Project:** EnCana Oil & Gas (USA) Inc.

**Date Sampled:** 08/18/09  
**Date Received:** 08/19/09  
**Percent Solids:** 89.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0054942.D	1	08/31/09	AH	n/a	n/a	VX269
Run #2							

	Initial Weight	Final Volume
Run #1	5.48 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	151	5.1	0.72	ug/kg	
108-88-3	Toluene	4.9	5.1	0.97	ug/kg	J
100-41-4	Ethylbenzene	2.4	5.1	0.92	ug/kg	J
1330-20-7	Xylene (total)	3.2	15	2.1	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-121%
2037-26-5	Toluene-D8	113%		76-132%
460-00-4	4-Bromofluorobenzene	142%		73-165%
17060-07-0	1,2-Dichloroethane-D4	89%		57-122%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28CUTTINGS-081809  
**Lab Sample ID:** T35710-1  
**Matrix:** SO - Soil  
**Method:** SW846 8270C SW846 3550B  
**Project:** EnCana Oil & Gas (USA) Inc.

**Date Sampled:** 08/18/09  
**Date Received:** 08/19/09  
**Percent Solids:** 89.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	P05598.D	1	08/25/09	GJ	08/22/09	OP12818	EP275
Run #2	P05629.D	10	08/26/09	GJ	08/22/09	OP12818	EP276

	Initial Weight	Final Volume
Run #1	30.9 g	1.0 ml
Run #2	30.9 g	1.0 ml

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	180	50	ug/kg	
208-96-8	Acenaphthylene	ND	180	43	ug/kg	
120-12-7	Anthracene	ND	180	35	ug/kg	
56-55-3	Benzo(a)anthracene	ND	180	70	ug/kg	
50-32-8	Benzo(a)pyrene	ND	180	29	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	180	45	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	180	43	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	180	34	ug/kg	
218-01-9	Chrysene	ND	180	40	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	180	96	ug/kg	
206-44-0	Fluoranthene	ND	180	37	ug/kg	
86-73-7	Fluorene	ND	180	49	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	180	65	ug/kg	
90-12-0	1-Methylnaphthalene	60.7	180	42	ug/kg	J
91-57-6	2-Methylnaphthalene	151	180	57	ug/kg	J
91-20-3	Naphthalene	50.8	180	36	ug/kg	J
85-01-8	Phenanthrene	84.1	180	49	ug/kg	J
129-00-0	Pyrene	39.9	180	35	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%	62%	18-104%
321-60-8	2-Fluorobiphenyl	86%	99%	21-114%
1718-51-0	Terphenyl-d14	99%	91%	24-149%

(a) Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28CUTTINGS-081809  
**Lab Sample ID:** T35710-1  
**Matrix:** SO - Soil  
**Method:** SW846 8015  
**Project:** EnCana Oil & Gas (USA) Inc.

**Date Sampled:** 08/18/09  
**Date Received:** 08/19/09  
**Percent Solids:** 89.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE046742.D	1	08/20/09	FI	n/a	n/a	GEE2372
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.11 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	5.07	6.1	0.37	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	113%		46-127%
460-00-4	4-Bromofluorobenzene	0%		46-127%
98-08-8	aaa-Trifluorotoluene	110%		44-120%
98-08-8	aaa-Trifluorotoluene	0%		44-120%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

# Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809		<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1		<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil		<b>Percent Solids:</b>	89.1
<b>Method:</b>	SW846 8015 M SW846 3550B			
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC214654.D	10	08/24/09	FO	08/20/09	OP12796	GCC943
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	787	92	30	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	65%		33-115%		

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



## Report of Analysis

**Client Sample ID:** A28CUTTINGS-081809**Lab Sample ID:** T35710-1**Matrix:** SO - Soil**Date Sampled:** 08/18/09**Date Received:** 08/19/09**Percent Solids:** 89.1**Project:** EnCana Oil & Gas (USA) Inc.

## Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	19.0	0.57	0.11	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Cadmium	0.73	0.29	0.057	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Chromium	29.7	0.57	0.040	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Copper	37.6	1.4	0.075	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Lead	27.2	0.57	0.23	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Mercury	0.085	0.018	0.00072	mg/kg	1	09/02/09	09/02/09 NS	SW846 7471A <sup>1</sup>	SW846 7471A <sup>4</sup>
Nickel	21.3	2.3	0.075	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Selenium	0.56 B	0.57	0.14	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Silver	0.29 B	0.57	0.046	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Zinc	70.3	1.1	0.23	mg/kg	1	09/01/09	09/03/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4265

(2) Instrument QC Batch: MA4266

(3) Prep QC Batch: MP10188

(4) Prep QC Batch: MP10196

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.3 B	2.0	mg/kg	1	08/26/09 11:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	28.4	2.6	mg/kg	1	09/03/09 00:52	NS	SW846 6010/7196A M
Solids, Percent	89.1		%	1	08/24/09	MR	SM 2540B M
Specific Conductivity	1950	1.0	umhos/cm	1	09/02/09 13:30	KD	EPA 120.1
pH	8.2		su	1	08/21/09 16:50	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1A	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	AQ - Water Extract	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	2170	200	4.1	ug/l	1	09/03/09	09/05/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4275  
(2) Prep QC Batch: MP10214

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1B	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	21000	550	1.7	mg/kg	50	09/03/09	09/04/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4269  
(2) Prep QC Batch: MP10213

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1C	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	1030	25	0.18	mg/l	5	08/27/09	09/07/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>
Magnesium	84.5	25	0.039	mg/l	5	08/27/09	09/07/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>
Sodium	860	25	0.67	mg/l	5	08/27/09	09/07/09 NS	SW846 6010B <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA4276  
(2) Prep QC Batch: MP10164

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1C	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	6.92		ratio	1	09/07/09 20:25	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit



## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

## CHAIN OF CUSTODY

**10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770**

[illegible]

## T35710: Chain of Custody

Page 1 of 4



**Table 1:**  
**Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)**

CONTAMINANT OF CONCERN	CONCENTRATIONS	
	Organic Compounds in Soil	ANALYTICAL METHOD (BW846)
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg <sup>2</sup>	8260B
Toluene	85 mg/kg <sup>2</sup>	8260B
Ethylbenzene	100 mg/kg <sup>2</sup>	8260B
Xylenes (total)	175 mg/kg <sup>2</sup>	8260B
Acenaphthene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benzo(A)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(B)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(K)fluoranthene	2.2 mg/kg <sup>2</sup>	8270C
Benzo(A)pyrene	0.022 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(A,H)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-CD)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
<b>Inorganics in Soils</b>		
Electrical Conductivity (EC)	<4 mhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12 <sup>1</sup>	1ADNR298
pH	6-9	9045C
<b>Metals in Soils</b>		
Arsenic	0.39 mg/kg <sup>2</sup>	8010B
Barium (LDR True Total Barium)	15,000 mg/kg <sup>2</sup>	8070B
Boron (Hot Water Soluble)	2 mg/kg <sup>2</sup>	8070B
Cadmium	70 mg/kg <sup>2,a</sup>	8070B
Chromium (III)	120,000 mg/kg <sup>2</sup>	8070B
Chromium (VI)	23 mg/kg <sup>2,a</sup>	8070B
Copper	3,100 mg/kg <sup>2</sup>	8070B
Lead (inorganic)	400 mg/kg <sup>2</sup>	8070B
Mercury	23 mg/kg <sup>2</sup>	8070B
Nickel (soluble salts)	1,600 mg/kg <sup>2,a</sup>	8070B
Selenium	390 mg/kg <sup>2,b</sup>	8070B
Silver	390 mg/kg <sup>2</sup>	8070B
Zinc	23,000 mg/kg <sup>2,b</sup>	8070B
<b>Liquid Hydrocarbons in Soils and Ground Water</b>		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

## 3.13

Airbill Numbers: \_\_\_\_\_





## GC/MS Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX269-MB	X0054931.D	1	08/31/09	AH	n/a	n/a	VX269

The QC reported here applies to the following samples:

Method: SW846 8260B

T35710-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	99% 70-121%
2037-26-5	Toluene-D8	109% 76-132%
460-00-4	4-Bromofluorobenzene	110% 73-165%
17060-07-0	1,2-Dichloroethane-D4	83% 57-122%

Blank Spike Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VX269-BS	X0054929.D	1	08/31/09	AH	n/a	n/a	VX269

The QC reported here applies to the following samples: Method: SW846 8260B

T35710-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.0	90	70-114
100-41-4	Ethylbenzene	50	47.5	95	60-119
108-88-3	Toluene	50	48.0	96	68-115
1330-20-7	Xylene (total)	150	145	97	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-121%
2037-26-5	Toluene-D8	108%	76-132%
460-00-4	4-Bromofluorobenzene	107%	73-165%
17060-07-0	1,2-Dichloroethane-D4	90%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T36182-1MS	X0054934.D	1	08/31/09	AH	n/a	n/a	VX269
T36182-1MSD	X0054935.D	1	08/31/09	AH	n/a	n/a	VX269
T36182-1	X0054933.D	1	08/31/09	AH	n/a	n/a	VX269

The QC reported here applies to the following samples:

Method: SW846 8260B

T35710-1

CAS No.	Compound	T36182-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	184	J	3670	3370	87	3050	78	10	70-114/38
100-41-4	Ethylbenzene	4670		3670	8140	94	7850	87	4	60-119/40
108-88-3	Toluene	370 U		3670	3480	95	3160	86	10	68-115/38
1330-20-7	Xylene (total)	465	J	11000	11000	96	9840	85	11	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T36182-1	Limits
1868-53-7	Dibromofluoromethane	103%	97%	102%	70-121%
2037-26-5	Toluene-D8	110%	107%	108%	76-132%
460-00-4	4-Bromofluorobenzene	117%	113%	118%	73-165%
17060-07-0	1,2-Dichloroethane-D4	88%	82%	84%	57-122%



## GC/MS Semi-volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



## Method Blank Summary

Page 1 of 1

**Job Number:** T35710  
**Account:** ENCACOP EnCana  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12818-MB	J12783.D	1	08/25/09	SC	08/22/09	OP12818	EJ590

The QC reported here applies to the following samples:

Method: SW846 8270C

T35710-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	170	46	ug/kg	
208-96-8	Acenaphthylene	ND	170	39	ug/kg	
120-12-7	Anthracene	ND	170	32	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	64	ug/kg	
50-32-8	Benzo(a)pyrene	ND	170	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	170	41	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	170	39	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	170	31	ug/kg	
218-01-9	Chrysene	ND	170	36	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	170	88	ug/kg	
206-44-0	Fluoranthene	ND	170	34	ug/kg	
86-73-7	Fluorene	ND	170	45	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	170	60	ug/kg	
90-12-0	1-Methylnaphthalene	ND	170	39	ug/kg	
91-57-6	2-Methylnaphthalene	ND	170	52	ug/kg	
91-20-3	Naphthalene	ND	170	33	ug/kg	
85-01-8	Phenanthrene	ND	170	45	ug/kg	
129-00-0	Pyrene	ND	170	32	ug/kg	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	78% 26-124%
4165-62-2	Phenol-d5	80% 19-106%
118-79-6	2,4,6-Tribromophenol	89% 18-129%
4165-60-0	Nitrobenzene-d5	81% 18-104%
321-60-8	2-Fluorobiphenyl	81% 21-114%
1718-51-0	Terphenyl-d14	124% 24-149%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T35710  
**Account:** ENCACOP EnCana  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12818-BS	H34655.D	1	08/25/09	SC	08/22/09	OP12818	EH1878

The QC reported here applies to the following samples:

Method: SW846 8270C

T35710-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	1670	1350	81	53-106
208-96-8	Acenaphthylene	1670	1480	89	61-121
120-12-7	Anthracene	1670	1390	83	66-105
56-55-3	Benzo(a)anthracene	1670	1490	89	62-113
50-32-8	Benzo(a)pyrene	1670	1490	89	61-118
205-99-2	Benzo(b)fluoranthene	1670	1560	94	67-110
191-24-2	Benzo(g,h,i)perylene	1670	1850	111	57-124
207-08-9	Benzo(k)fluoranthene	1670	1590	95	65-116
218-01-9	Chrysene	1670	1490	89	71-106
53-70-3	Dibenzo(a,h)anthracene	1670	1830	110	59-123
206-44-0	Fluoranthene	1670	1470	88	64-114
86-73-7	Fluorene	1670	1390	83	65-99
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1850	111	51-133
90-12-0	1-Methylnaphthalene	1670	1280	77	56-94
91-57-6	2-Methylnaphthalene	1670	1290	77	48-101
91-20-3	Naphthalene	1670	1320	79	57-94
85-01-8	Phenanthrene	1670	1410	85	66-102
129-00-0	Pyrene	1670	1550	93	49-117

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	72%	26-124%
4165-62-2	Phenol-d5	73%	19-106%
118-79-6	2,4,6-Tribromophenol	88%	18-129%
4165-60-0	Nitrobenzene-d5	75%	18-104%
321-60-8	2-Fluorobiphenyl	79%	21-114%
1718-51-0	Terphenyl-d14	90%	24-149%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T35710  
**Account:** ENCACOP EnCana  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12818-MS	H34680.D	1	08/26/09	SC	08/22/09	OP12818	EH1879
OP12818-MSD	H34681.D	1	08/26/09	SC	08/22/09	OP12818	EH1879
T35720-5	H34679.D	1	08/26/09	SC	08/22/09	OP12818	EH1879

The QC reported here applies to the following samples:

Method: SW846 8270C

T35710-1

CAS No.	Compound	T35720-5 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	200 U		2090	1550	74	1680	80	8	53-106/49
208-96-8	Acenaphthylene	200 U		2090	1650	79	1800	86	9	61-121/49
120-12-7	Anthracene	200 U		2090	1730	83	1890	90	9	66-105/40
56-55-3	Benzo(a)anthracene	200 U		2090	1830	88	2020	97	10	62-113/43
50-32-8	Benzo(a)pyrene	200 U		2090	1690	81	1780	85	5	61-118/44
205-99-2	Benzo(b)fluoranthene	200 U		2090	1900	91	2090	100	10	67-110/42
191-24-2	Benzo(g,h,i)perylene	200 U		2090	2480	119	2660	127*	7	57-124/50
207-08-9	Benzo(k)fluoranthene	200 U		2090	1880	90	1920	92	2	65-116/37
218-01-9	Chrysene	200 U		2090	1750	84	1940	93	10	71-106/39
53-70-3	Dibenzo(a,h)anthracene	200 U		2090	2380	114	2520	121	6	59-123/37
206-44-0	Fluoranthene	200 U		2090	1710	82	1780	85	4	64-114/45
86-73-7	Fluorene	200 U		2090	1590	76	1770	85	11	65-99/42
193-39-5	Indeno(1,2,3-cd)pyrene	200 U		2090	2450	117	2570	123	5	51-133/55
90-12-0	1-Methylnaphthalene	200 U		2090	1470	70	1570	75	7	56-94/49
91-57-6	2-Methylnaphthalene	200 U		2090	1500	72	1590	76	6	48-101/48
91-20-3	Naphthalene	200 U		2090	1450	69	1460	70	1	57-94/49
85-01-8	Phenanthrene	200 U		2090	1720	82	1900	91	10	66-102/47
129-00-0	Pyrene	200 U		2090	2870	137*	3880	186*	30	49-117/46

CAS No.	Surrogate Recoveries	MS	MSD	T35720-5	Limits
367-12-4	2-Fluorophenol	62%	61%	72%	26-124%
4165-62-2	Phenol-d5	64%	66%	76%	19-106%
118-79-6	2,4,6-Tribromophenol	81%	92%	87%	18-129%
4165-60-0	Nitrobenzene-d5	64%	64%	75%	18-104%
321-60-8	2-Fluorobiphenyl	66%	72%	83%	21-114%
1718-51-0	Terphenyl-d14	125%	164% *	115%	24-149%



## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T35710  
**Account:** ENCACOP EnCana  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2372-MB	EE046728.D	1	08/20/09	FI	n/a	n/a	GEE2372

The QC reported here applies to the following samples:

Method: SW846 8015

T35710-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	103%	46-127%
98-08-8	aaa-Trifluorotoluene	111%	44-120%

Blank Spike Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2372-BS	EE046722.D	1	08/20/09	FI	n/a	n/a	GEE2372

The QC reported here applies to the following samples: Method: SW846 8015

T35710-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.410	103	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	102%	46-127%
98-08-8	aaa-Trifluorotoluene	113%	44-120%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T35710  
**Account:** ENCACOP EnCana  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T35584-1MS	EE046734.D	1	08/20/09	FI	n/a	n/a	GEE2372
T35584-1MSD	EE046735.D	1	08/20/09	FI	n/a	n/a	GEE2372
T35584-1	EE046731.D	1	08/20/09	FI	n/a	n/a	GEE2372

The QC reported here applies to the following samples:

Method: SW846 8015

T35710-1

CAS No.	Compound	T35584-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	7.81		22.5	27.5	87	28.4	91	3	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T35584-1	Limits
460-00-4	4-Bromofluorobenzene	101%	102%	104%	46-127%
98-08-8	aaa-Trifluorotoluene	115%	105%	112%	44-120%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12796-MB	CC214640.D 1		08/24/09	FO	08/20/09	OP12796	GCC943

The QC reported here applies to the following samples: Method: SW846 8015 M

T35710-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	52% 33-115%

7.1.1  
7

Blank Spike Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12796-BS	CC214641.D	1	08/24/09	FO	08/20/09	OP12796	GCC943

The QC reported here applies to the following samples: Method: SW846 8015 M

T35710-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	32.9	99	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	65%	33-115%

7.2.1  
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T35710  
Account: ENCACOP EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12796-MS	CC214642.D	1	08/24/09	FO	08/20/09	OP12796	GCC943
OP12796-MSD	CC214643.D	1	08/24/09	FO	08/20/09	OP12796	GCC943
T35584-1	CC214644.D	1	08/24/09	FO	08/20/09	OP12796	GCC943

The QC reported here applies to the following samples: Method: SW846 8015 M

T35710-1

CAS No.	Compound	T35584-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	ND		37.1	35.0	94	33.0	89	6	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T35584-1	Limits
84-15-1	o-Terphenyl	66%	63%	63%	33-115%

7.3.1  
7



## Metals Analysis

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10164  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date: 08/27/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	4.9	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	5.3	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	40.1	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10164: T35710-1C

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10164  
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
 Units: ug/l

Prep Date: 08/27/09

Metal	T35713-1C Original DUP		RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	100000	100000	0.0	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	18600	18600	0.0	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	22500	22200	1.3	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10164: T35710-1C

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10188  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 09/01/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	0.032	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0025	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.010	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.021	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.018	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.026	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.069	<0.50
Silver	0.50	.043	.04	-0.017	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.0030	<1.0

Associated samples MP10188: T35710-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10188  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

09/01/09

09/01/09

Metal	T35599-1 Original	DUP	RPD	QC Limits	T35599-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	1.7	1.7	0.0	0-20	1.7	23.8	23	95.9	80-120
Barium									
Beryllium									
Boron									
Cadmium	0.035	0.039	10.8	0-20	0.035	22.2	23	96.2	80-120
Calcium									
Chromium	6.1	6.2	1.6	0-20	6.1	29.2	23	100.3	80-120
Cobalt									
Copper	2.5	2.5	0.0	0-20	2.5	25.9	23	101.6	80-120
Iron									
Lead	5.8	5.7	1.7	0-20	5.8	28.1	23	96.8	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	1.6	1.9	17.1	0-20	1.6	24.1	23	97.6	80-120
Potassium	anr								
Selenium	0.0	0.0	NC	0-20	0.0	22.0	23	95.5	80-120
Silver	0.0	0.0	NC	0-20	0.0	22.9	23	99.4	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	14.2	14.9	4.8	0-20	14.2	37.5	23	101.1	80-120

Associated samples MP10188: T35710-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10188  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 09/01/09

Metal	T35599-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	1.7	23.1	22.8	93.8	3.0	20
Barium						
Beryllium						
Boron						
Cadmium	0.035	21.6	22.8	94.6	2.7	20
Calcium						
Chromium	6.1	28.4	22.8	97.8	2.8	20
Cobalt						
Copper	2.5	25.0	22.8	98.7	3.5	20
Iron						
Lead	5.8	27.3	22.8	94.3	2.9	20
Magnesium						
Manganese						
Molybdenum						
Nickel	1.6	23.3	22.8	95.1	3.4	20
Potassium	anr					
Selenium	0.0	21.1	22.8	92.5	4.2	20
Silver	0.0	22.2	22.8	97.3	3.1	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	14.2	35.9	22.8	95.1	4.4	20

Associated samples MP10188: T35710-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10188  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 09/01/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	150	158	94.9	82-118
Barium				
Beryllium				
Boron				
Cadmium	176	187	94.1	82-118
Calcium				
Chromium	89.5	89.5	100.0	79-121
Cobalt				
Copper	129	129	100.0	84-117
Iron				
Lead	162	172	94.2	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	96.6	99	97.6	81-119
Potassium	anr			
Selenium	142	148	95.9	78-121
Silver	62.2	66	94.2	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	372	394	94.4	80-119

Associated samples MP10188: T35710-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

8.2.3

8

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10188  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 09/01/09

Metal	T35599-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	30.1	39.0	29.8 (a)	0-10
Barium				
Beryllium				
Boron				
Cadmium	0.630	0.00	100.0(a)	0-10
Calcium				
Chromium	111	116	4.3	0-10
Cobalt				
Copper	44.3	44.9	1.2	0-10
Iron				
Lead	105	111	5.6	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	28.6	29.0	1.5	0-10
Potassium	anr			
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	257	283	10.4*(b)	0-10

Associated samples MP10188: T35710-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10196  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 09/02/09

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0041	.00066	-0.0024	<0.017

Associated samples MP10196: T35710-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10196  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 09/02/09 09/02/09

Metal	T35709-1		QC	T35709-1		Spikelot	% Rec	QC
	Original	DUP	RPD	Original	MS	HGTXWS1		Limits
Mercury	0.014	0.013	7.4	0-20	0.014 0.33	0.297	106.4	75-125

Associated samples MP10196: T35710-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.3.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10196  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 09/02/09

Metal	T35709-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.014	0.31	0.291	101.8	6.3	

Associated samples MP10196: T35710-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.3.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10196  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 09/02/09

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
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Mercury	7.5	7.34	102.2	72-128
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Associated samples MP10196: T35710-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.3.3

8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10213  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 09/03/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.076	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP10213: T35710-1B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10213  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

09/03/09

09/03/09

Metal	T35713-1B Original DUP		RPD	QC Limits	T35713-1B Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	155	150	3.3	0-20	155	171	2	800.1(a)	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10213: T35710-1B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10213  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 09/03/09

Metal	T35713-1B Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	155	181	2.02	1287.5(a	5.7	20
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10213: T35710-1B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Prep Date: 09/03/09

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10213  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 09/03/09

Metal	T35713-1B Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	3110	3330	7.0	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10213: T35710-1B

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested

8.4.4  
8

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10214  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 09/03/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	400	33	34		
Antimony	10	4.5	6		
Arsenic	10	3.5	4		
Barium	400	.28	5.4		
Beryllium	10	.22	.4		
Boron	200	2.2	4.2	-62	<200
Cadmium	8.0	.5	.6		
Calcium	10000	11	70		
Chromium	20	2.2	3.8		
Cobalt	100	1	1.6		
Copper	50	1.2	12		
Iron	200	26	26		
Lead	6.0	3.2	3.4		
Magnesium	10000	13	16		
Manganese	30	.4	15		
Molybdenum	20	1.9	2.6		
Nickel	80	1.9	6.4		
Potassium	10000	110	110		
Selenium	10	6.5	6.4		
Silver	20	1.7	1.6		
Sodium	10000	260	270		
Strontium	40	.34	.8		
Thallium	20	6.5	5.2		
Tin	40	3.6	5.8		
Titanium	40	.6	.6		
Vanadium	100	1.2	1.2		
Zinc	40	.98	8.2		

Associated samples MP10214: T35710-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10214  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

09/03/09

09/03/09

Metal	T35709-1A Original	DUP	RPD	QC Limits	T35709-1A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	2730	1440	61.9*(a)	0-20	2730	5120	1000	115.0	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10214: T35710-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested  
(a) High RPD due to possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T35710  
 Account: ENCACOP - EnCana  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10214  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 09/03/09

Metal	T35709-1A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	2730	4980	1000	109.9	2.8	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10214: T35710-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.5.2  
8

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Methods: SW846 6010B  
Units: ug/l

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1130	1000	113.1	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10214  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 09/03/09

Metal	T35709-1A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1370	1350	1.6	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10214: T35710-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.5.4

8



## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN17759	2.0	<2.0	mg/kg	40	40.0	100.0	80-120%
Specific Conductivity	GN17878	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN17759: T35710-1  
Batch GN17878: T35710-1  
(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN17759	T35709-1	mg/kg	1.2 B	<2.0	1.8	0-20%
Solids, Percent	GN17776	T35721-11	%	83.1	81	2.6	0-20%
Specific Conductivity	GN17878	T35709-1	umhos/cm	1480	1480	0.0	0-20%
pH	GN17763	T35720-6	su	7.3	7.3	0.0	0-20%

Associated Samples:

Batch GN17759: T35710-1

Batch GN17763: T35710-1

Batch GN17776: T35710-1

Batch GN17878: T35710-1

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T35710  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN17759	T35709-1	mg/kg	1.2 B	40	38.5	93.3	75-125%

Associated Samples:  
Batch GN17759: T35710-1  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits



09/24/09

## Technical Report for

EnCana

EnCana Oil & Gas (USA) Inc.

A28 Cuttings 8/18/09

Accutest Job Number: T35710R

Sampling Date: 08/18/09

Report to:

EnCana  
2717 Co. Rd. 215  
Parachute, CO 81635  
brett.middleton@encana.com; christopher.hines@encana.com  
  
ATTN: Chris Hines

Total number of pages in report: **13**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.

# Table of Contents

-1-

**Section 1: Sample Summary ..... 3**

**Section 2: Sample Results ..... 4**

**2.1: T35710-1R: A28CUTTINGS-081809 ..... 5**

**Section 3: Misc. Forms ..... 6**

**3.1: Chain of Custody ..... 7**

**Section 4: Metals Analysis - QC Data Summaries ..... 11**

**4.1: Prep QC MP10307: As,Ba,B ..... 12**



Sample Summary

EnCana

EnCana Oil & Gas (USA) Inc.  
Project No: A28 Cuttings 8/18/09

Job No: T35710R

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
T35710-1R	08/18/09	10:30 DP	08/19/09	SO Soil	A28CUTTINGS-081809

Soil samples reported on a dry weight basis unless otherwise indicated on result page.





## Sample Results

## Report of Analysis

Report of Analysis

<b>Client Sample ID:</b>	A28CUTTINGS-081809	<b>Date Sampled:</b>	08/18/09
<b>Lab Sample ID:</b>	T35710-1R	<b>Date Received:</b>	08/19/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	MDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.0085 B	D004	5.0	0.50	0.0020	mg/l	1	09/21/09	09/22/09 NS	SW846 6010B <sup>1</sup>
Barium	1.4	D005	100	1.0	0.0027	mg/l	1	09/21/09	09/22/09 NS	SW846 6010B <sup>1</sup>
Boron	0.26			0.10	0.0021	mg/l	1	09/21/09	09/22/09 NS	SW846 6010B <sup>1</sup>

- (1) Instrument QC Batch: MA4299  
(2) Prep QC Batch: MP10307

RL = Reporting Limit                      MDL = Method Detection Limit      U = Indicates a result < MDL  
MCL = Maximum Contamination Level (40 CFR 261 6/96)              B = Indicates a result > = MDL but < RL



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody

## CHAIN OF CUSTODY

**10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770**

Laboratories

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

<div style="display: flex; justify-content: space-between;"> <span>FED-EX Tracking #</span> <span>Bottle Order Control #</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Accustest Quote #</span> <span>Accustest Job #</span> </div>										<b>T35710</b>																																							
<div style="display: flex; justify-content: space-between;"> <span><b>Client / Reporting Information</b></span> <span><b>Project Information</b></span> </div> <div> <div style="display: flex;"> <div style="flex: 1;"> <b>Company Name</b>  <b>EnCana Oil &amp; Gas (USA) Inc.</b>  <b>Project Contact</b>  <b>Chris Hines</b>  <b>Address</b>            2717 County Road 215, Suite 100            City <b>Parachute, CO 81635</b>            Phone No. <b>970.285.2653</b>  <b>Samplers's Name</b>            Dan Prokop         </div> <div style="flex: 1;"> <b>E-Mail</b>            christopher.hines@encana.com  <b>Address</b>    <b>City</b>            Parachute, CO 81635  <b>State</b>            CO  <b>Zip</b>            81635  <b>Phone No.</b>            970.285.2653  <b>Fax No.</b>    <b>Client Purchase Order #</b>    <b>Collection</b>  <div style="display: flex; justify-content: space-between;"> <div> <b>Date</b>            08/18/2009  <b>Time</b>            1030  <b>Matrix</b>            SO  <b># of bottles</b>            3         </div> <div> <b>Number of preserved bottles</b>  <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>MC1</td><td>MC2</td><td>MC3</td><td>MC4</td><td>MC5</td><td>MC6</td><td>MC7</td><td>MC8</td><td>MC9</td><td>MC10</td><td>MC11</td><td>MC12</td><td>MC13</td><td>MC14</td><td>MC15</td><td>MC16</td><td>MC17</td><td>MC18</td><td>MC19</td><td>MC20</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> </div> </div> </div> </div> </div>										MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10	MC11	MC12	MC13	MC14	MC15	MC16	MC17	MC18	MC19	MC20																				
MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10	MC11	MC12	MC13	MC14	MC15	MC16	MC17	MC18	MC19	MC20																														

 **Requested Analyses** **Matrix Codes**  **DW** - Drinking Water  **GW** - Ground Water  **WW** - Wastewater  **SO** - Soil  **SL** - Sludge  **OL** - Oil  **LIQ** - Other Liquid  **SOL** - Other Solid  **LAB USE ONLY** | | | | | | | | | || **Turnaround Time ( Business days)** **Date Deliverable Information**  ☐ 14 Day STANDARD  ☐ 8 Day RUSH  ☐ 4 Day RUSH  ☒ 3 Day EMERGENCY  ☐ 2 Day EMERGENCY  ☐ 1 Day EMERGENCY  ☐ Other  **Approved By/ Date:**  ☐ Commercial "A"  ☐ Commercial "B"  ☐ Reduced Tier 1  ☐ Full Data Package     Commercial "A" = Results Only   Commercial "B" = Results & Standard QC  ☐ State Forms  ☒ EDD Format  ☐ Other | | | | | | | | | | **Comments / Remarks**  **Client Needs Units In:** | | | | | | | | | |
**Real time analytical data available via Lablink**																			
**Requisitioned By: [Signature]** **DATE: 8/18/09 1730**										**Received By: [Signature]** **DATE: 08/19/09**									
**Requisitioned By: [Signature]** **DATE: [Blank]**										**Received By: [Signature]** **DATE: [Blank]**									
**Requisitioned By: [Signature]** **DATE: [Blank]**										**Received By: [Signature]** **DATE: [Blank]**									
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**Requisitioned By: [Signature]** **DATE: [Blank]**																			

## T35710R: Chain of Custody

Page 1 of 4

**Table 1:**  
**Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)**

CONTAMINANT OF CONCERN	CONCENTRATIONS	ANALYTICAL METHOD (SW846)
Organic Compounds in Soil		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	9015
Benzene	0.17 mg/kg <sup>2</sup>	8260B
Toluene	85 mg/kg <sup>2</sup>	8260B
Ethylbenzene	100 mg/kg <sup>2</sup>	8260B
Xylenes (total)	175 mg/kg <sup>2</sup>	8260B
Acenaphthene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benzo(A)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(B)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benzo(K)fluoranthene	2.2 mg/kg <sup>2</sup>	8270C
Benzo(A)pyrene	0.022 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(A,H)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-CD)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
Inorganics in Soils		
Electrical Conductivity (EC)	<4 mhos/cm or 2x background	9050
Sodium Adsorption Ratio (SAR)	<12 <sup>2</sup>	1ADNR298
pH	6-9	9045C
Metals in Soils		
Arsenic	0.39 mg/kg <sup>2</sup>	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>	6070B
Boron (Hot Water Soluble)	2 mg/kg <sup>2</sup>	6010B
Cadmium	70 mg/kg <sup>2,3</sup>	6010B
Chromium (III)	120,000 mg/kg <sup>2</sup>	6010B
Chromium (VI)	23 mg/kg <sup>2,3</sup>	6010B
Copper	3,100 mg/kg <sup>2</sup>	6010B
Lead (inorganic)	400 mg/kg <sup>2</sup>	6010B
Mercury	23 mg/kg <sup>2</sup>	6010B
Nickel (soluble salts)	1,600 mg/kg <sup>2,4</sup>	6010B
Selenium	390 mg/kg <sup>2,4</sup>	6010B
Silver	390 mg/kg <sup>2</sup>	6010B
Zinc	23,000 mg/kg <sup>2,5</sup>	6010B
Liquid Hydrocarbons in Soils and Ground Water		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

# SAMPLE INSPECTION FORM

Accutest Job Number: T35710 Client: EnCana Oil & Gas (USA) Date/Time Received: 08/19/09 0930  
 # of Coolers Received: 1 Thermometer #: 12-1 Temperature Adjustment Factor: 10.4  
 Cooler Temps: #1: 32 #2:        #3:        #4:        #5:        #6:        #7:        #8:         
 Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: \_\_\_\_\_

## COOLER INFORMATION

- ☐ Custody seal missing or not intact
- ☐ Temperature criteria not met
- ☐ Wet ice received in cooler

## CHAIN OF CUSTODY

- ☐ Chain of Custody not received
- ☐ Sample D/T unclear or missing
- ☐ Analyses unclear or missing
- ☐ COC not properly executed

## SAMPLE INFORMATION

- ☐ Sample containers received broken
- ☐ VOC vials have headspace
- ☐ Sample labels missing or illegible
- ☐ ID on COC does not match label(s)
- ☐ D/T on COC does not match label(s)
- ☐ Sample/Bottles rec'd but no analysis on COC
- ☐ Sample listed on COC, but not received
- ☐ Bottles missing for requested analysis
- ☐ Insufficient volume for analysis
- ☐ Sample received improperly preserved

## TRIP BLANK INFORMATION

- ☐ Trip Blank on COC but not received
- ☐ Trip Blank received but not on COC
- ☐ Trip Blank not intact
- ☐ Received Water Trip Blank
- ☐ Received Soil TB

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

Summary of Discrepancies:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TECHNICIAN SIGNATURE/DATE: 

INFORMATION AND SAMPLE LABELING VERIFIED BY: GC 8-19-9

## CORRECTIVE ACTIONS

Client Representative Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Accutest Representative: \_\_\_\_\_

Via: Phone Email

Client Instructions:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I:\mwalker\form\samplemanagement

T35710R: Chain of Custody

Page 3 of 4





## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T35710R  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10307  
Matrix Type: LEACHATE

Methods: SW846 6010B  
Units: mg/l

Prep Date: 09/21/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.20	.016	.017		
Antimony	0.20	.0023	.003		
Arsenic	0.50	.0018	.002	0.0077	<0.50
Barium	1.0	.00014	.0027	0.14	<1.0
Beryllium	0.0050	.00011	.0002		
Boron	0.10	.0011	.0021	0.068	<0.10
Cadmium	0.0050	.00025	.0003		
Calcium	5.0	.0054	.035		
Chromium	0.010	.0011	.0019		
Cobalt	0.050	.0005	.0008		
Copper	0.025	.00058	.0059		
Iron	0.10	.013	.013		
Lead	0.50	.0016	.0017		
Magnesium	5.0	.0067	.0078		
Manganese	0.015	.0002	.0076		
Molybdenum	0.010	.00096	.0013		
Nickel	0.040	.00095	.0032		
Potassium	5.0	.053	.053		
Selenium	0.50	.0032	.0032		
Silver	0.010	.00085	.0008		
Sodium	5.0	.13	.13		
Strontium	0.020	.00017	.0004		
Thallium	0.20	.0032	.0026		
Tin	0.020	.0018	.0029		
Titanium	0.020	.0003	.0003		
Vanadium	0.050	.0006	.0006		
Zinc	0.10	.00049	.0041		

Associated samples MP10307: T35710-1R

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T35710R  
Account: ENCACOP - EnCana  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10307  
Matrix Type: LEACHATE

Methods: SW846 6010B  
Units: mg/l

Prep Date: 09/21/09 09/21/09

Metal	BSP Result	Spikelot MPITCLP3	% Rec	QC Limits	BSD Result	Spikelot MPITCLP3	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony									
Arsenic	2.0	2.0	100.0	80-120	2.0	2.0	100.0	0.0	
Barium	5.1	5.0	102.0	80-120	5.3	5.0	106.0	3.8	
Beryllium									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron									
Lead	anr								
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10307: T35710-1R

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested



11/04/09

## Technical Report for

ENCANA

EnCana Oil & Gas (USA) Inc.

A28 Pit Clearance

Accutest Job Number: T40355

Sampling Date: 10/21/09

Report to:

EnCana

christopher.hines@encana.com

ATTN: Chris Hines

Total number of pages in report: **80**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Sample Results .....</b>	<b>8</b>
<b>3.1:</b> T40355-1: A28-PIT BOTTOM-102109 .....	9
<b>3.2:</b> T40355-1A: A28-PIT BOTTOM-102109 .....	15
<b>3.3:</b> T40355-1B: A28-PIT BOTTOM-102109 .....	16
<b>3.4:</b> T40355-1C: A28-PIT BOTTOM-102109 .....	17
<b>3.5:</b> T40355-2: A28-SOUTH SPOIL-102109 .....	19
<b>3.6:</b> T40355-2A: A28-SOUTH SPOIL-102109 .....	25
<b>3.7:</b> T40355-2B: A28-SOUTH SPOIL-102109 .....	26
<b>3.8:</b> T40355-2C: A28-SOUTH SPOIL-102109 .....	27
<b>Section 4: Misc. Forms .....</b>	<b>29</b>
<b>4.1:</b> Chain of Custody .....	30
<b>Section 5: GC/MS Volatiles - QC Data Summaries .....</b>	<b>34</b>
<b>5.1:</b> Method Blank Summary .....	35
<b>5.2:</b> Blank Spike Summary .....	36
<b>5.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	37
<b>Section 6: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>38</b>
<b>6.1:</b> Method Blank Summary .....	39
<b>6.2:</b> Blank Spike Summary .....	40
<b>6.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	41
<b>Section 7: GC Volatiles - QC Data Summaries .....</b>	<b>42</b>
<b>7.1:</b> Method Blank Summary .....	43
<b>7.2:</b> Blank Spike Summary .....	44
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	45
<b>Section 8: GC Semi-volatiles - QC Data Summaries .....</b>	<b>46</b>
<b>8.1:</b> Method Blank Summary .....	47
<b>8.2:</b> Blank Spike Summary .....	48
<b>8.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	49
<b>Section 9: Metals Analysis - QC Data Summaries .....</b>	<b>50</b>
<b>9.1:</b> Prep QC MP10519: As,Cr,Pb,Se,Ag .....	51
<b>9.2:</b> Prep QC MP10520: Hg .....	56
<b>9.3:</b> Prep QC MP10525: Ba .....	60
<b>9.4:</b> Prep QC MP10526: B .....	65
<b>9.5:</b> Prep QC MP10539: Cd,Cu,Ni,Zn .....	70
<b>9.6:</b> Prep QC MP10545: Ca,Mg,Na,Sodium Adsorption Ratio .....	75
<b>Section 10: General Chemistry - QC Data Summaries .....</b>	<b>77</b>
<b>10.1:</b> Method Blank and Spike Results Summary .....	78
<b>10.2:</b> Duplicate Results Summary .....	79
<b>10.3:</b> Matrix Spike Results Summary .....	80



Sample Summary

ENCANA

Job No: T40355

EnCana Oil & Gas (USA) Inc.  
Project No: A28 Pit Clearance

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
T40355-1	10/21/09	13:45	DP	10/22/09	SO	Soil	A28-PIT BOTTOM-102109
T40355-1A	10/21/09	13:45	DP	10/22/09	SO	Soil	A28-PIT BOTTOM-102109
T40355-1B	10/21/09	13:45	DP	10/22/09	SO	Soil	A28-PIT BOTTOM-102109
T40355-1C	10/21/09	13:45	DP	10/22/09	SO	Soil	A28-PIT BOTTOM-102109
T40355-2	10/21/09	14:20	DP	10/22/09	SO	Soil	A28-SOUTH SPOIL-102109
T40355-2A	10/21/09	14:20	DP	10/22/09	SO	Soil	A28-SOUTH SPOIL-102109
T40355-2B	10/21/09	14:20	DP	10/22/09	SO	Soil	A28-SOUTH SPOIL-102109
T40355-2C	10/21/09	14:20	DP	10/22/09	SO	Soil	A28-SOUTH SPOIL-102109

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** ENCANA

**Job No** T40355

**Site:** EnCana Oil & Gas (USA) Inc.

**Report Date** 10/30/2009 4:27:07 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 10/21/2009 and were received at Accutest on 10/22/2009 properly preserved, at 2.6 Deg. C and intact. These Samples received an Accutest job number of T40355. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

<b>Matrix</b> SO	<b>Batch ID:</b> VZ2641
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T40354-3MS, T40354-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Xylene (total) are outside control limits. Probable cause due to matrix interference.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP13321
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T40355-1MS, T40355-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for 2-Methylnaphthalene are outside control limits. Probable cause due to matrix interference.

### Volatiles by GC By Method SW846 8015

<b>Matrix</b> SO	<b>Batch ID:</b> GEE2474
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T40398-1MS, T40398-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GC By Method SW846 8015 M

<b>Matrix</b> SO	<b>Batch ID:</b> OP13313
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T40106-1MS, T40106-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for TPH (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- RPD(s) for MSD for TPH (C10-C28) are outside control limits for sample OP13313-MSD. Probable cause due to sample homogeneity.
- Sample(s) OP13313-MSD, T40355-1, T40355-2 have surrogates outside control limits. Probable cause due to matrix interference.

**Friday, October 30, 2009**

**Page 1 of 4**

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP10526

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39878-4AMSD, T39878-4ADUP, T39878-4ASDL, T39878-4AMS were used as the QC samples for metals.
- RPD(s) for Duplicate for Boron are outside control limits for sample MP10526-D1. High RPD due to possible matrix interference.
- RPD(s) for Serial Dilution for Boron are outside control limits for sample MP10526-SD1. Probable cause due to sample homogeneity.
- MP10526-SD1 for Boron: Serial dilution indicates possible matrix interference.
- MP10526-MS for Boron: Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

**Matrix** AQ

**Batch ID:** MP10545

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1CDUP were used as the QC samples for metals.

**Matrix** SO

**Batch ID:** MP10519

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39939-6DUP, T39939-6MS, T39939-6MSD, T39939-6SDL were used as the QC samples for metals.
- LCS Recovery(s) for Arsenic, Chromium are outside control limits.
- Matrix Spike Recovery(s) for Arsenic, Chromium, Selenium, Silver are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Selenium, Silver are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for Arsenic, Chromium are outside control limits for sample MP10519-S2. High RPD due to possible matrix interference.
- RPD(s) for Serial Dilution for Silver, Arsenic, Chromium, Lead are outside control limits for sample MP10519-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP10519-SD1 for Arsenic: Serial dilution indicates possible matrix interference.
- MP10519-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP10519-SD1 for Lead: Serial dilution indicates possible matrix interference.

**Matrix** SO

**Batch ID:** MP10525

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39942-1BDUP, T39942-1BMSD, T39942-1BSDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Barium are outside control limits for sample MP10525-SD1. Probable cause due to sample homogeneity.

**Matrix** SO

**Batch ID:** MP10539

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

## Metals By Method SW846 6010B

<b>Matrix</b> SO	<b>Batch ID:</b> MP10539
------------------	--------------------------

- Sample(s) T39939-6DUP, T39939-6MS, T39939-6MSD, T39939-6SDL, T39939-6DUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Nickel are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Cadmium, Nickel are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Duplicate for Cadmium are outside control limits for sample MP10539-D1. RPD acceptable due to low duplicate and sample concentrations.
- RPD(s) for Serial Dilution for Copper, Nickel are outside control limits for sample MP10539-SD1. Probable cause due to sample homogeneity.

## Metals By Method SW846 7471A

<b>Matrix</b> SO	<b>Batch ID:</b> MP10520
------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39944-1MS, T39944-1MSD, T39944-1DUP were used as the QC samples for metals.
- LCS Recovery(s) for Mercury are outside control limits.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP10520-D1. RPD acceptable due to low duplicate and sample concentrations.

## Wet Chemistry By Method EPA 120.1

<b>Matrix</b> AQ	<b>Batch ID:</b> GN18499
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1DUP were used as the QC samples for Specific Conductivity.

## Wet Chemistry By Method LADNR29B

<b>Matrix</b> SO	<b>Batch ID:</b> MP10545
------------------	--------------------------

- T40355-2C for Sodium Adsorption Ratio: Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$
- T40355-1C for Sodium Adsorption Ratio: Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

## Wet Chemistry By Method SM 2540 G

<b>Matrix</b> SO	<b>Batch ID:</b> GN18439
------------------	--------------------------

- Sample(s) T40117-1DUP were used as the QC samples for Solids, Percent.

## Wet Chemistry By Method SW846 3060/7196A

<b>Matrix</b> SO	<b>Batch ID:</b> GN18489
------------------	--------------------------

- All method blanks for this batch meet method specific criteria.
- Sample(s) T40355-1DUP, T40355-1MS were used as the QC samples for Chromium, Hexavalent.

## Wet Chemistry By Method SW846 6010/7196A M

<b>Matrix</b> SO	<b>Batch ID:</b> R19509
------------------	-------------------------

- T40355-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

<b>Matrix</b> SO	<b>Batch ID:</b> R19510
------------------	-------------------------

- T40355-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)



## Wet Chemistry By Method SW846 9045C

**Matrix** SO

**Batch ID:** GN18471

- Sample(s) T40355-2DUP were used as the QC samples for pH.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used



## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z0053187.D	1	10/24/09	JL	n/a	n/a	VZ2641
Run #2							

	Initial Weight	Final Volume
Run #1	5.13 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.8	0.82	ug/kg	
108-88-3	Toluene	ND	5.8	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	5.8	1.1	ug/kg	
1330-20-7	Xylene (total)	ND	18	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-121%
2037-26-5	Toluene-D8	112%		76-132%
460-00-4	4-Bromofluorobenzene	107%		73-165%
17060-07-0	1,2-Dichloroethane-D4	89%		57-122%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109				
<b>Lab Sample ID:</b>	T40355-1			<b>Date Sampled:</b>	10/21/09
<b>Matrix:</b>	SO - Soil			<b>Date Received:</b>	10/22/09
<b>Method:</b>	SW846 8270C BY SIM SW846 3550B			<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P06790.D	1	10/26/09	GJ	10/23/09	OP13321	EP329
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	7.9	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	7.9	2.8	ug/kg	
120-12-7	Anthracene	ND	7.9	1.5	ug/kg	
56-55-3	Benzo(a)anthracene	1.4	7.9	1.3	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	7.9	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	7.9	4.2	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	7.9	7.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	7.9	5.1	ug/kg	
218-01-9	Chrysene	6.5	7.9	1.9	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	7.9	7.6	ug/kg	
206-44-0	Fluoranthene	4.5	7.9	1.7	ug/kg	J
86-73-7	Fluorene	ND	7.9	2.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	7.9	5.9	ug/kg	
90-12-0	1-Methylnaphthalene	15.7	7.9	1.5	ug/kg	
91-57-6	2-Methylnaphthalene	25.1	7.9	1.4	ug/kg	
91-20-3	Naphthalene	5.0	7.9	1.2	ug/kg	J
85-01-8	Phenanthrene	38.2	7.9	1.1	ug/kg	
129-00-0	Pyrene	12.4	7.9	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		10-127%
321-60-8	2-Fluorobiphenyl	47%		11-133%
1718-51-0	Terphenyl-d14	117%		15-187%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109			<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1			<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	83.5
<b>Method:</b>	SW846 8015				
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE048874.D	1	10/26/09	FI	n/a	n/a	GEE2474
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.53 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	7.30	6.4	0.38	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	78%		46-127%
98-08-8	aaa-Trifluorotoluene	112%		44-120%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109				
<b>Lab Sample ID:</b>	T40355-1			<b>Date Sampled:</b>	10/21/09
<b>Matrix:</b>	SO - Soil			<b>Date Received:</b>	10/22/09
<b>Method:</b>	SW846 8015 M    SW846 3550B			<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC216082.D	10	10/29/09	SS	10/22/09	OP13313	GCC991
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	786	99	33	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% <sup>a</sup>		33-115%		

(a) Outside control limits due to dilution.

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28-PIT BOTTOM-102109**Lab Sample ID:** T40355-1**Date Sampled:** 10/21/09**Matrix:** SO - Soil**Date Received:** 10/22/09**Percent Solids:** 83.5**Project:** EnCana Oil & Gas (USA) Inc.

## Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	26.8	0.66	0.13	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium	0.53	0.33	0.066	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Chromium	28.7	0.66	0.046	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper	37.8	1.6	0.085	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Lead	19.0	0.66	0.26	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Mercury	0.032	0.018	0.00069	mg/kg	1	10/26/09	10/26/09 TW	SW846 7471A <sup>1</sup>	SW846 7471A <sup>5</sup>
Nickel	21.5	2.6	0.085	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Selenium	0.40 B	0.66	0.16	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Silver	0.29 B	0.66	0.053	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Zinc	60.8	1.3	0.26	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>

(1) Instrument QC Batch: MA4356

(2) Instrument QC Batch: MA4357

(3) Instrument QC Batch: MA4360

(4) Prep QC Batch: MP10519

(5) Prep QC Batch: MP10520

(6) Prep QC Batch: MP10539

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.6 B	2.0	mg/kg	1	10/29/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	27.1	2.7	mg/kg	1	10/29/09 12:00	KD	SW846 6010/7196A M
Solids, Percent	83.5		%	1	10/23/09	AA	SM 2540 G
Specific Conductivity	1730	1.0	umhos/cm	1	10/29/09 15:00	KD	EPA 120.1
pH	8.8		su	1	10/27/09 14:40	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit



Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1A	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	2.50	0.20	0.0042	mg/l	1	10/26/09	10/28/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4359  
(2) Prep QC Batch: MP10526

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1B	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1040	11	0.034	mg/kg	1	10/27/09	10/28/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4359  
(2) Prep QC Batch: MP10525

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1C	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	155	25	0.18	mg/l	5	10/28/09	10/29/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>
Magnesium	28.7	25	0.039	mg/l	5	10/28/09	10/29/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>
Sodium	1990	130	3.4	mg/l	25	10/28/09	10/30/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4362  
(2) Prep QC Batch: MP10545

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT BOTTOM-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-1C	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	38.5		ratio	1	10/30/09 08:34	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109		
<b>Lab Sample ID:</b>	T40355-2	<b>Date Sampled:</b>	10/21/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	10/22/09
<b>Method:</b>	SW846 8260B	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z0053188.D	1	10/24/09	JL	n/a	n/a	VZ2641
Run #2							

	Initial Weight	Final Volume
Run #1	5.23 g	5.0 ml
Run #2		

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.7	0.80	ug/kg	
108-88-3	Toluene	ND	5.7	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	5.7	1.0	ug/kg	
1330-20-7	Xylene (total)	5.8	17	2.4	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-121%
2037-26-5	Toluene-D8	111%		76-132%
460-00-4	4-Bromofluorobenzene	107%		73-165%
17060-07-0	1,2-Dichloroethane-D4	91%		57-122%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28-SOUTH SPOIL-102109**Lab Sample ID:** T40355-2**Date Sampled:** 10/21/09**Matrix:** SO - Soil**Date Received:** 10/22/09**Method:** SW846 8270C BY SIM SW846 3550B**Percent Solids:** 83.5**Project:** EnCana Oil & Gas (USA) Inc.

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P06793.D	1	10/26/09	GJ	10/23/09	OP13321	EP329
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.0	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	8.0	2.8	ug/kg	
120-12-7	Anthracene	ND	8.0	1.5	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.0	1.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.0	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.0	4.2	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	8.0	8.0	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.0	5.2	ug/kg	
218-01-9	Chrysene	5.4	8.0	2.0	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	8.0	7.7	ug/kg	
206-44-0	Fluoranthene	2.7	8.0	1.7	ug/kg	J
86-73-7	Fluorene	ND	8.0	2.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.0	6.0	ug/kg	
90-12-0	1-Methylnaphthalene	2.2	8.0	1.5	ug/kg	J
91-57-6	2-Methylnaphthalene	19.6	8.0	1.4	ug/kg	
91-20-3	Naphthalene	8.3	8.0	1.2	ug/kg	
85-01-8	Phenanthrene	32.5	8.0	1.1	ug/kg	
129-00-0	Pyrene	9.3	8.0	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-127%
321-60-8	2-Fluorobiphenyl	25%		11-133%
1718-51-0	Terphenyl-d14	107%		15-187%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

**Client Sample ID:** A28-SOUTH SPOIL-102109  
**Lab Sample ID:** T40355-2  
**Matrix:** SO - Soil  
**Method:** SW846 8015  
**Project:** EnCana Oil & Gas (USA) Inc.

**Date Sampled:** 10/21/09  
**Date Received:** 10/22/09  
**Percent Solids:** 83.5

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE048875.D	1	10/27/09	FI	n/a	n/a	GEE2474
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.65 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	13.2	6.3	0.38	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	75%		46-127%
98-08-8	aaa-Trifluorotoluene	110%		44-120%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109				
<b>Lab Sample ID:</b>	T40355-2			<b>Date Sampled:</b>	10/21/09
<b>Matrix:</b>	SO - Soil			<b>Date Received:</b>	10/22/09
<b>Method:</b>	SW846 8015 M SW846 3550B			<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC216081.D	10	10/29/09	SS	10/22/09	OP13313	GCC991
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	186	98	32	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% <sup>a</sup>		33-115%		

(a) Outside control limits due to dilution.

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



## Report of Analysis

**Client Sample ID:** A28-SOUTH SPOIL-102109  
**Lab Sample ID:** T40355-2  
**Matrix:** SO - Soil  
**Project:** EnCana Oil & Gas (USA) Inc.

**Date Sampled:** 10/21/09  
**Date Received:** 10/22/09  
**Percent Solids:** 83.5

## Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	18.6	0.65	0.13	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Cadmium	0.55	0.34	0.069	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Chromium	27.3	0.65	0.045	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Copper	38.4	1.7	0.089	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Lead	26.5	0.65	0.26	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Mercury	0.042	0.018	0.00072	mg/kg	1	10/26/09	10/26/09 TW	SW846 7471A <sup>1</sup>	SW846 7471A <sup>5</sup>
Nickel	22.2	2.8	0.089	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>
Selenium	0.53 B	0.65	0.16	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Silver	0.26 B	0.65	0.052	mg/kg	1	10/26/09	10/26/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>4</sup>
Zinc	64.2	1.4	0.28	mg/kg	1	10/28/09	10/29/09 NS	SW846 6010B <sup>3</sup>	SW846 3050B <sup>6</sup>

- (1) Instrument QC Batch: MA4356  
 (2) Instrument QC Batch: MA4357  
 (3) Instrument QC Batch: MA4360  
 (4) Prep QC Batch: MP10519  
 (5) Prep QC Batch: MP10520  
 (6) Prep QC Batch: MP10539

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-2	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.48 B	2.0	mg/kg	1	10/29/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	26.8	2.7	mg/kg	1	10/29/09 12:00	KD	SW846 6010/7196A M
Solids, Percent	83.5		%	1	10/23/09	AA	SM 2540 G
Specific Conductivity	1210	1.0	umhos/cm	1	10/29/09 15:00	KD	EPA 120.1
pH	8.7		su	1	10/27/09 14:40	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-2A	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	1.83	0.20	0.0042	mg/l	1	10/26/09	10/28/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4359  
(2) Prep QC Batch: MP10526

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-2B	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	13000	120	0.35	mg/kg	10	10/27/09	10/28/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4360  
(2) Prep QC Batch: MP10525

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis



<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-2C	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	1150	25	0.18	mg/l	5	10/28/09	10/29/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>
Magnesium	209	25	0.039	mg/l	5	10/28/09	10/29/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>
Sodium	755	25	0.67	mg/l	5	10/28/09	10/29/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4362  
(2) Prep QC Batch: MP10545

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Report of Analysis

<b>Client Sample ID:</b>	A28-SOUTH SPOIL-102109	<b>Date Sampled:</b>	10/21/09
<b>Lab Sample ID:</b>	T40355-2C	<b>Date Received:</b>	10/22/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	83.5
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	5.37		ratio	1	10/29/09 17:50	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit



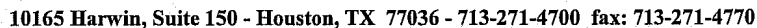
## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T040355

**T40355: Chain of Custody**  
**Page 1 of 4**



**Table 1:**  
Contaminants of Concern: Allowable Concentrations and Sampling Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS <sup>1</sup>	ANALYTICAL METHOD (SW846)
<i>Organic Compounds In Soil</i>		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg <sup>2</sup>	8260B
Toluene	85 mg/kg <sup>2</sup>	8260B
Ethylbenzene	100 mg/kg <sup>2</sup>	8260B
Xylenes (total)	175 mg/kg <sup>2</sup>	8260B
Acenaphthene	1,000 mg/kg <sup>2</sup>	8270C
Anthracene	1,000 mg/kg <sup>2</sup>	8270C
Benz(a)anthracene	0.22 mg/kg <sup>2</sup>	8270C
Benz(b)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Benz(k)fluoranthene	0.22 mg/kg <sup>2</sup>	8270C
Chrysene	22 mg/kg <sup>2</sup>	8270C
Dibenz(a,h)anthracene	0.022 mg/kg <sup>2</sup>	8270C
Fluoranthene	1,000 mg/kg <sup>2</sup>	8270C
Fluorene	1,000 mg/kg <sup>2</sup>	8270C
Indeno(1,2,3-cd)pyrene	0.22 mg/kg <sup>2</sup>	8270C
Naphthalene	23 mg/kg <sup>2</sup>	8270C
Pyrene	1,000 mg/kg <sup>2</sup>	8270C
<i>Inorganics In Soils</i>		
Electrical Conductivity (EC)	<4 mmho/cm or 2x background	8050
Sodium Adsorption Ratio (SAR)	<12 <sup>3</sup>	8050
pH	6-9	8045
<i>Metals In Soils</i>		
Arsenic	0.35 mg/kg <sup>2</sup>	6010B
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>	6010B
Boron (Hot Water Soluble)	2 mg/kg <sup>2</sup>	6010B
Cadmium	70 mg/kg <sup>2a</sup>	6010B
Chromium (III)	120,000 mg/kg <sup>2</sup>	6010B
Chromium (VI)	23 mg/kg <sup>2a</sup>	6010B
Copper	3,100 mg/kg <sup>2</sup>	6010B
Lead (inorganic)	400 mg/kg <sup>2</sup>	6010B
Mercury	23 mg/kg <sup>2</sup>	6010B
Nickel (soluble salts)	1,000 mg/kg <sup>2a</sup>	6010B
Selenium	1,000 mg/kg <sup>2a</sup>	6010B
Silver	350 mg/kg <sup>2</sup>	6010B
Zinc	23,000 mg/kg <sup>2</sup>	6010B
<i>Liquid Hydrocarbons In Soils and Ground Water</i>		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

<sup>1</sup> COGCC allowable concentrations based on Table 910-1. Consideration shall be given to background levels in native soils.

# SAMPLE INSPECTION FORM

Accutest Job Number: T40355 Client: ENCANA OIL & GAS Date/Time Received: 10/22/09 9:30

# of Coolers Received: 1 Thermometer #: 121 Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 2.6 #2:  #3:  #4:  #5:  #6:  #7:  #8:

Method of Delivery: ☒ FEDEX ☐ UPS ☐ Accutest Courier ☐ Greyhound ☐ Delivery ☐ Other

Airbill Numbers: 262 8706 6705 6339

## COOLER INFORMATION

- ☐ Custody seal missing or not intact
- ☐ Temperature criteria not met
- ☐ Wet ice received in cooler

## CHAIN OF CUSTODY

- ☐ Chain of Custody not received
- ☐ Sample D/T unclear or missing
- ☐ Analyses unclear or missing
- ☐ COC not properly executed

## SAMPLE INFORMATION

- ☐ Sample containers received broken
- ☐ VOC vials have headspace
- ☐ Sample labels missing or illegible
- ☒ ID on COC does not match label(s)
- ☐ D/T on COC does not match label(s)
- ☐ Sample/Bottles rec'd but no analysis on COC
- ☐ Sample listed on COC, but not received
- ☐ Bottles missing for requested analysis
- ☐ Insufficient volume for analysis
- ☐ Sample received improperly preserved

## TRIP BLANK INFORMATION

- ☐ Trip Blank on COC but not received
- ☐ Trip Blank received but not on COC
- ☐ Trip Blank not intact
- ☐ Received Water Trip Blank
- ☐ Received Soil TB

Number of Encores?   
Number of 5035 kits?   
Number of lab-filtered metals?

Summary of Discrepancies:

Bottle Labels DO NOT match COC

TECHNICIAN SIGNATURE/DATE: T Claunch 10/22/09

INFORMATION AND SAMPLE LABELING VERIFIED BY: GL 10/22/09

## CORRECTIVE ACTIONS

Client Representative Notified:

Date:

By Accutest Representative: Sylvia Garcia

Via: Phone Email

Client Instructions: ID was shortened - OK

\\mwalker\forisamplemanagement

T40355: Chain of Custody

Page 3 of 4

## SAMPLE RECEIPT LOG

JOB #: T 40355 DATE/TIME RECEIVED: 10/22/09 9:30  
CLIENT: ENCANA Oil & Gas INITIALS: TC

[illegible]

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewp

## T40355: Chain of Custody

Page 4 of 4



## GC/MS Volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T40355  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2641-MB	Z0053180.D	1	10/24/09	JL	n/a	n/a	VZ2641

The QC reported here applies to the following samples:

Method: SW846 8260B

T40355-1, T40355-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 70-121%
2037-26-5	Toluene-D8	107% 76-132%
460-00-4	4-Bromofluorobenzene	93% 73-165%
17060-07-0	1,2-Dichloroethane-D4	96% 57-122%

Blank Spike Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ2641-BS	Z0053178.D	1	10/23/09	JL	n/a	n/a	VZ2641

The QC reported here applies to the following samples: Method: SW846 8260B

T40355-1, T40355-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	47.2	94	70-114
100-41-4	Ethylbenzene	50	43.6	87	60-119
108-88-3	Toluene	50	48.8	98	68-115
1330-20-7	Xylene (total)	150	133	89	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-121%
2037-26-5	Toluene-D8	106%	76-132%
460-00-4	4-Bromofluorobenzene	95%	73-165%
17060-07-0	1,2-Dichloroethane-D4	88%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40354-3MS	Z0053185.D	1	10/24/09	JL	n/a	n/a	VZ2641
T40354-3MSD	Z0053186.D	1	10/24/09	JL	n/a	n/a	VZ2641
T40354-3	Z0053183.D	1	10/24/09	JL	n/a	n/a	VZ2641

The QC reported here applies to the following samples:

Method: SW846 8260B

T40355-1, T40355-2

CAS No.	Compound	T40354-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		61.8	50.8	82	48.4	78	5	70-114/38
100-41-4	Ethylbenzene	ND		61.8	44.2	71	43.8	71	1	60-119/40
108-88-3	Toluene	ND		61.8	59.9	97	54.5	88	9	68-115/38
1330-20-7	Xylene (total)	ND		186	95.2	51*	109	59*	14	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T40354-3	Limits
1868-53-7	Dibromofluoromethane	98%	98%	99%	70-121%
2037-26-5	Toluene-D8	119%	117%	122%	76-132%
460-00-4	4-Bromofluorobenzene	124%	111%	114%	73-165%
17060-07-0	1,2-Dichloroethane-D4	85%	84%	92%	57-122%



## GC/MS Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



## Method Blank Summary

Page 1 of 1

**Job Number:** T40355

**Account:** ENCACOP ENCANA

**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13321-MB	P06787.D	1	10/26/09	GJ	10/23/09	OP13321	EP329

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T40355-1, T40355-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	112% 10-127%
321-60-8	2-Fluorobiphenyl	100% 11-133%
1718-51-0	Terphenyl-d14	119% 15-187%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T40355

**Account:** ENCACOP ENCANA

**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13321-BS	P06788.D	1	10/26/09	GJ	10/23/09	OP13321	EP329

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T40355-1, T40355-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	145	87	18-118
208-96-8	Acenaphthylene	167	145	87	35-125
120-12-7	Anthracene	167	155	93	24-116
56-55-3	Benzo(a)anthracene	167	173	104	32-132
50-32-8	Benzo(a)pyrene	167	161	97	36-130
205-99-2	Benzo(b)fluoranthene	167	185	111	35-134
191-24-2	Benzo(g,h,i)perylene	167	165	99	18-149
207-08-9	Benzo(k)fluoranthene	167	182	109	30-131
218-01-9	Chrysene	167	168	101	37-124
53-70-3	Dibenzo(a,h)anthracene	167	177	106	23-150
206-44-0	Fluoranthene	167	175	105	28-118
86-73-7	Fluorene	167	157	94	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	173	104	18-150
90-12-0	1-Methylnaphthalene	167	151	91	10-128
91-57-6	2-Methylnaphthalene	167	107	64	28-113
91-20-3	Naphthalene	167	141	85	31-106
85-01-8	Phenanthrene	167	150	90	37-112
129-00-0	Pyrene	167	175	105	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	87%	10-127%
321-60-8	2-Fluorobiphenyl	96%	11-133%
1718-51-0	Terphenyl-d14	111%	15-187%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T40355  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13321-MS	P06791.D	1	10/26/09	GJ	10/23/09	OP13321	EP329
OP13321-MSD	P06792.D	1	10/26/09	GJ	10/23/09	OP13321	EP329
T40355-1	P06790.D	1	10/26/09	GJ	10/23/09	OP13321	EP329

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T40355-1, T40355-2

CAS No.	Compound	T40355-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		198	146	74	185	94	24	10-153/80
208-96-8	Acenaphthylene	ND		198	146	74	207	105	35	10-144/71
120-12-7	Anthracene	ND		198	124	63	131	67	5	10-176/57
56-55-3	Benzo(a)anthracene	1.4	J	198	197	99	218	110	10	10-174/73
50-32-8	Benzo(a)pyrene	ND		198	176	89	194	99	10	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		198	234	118	245	125	5	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		198	122	62	143	73	16	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		198	188	95	210	107	11	10-170/94
218-01-9	Chrysene	6.5	J	198	185	90	201	99	8	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		198	154	78	179	91	15	10-192/74
206-44-0	Fluoranthene	4.5	J	198	223	110	258	129	15	10-141/73
86-73-7	Fluorene	ND		198	157	79	190	97	19	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		198	144	73	169	86	16	10-150/73
90-12-0	1-Methylnaphthalene	15.7		198	190	88	237	113	22	10-154/82
91-57-6	2-Methylnaphthalene	25.1		198	41.0	8*	63.3	19	43	10-171/75
91-20-3	Naphthalene	5.0	J	198	54.0	25	53.9	25	0	10-138/82
85-01-8	Phenanthrene	38.2		198	195	79	203	84	4	10-191/77
129-00-0	Pyrene	12.4		198	220	105	226	109	3	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T40355-1	Limits
4165-60-0	Nitrobenzene-d5	52%	63%	79%	10-127%
321-60-8	2-Fluorobiphenyl	11%	48%	47%	11-133%
1718-51-0	Terphenyl-d14	119%	125%	117%	15-187%



## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2474-MB	EE048858.D	1	10/26/09	FI	n/a	n/a	GEE2474

The QC reported here applies to the following samples: Method: SW846 8015

T40355-1, T40355-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.10	0.0060	mg/kg	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	68%	46-127%
98-08-8	aaa-Trifluorotoluene	111%	44-120%

Blank Spike Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2474-BS	EE048853.D	1	10/26/09	FI	n/a	n/a	GEE2474

The QC reported here applies to the following samples: Method: SW846 8015

T40355-1, T40355-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.351	88	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	83%	46-127%
98-08-8	aaa-Trifluorotoluene	118%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T40398-1MS	EE048885.D	1	10/27/09	FI	n/a	n/a	GEE2474
T40398-1MSD	EE048886.D	1	10/27/09	FI	n/a	n/a	GEE2474
T40398-1	EE048868.D	1	10/26/09	FI	n/a	n/a	GEE2474

The QC reported here applies to the following samples: Method: SW846 8015

T40355-1, T40355-2

CAS No.	Compound	T40398-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		99.9	97.9	98	93.3	93	5	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T40398-1	Limits
460-00-4	4-Bromofluorobenzene	92%	89%	68%	46-127%
98-08-8	aaa-Trifluorotoluene	116%	118%	113%	44-120%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-MB	CC216076.D	1	10/29/09	SS	10/22/09	OP13313	GCC991

The QC reported here applies to the following samples: Method: SW846 8015 M

T40355-1, T40355-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	70% 33-115%

8.1.1  
8

Blank Spike Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-BS	CC216077.D 1		10/29/09	SS	10/22/09	OP13313	GCC991

The QC reported here applies to the following samples: Method: SW846 8015 M

T40355-1, T40355-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	32.9	14.7	45	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	34%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T40355  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13313-MS	CC216078.D	5	10/29/09	SS	10/22/09	OP13313	GCC991
OP13313-MSD	CC216079.D	1	10/29/09	SS	10/22/09	OP13313	GCC991
T40106-1	CC216083.D	50	10/29/09	SS	10/23/09	OP13313	GCC991

The QC reported here applies to the following samples: Method: SW846 8015 M

T40355-1, T40355-2

CAS No.	Compound	T40106-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	3510		34.4	4600	3169* <sup>a</sup>	417	-9130* <sup>a</sup>	167*	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T40106-1	Limits
84-15-1	o-Terphenyl	68%	0% <sup>*</sup>	0% <sup>*</sup> <sup>b</sup>	33-115%

(a) Outside control limits due to high level in sample relative to spike amount.  
(b) Outside control limits due to dilution.



## Metals Analysis

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10519  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/26/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.021	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.0045	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.044	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	-0.013	<0.50
Silver	0.50	.043	.04	0.0065	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP10519: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10519  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

10/26/09

10/26/09

	T39939-6			QC	T39939-6		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	9.1	8.4	8.0	0-20	9.1	27.7	25.4	73.2N	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium	25.8	24.6	4.8	0-20	25.8	39.7	25.4	54.7N	80-120
Cobalt									
Copper	anr								
Iron									
Lead	16.7	16.4	1.8	0-20	16.7	37.1	25.4	80.3	80-120
Magnesium									
Manganese									
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	20.0	25.4	78.7N	80-120
Silver	0.20	0.18	10.5	0-20	0.20	12.0	25.4	46.5N	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	anr								

Associated samples MP10519: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10519  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/26/09

Metal	T39939-6 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	9.1	36.0	27.4	98.1	26.1 (a)	20
Barium	anr					
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium	25.8	52.7	27.4	98.1	28.1 (a)	20
Cobalt						
Copper	anr					
Iron						
Lead	16.7	42.7	27.4	94.8	14.0	20
Magnesium						
Manganese						
Molybdenum	anr					
Nickel	anr					
Potassium						
Selenium	0.0	20.7	27.4	75.5N	3.4	20
Silver	0.20	12.4	27.4	44.5N	3.3	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP10519: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested  
(a) High RPD due to possible matrix interference.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10519  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/26/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	129	158	81.6	82-118
Barium	anr			
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	70.5	89.5	78.8	79-121
Cobalt				
Copper				
Iron				
Lead	140	172	81.4	79-120
Magnesium				
Manganese				
Molybdenum	anr			
Nickel				
Potassium				
Selenium	120	148	81.1	78-121
Silver	58.0	66	87.9	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10519: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



SERIAL DILUTION RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10519  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 10/26/09

Metal	T39939-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	144	176	23.0*(a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	405	504	24.5*(a)	0-10
Cobalt				
Copper	anr			
Iron				
Lead	262	326	24.3*(a)	0-10
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	anr			
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	3.16	5.00	58.2 (b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP10519: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10520  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 10/26/09

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0041	.00066	-0.0024	<0.017

Associated samples MP10520: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10520  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 10/26/09 10/26/09

Metal	T39944-1 Original DUP		RPD	QC Limits	T39944-1 Original MS		Spikelot HGTXWS1 % Rec		QC Limits
Mercury	0.0	0.015	200.0(a)	0-20	0.0	0.30	0.259	115.9	75-125

Associated samples MP10520: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10520  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 10/26/09

Metal	T39944-1 Original	MSD	Spike lot HGTXWS1	% Rec	MSD RPD	QC Limit
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Mercury	0.0	0.30	0.255	117.7	0.0	
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Associated samples MP10520: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 10/26/09

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
Mercury	9.4	7.34	128.1 72-128

Associated samples MP10520: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/27/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.12	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05		
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065		
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2		

Associated samples MP10525: T40355-1B, T40355-2B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/27/09

10/27/09

Metal	T39942-1B Original	DUP	RPD	QC Limits	T39942-1B Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium	395	393	0.5	0-20	395	367	21	-133.1(a	80-120
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10525: T40355-1B, T40355-2B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/27/09

Metal	T39942-1B Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic					
Barium	395	408	22.1	58.9 (a)	10.6
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP10525: T40355-1B, T40355-2B

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Prep Date: 10/27/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	19.1	20	95.5	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10525: T40355-1B, T40355-2B

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T40355  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10525  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 10/27/09

Metal	T39942-1B Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	6950	8330	19.8*(a)	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10525: T40355-1B, T40355-2B

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested  
 (a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 10/26/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1	-8.5	<100
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35		
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8		
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130		
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10526: T40355-1A, T40355-2A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

10/26/09

10/26/09

Metal	T39878-4A Original	DUP	RPD	QC Limits	T39878-4A Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	461	260	55.8*(a)	0-20	461	1130	100	89.5 (b)	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10526: T40355-1A, T40355-2A

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible matrix interference.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 10/26/09

Metal	T39878-4A Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron	461	1090	100	85.9 (a)	3.6
Cadmium					20
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP10526: T40355-1A, T40355-2A

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



SERIAL DILUTION RESULTS SUMMARY

Login Number: T40355  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10526  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 10/26/09

Metal	T39878-4A		QC	
	Original	SDL 1:5	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	231	192	16.8*(a)	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10526: T40355-1A, T40355-2A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (anr) Analyte not requested  
 (a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10539  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/28/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0070	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035		
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.00050	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2		
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.0045	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12		
Silver	0.50	.043	.04		
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.0050	<1.0

Associated samples MP10539: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10539  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

10/28/09

10/28/09

	T39939-6			QC	T39939-6		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium	0.27	0.17	45.5 (a)	0-20	0.27	24.4	28.2	85.6	80-120
Calcium									
Chromium									
Cobalt									
Copper	15.8	16.1	1.9	0-20	15.8	39.7	28.2	84.8	80-120
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel	46.2	37.9	19.7	0-20	46.2	61.3	28.2	53.6N	80-120
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	60.8	60.3	0.8	0-20	60.8	74.2	28.2	47.6N	80-120

Associated samples MP10539: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10539  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/28/09

Metal	T39939-6 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium	0.27	22.1	27.4	79.5N	9.9	20
Calcium						
Chromium						
Cobalt						
Copper	15.8	41.1	27.4	92.2	3.5	20
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel	46.2	65.9	27.4	71.8N	7.2	20
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	60.8	81.1	27.4	74.0N	8.9	20

Associated samples MP10539: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10539  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 10/28/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	163	187	87.2	82-118
Calcium				
Chromium				
Cobalt				
Copper	123	129	95.3	84-117
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel	90.6	99	91.5	81-119
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	345	394	87.6	80-119

Associated samples MP10539: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

9.5.3

6

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10539  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 10/28/09

Metal	T39939-6 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	4.13	4.54	9.9	0-10
Calcium				
Chromium				
Cobalt				
Copper	244	275	12.9*(a)	0-10
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel	712	856	20.3*(a)	0-10
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	936	1140	22.0*(a)	0-10

Associated samples MP10539: T40355-1, T40355-2

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested  
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10545  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date: 10/28/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	138	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	44.1	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	312	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP10545: T40355-1C, T40355-2C

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10545  
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B  
Units: ug/l

Prep Date: 10/28/09

Metal	T40355-1C Original DUP		RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	155000	134000	14.5	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	28700	31900	10.6	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	2000000	1980000	1.0	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10545: T40355-1C, T40355-2C

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested



## General Chemistry

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18489	2.0	<2.0	mg/kg	40	39.5	98.7	80-120%
Specific Conductivity	GN18499	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN18489: T40355-1, T40355-2  
Batch GN18499: T40355-1, T40355-2  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18489	T40355-1	mg/kg	1.6 B	<2.0	8.5	0-20%
Solids, Percent	GN18439	T40117-1	%	79.8	78.9	1.1	0-5%
Specific Conductivity	GN18499	T40355-1	umhos/cm	1730	1730	0.1	0-20%
pH	GN18471	T40355-2	su	8.7	8.7	0.0	0-20%

Associated Samples:

Batch GN18439: T40355-1, T40355-2

Batch GN18471: T40355-1, T40355-2

Batch GN18489: T40355-1, T40355-2

Batch GN18499: T40355-1, T40355-2

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T40355  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18489	T40355-1	mg/kg	1.6 B	40	36.4	86.9	75-125%

Associated Samples:  
Batch GN18489: T40355-1, T40355-2  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits



11/18/09

## Technical Report for

ENCANA

EnCana Oil & Gas (USA) Inc.

A28 Pit Clearance

Accutest Job Number: T41656

Sampling Date: 11/05/09

Report to:

EnCana  
2717 Co. Rd. 215  
Parachute, CO 81635  
brett.middleton@encana.com; christopher.hines@encana.com  
  
ATTN: Chris Hines

Total number of pages in report: **48**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Paul K Canevaro*

Paul Canevaro  
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)  
OK (9103) UT(7132714700)

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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Sample Results .....</b>	<b>7</b>
<b>3.1:</b> T41656-1: A28-PIT-110509 .....	8
<b>3.2:</b> T41656-1A: A28-PIT-110509 .....	13
<b>Section 4: Misc. Forms .....</b>	<b>14</b>
<b>4.1:</b> Chain of Custody .....	15
<b>Section 5: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>18</b>
<b>5.1:</b> Method Blank Summary .....	19
<b>5.2:</b> Blank Spike Summary .....	20
<b>5.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	21
<b>Section 6: GC Volatiles - QC Data Summaries .....</b>	<b>22</b>
<b>6.1:</b> Method Blank Summary .....	23
<b>6.2:</b> Blank Spike Summary .....	24
<b>6.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	25
<b>Section 7: GC Semi-volatiles - QC Data Summaries .....</b>	<b>26</b>
<b>7.1:</b> Method Blank Summary .....	27
<b>7.2:</b> Blank Spike Summary .....	28
<b>7.3:</b> Matrix Spike/Matrix Spike Duplicate Summary .....	29
<b>Section 8: Metals Analysis - QC Data Summaries .....</b>	<b>30</b>
<b>8.1:</b> Prep QC MP10612: As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn .....	31
<b>8.2:</b> Prep QC MP10625: Hg .....	36
<b>8.3:</b> Prep QC MP10656: B .....	40
<b>Section 9: General Chemistry - QC Data Summaries .....</b>	<b>45</b>
<b>9.1:</b> Method Blank and Spike Results Summary .....	46
<b>9.2:</b> Duplicate Results Summary .....	47
<b>9.3:</b> Matrix Spike Results Summary .....	48



Sample Summary

ENCANA

Job No: T41656

EnCana Oil & Gas (USA) Inc.  
Project No: A28 Pit Clearance

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
T41656-1	11/05/09	12:20	CH	11/06/09	SO	Soil	A28-PIT-110509
T41656-1A	11/05/09	12:20	CH	11/06/09	SO	Soil	A28-PIT-110509

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** ENCANA

**Job No** T41656

**Site:** EnCana Oil & Gas (USA) Inc.

**Report Date** 11/18/2009 10:58:54 A

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 11/05/2009 and were received at Accutest on 11/06/2009 properly preserved, at 4.8 Deg. C and intact. These Samples received an Accutest job number of T41656. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP13432
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T41708-1MS, T41708-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41656-1 have surrogates outside control limits. Probable cause due to matrix interference.
- T41656-1: Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

### Volatiles by GC By Method SW846 8015

<b>Matrix</b> SO	<b>Batch ID:</b> GEE2499
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T41710-1MS, T41710-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GC By Method SW846 8015 M

<b>Matrix</b> SO	<b>Batch ID:</b> OP13458
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41656-1MSD, T41656-1MS, T41656-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for TPH (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Sample(s) OP13458-MS, OP13458-MSD, T41656-1 have surrogates outside control limits. Probable cause due to matrix interference.

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP10656

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T39947-4ADUP, T39947-4AMS, T39947-4AMSD, T39947-4ASDL were used as the QC samples for metals.

**Matrix** SO

**Batch ID:** MP10612

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41666-1DUP, T41666-1MS, T41666-1MSD, T41666-1SDL, T41666-1DUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Chromium, Nickel, Zinc are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Duplicate for Arsenic, Cadmium, Silver are outside control limits for sample MP10612-D1. High RPD due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Selenium, Silver, Arsenic, Chromium, Copper, Lead, Nickel, Zinc are outside control limits for sample MP10612-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

## Metals By Method SW846 7471A

**Matrix** SO

**Batch ID:** MP10625

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41586-1MS, T41586-1MSD, T41586-1DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Mercury are outside control limits for sample MP10625-D1. High RPD due to possible matrix interference.

## Wet Chemistry By Method EPA 120.1

**Matrix** AQ

**Batch ID:** GN18834

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T41656-1DUP were used as the QC samples for Specific Conductivity.

## Wet Chemistry By Method SM 2540 G

**Matrix** SO

**Batch ID:** GN18676

- Sample(s) T41656-1DUP were used as the QC samples for Solids, Percent.

## Wet Chemistry By Method SW846 3060/7196A

**Matrix** SO

**Batch ID:** GN18647

- All method blanks for this batch meet method specific criteria.
- Sample(s) T41438-1DUP, T41438-1MS were used as the QC samples for Chromium, Hexavalent.

## Wet Chemistry By Method SW846 6010/7196A M

**Matrix** SO

**Batch ID:** R19650

- T41656-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

## Wet Chemistry By Method SW846 9045C

**Matrix** SO

**Batch ID:** GN18662

- Sample(s) T41789-14DUP were used as the QC samples for pH.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used





## Sample Results

## Report of Analysis

## Report of Analysis

Client Sample ID: A28-PIT-110509

Lab Sample ID: T41656-1

Date Sampled: 11/05/09

Matrix: SO - Soil

Date Received: 11/06/09

Method: SW846 8270C BY SIM SW846 3550B

Percent Solids: 82.3

Project: EnCana Oil &amp; Gas (USA) Inc.

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	H35964.D	1	11/10/09	SC	11/09/09	OP13432	EH1934
Run #2 <sup>a</sup>	H36001.D	10	11/12/09	SC	11/09/09	OP13432	EH1936

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2	30.6 g	1.0 ml

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.0	1.3	ug/kg	
208-96-8	Acenaphthylene	ND	8.0	2.8	ug/kg	
120-12-7	Anthracene	ND	8.0	1.5	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.0	1.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.0	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.0	4.2	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	8.0	8.0	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.0	5.2	ug/kg	
218-01-9	Chrysene	ND	8.0	2.0	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	8.0	7.7	ug/kg	
206-44-0	Fluoranthene	3.8	8.0	1.7	ug/kg	J
86-73-7	Fluorene	ND	8.0	2.8	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.0	6.0	ug/kg	
90-12-0	1-Methylnaphthalene	8.8	8.0	1.5	ug/kg	
91-57-6	2-Methylnaphthalene	18.8	8.0	1.4	ug/kg	
91-20-3	Naphthalene	9.0	8.0	1.2	ug/kg	
85-01-8	Phenanthrene	23.1	8.0	1.1	ug/kg	
129-00-0	Pyrene	14.1	8.0	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%	42%	10-127%
321-60-8	2-Fluorobiphenyl	16%	83%	11-133%
1718-51-0	Terphenyl-d14	220% <sup>b</sup>	94%	15-187%

(a) Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

(b) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT-110509		
<b>Lab Sample ID:</b>	T41656-1	<b>Date Sampled:</b>	11/05/09
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b>	11/06/09
<b>Method:</b>	SW846 8015	<b>Percent Solids:</b>	82.3
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE049406.D	1	11/13/09	FI	n/a	n/a	GEE2499
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.28 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	15.3	6.8	0.41	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	117%		46-127%
98-08-8	aaa-Trifluorotoluene	109%		44-120%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	A28-PIT-110509	<b>Date Sampled:</b>	11/05/09
<b>Lab Sample ID:</b>	T41656-1	<b>Date Received:</b>	11/06/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	82.3
<b>Method:</b>	SW846 8015 M SW846 3550B		
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC216445.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	381	100	33	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% <sup>a</sup>		33-115%		

(a) Outside control limits due to dilution.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: A28-PIT-110509

Lab Sample ID: T41656-1

Matrix: SO - Soil

Date Sampled: 11/05/09

Date Received: 11/06/09

Percent Solids: 82.3

Project: EnCana Oil &amp; Gas (USA) Inc.

## Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	26.7	0.67	0.13	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Cadmium	1.0	0.33	0.067	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Chromium	25.5	0.67	0.047	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Copper	30.4	1.7	0.087	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Lead	15.9	0.67	0.27	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Mercury	0.033	0.018	0.00071	mg/kg	1	11/11/09	11/11/09 TW	SW846 7471A <sup>1</sup>	SW846 7471A <sup>4</sup>
Nickel	17.7	2.7	0.087	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Selenium	0.16 U	0.67	0.16	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Silver	0.21 B	0.67	0.053	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>
Zinc	61.8	1.3	0.27	mg/kg	1	11/09/09	11/12/09 NS	SW846 6010B <sup>2</sup>	SW846 3050B <sup>3</sup>

(1) Instrument QC Batch: MA4388

(2) Instrument QC Batch: MA4389

(3) Prep QC Batch: MP10612

(4) Prep QC Batch: MP10625

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result &lt; MDL

B = Indicates a result &gt; = MDL but &lt; RL

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT-110509	<b>Date Sampled:</b>	11/05/09
<b>Lab Sample ID:</b>	T41656-1	<b>Date Received:</b>	11/06/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	82.3
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.0 B	2.0	mg/kg	1	11/10/09 12:00	KD	SW846 3060/7196A
Chromium, Trivalent <sup>a</sup>	24.5	2.7	mg/kg	1	11/12/09 07:35	NS	SW846 6010/7196A M
Solids, Percent	82.3		%	1	11/11/09	AA	SM 2540 G
Specific Conductivity	1220	1.0	umhos/cm	1	11/17/09 16:30	KD	EPA 120.1
pH	9.2		su	1	11/10/09 13:00	EV	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	A28-PIT-110509	<b>Date Sampled:</b>	11/05/09
<b>Lab Sample ID:</b>	T41656-1A	<b>Date Received:</b>	11/06/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	82.3
<b>Project:</b>	EnCana Oil & Gas (USA) Inc.		

Hot Water Soluble Boron Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Boron	2.26	0.20	0.0042	mg/l	1	11/15/09	11/16/09 NS	SW846 6010B <sup>1</sup>	LADNR 29B <sup>2</sup>

(1) Instrument QC Batch: MA4397  
(2) Prep QC Batch: MP10656

RL = Reporting Limit  
MDL = Method Detection Limit  
U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Misc. Forms

### Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody





# SAMPLE INSPECTION FORM

Accutest Job Number: T41656 Client: En Cans Oil & Gas Date/Time Received: 11/16/09 100  
 # of Coolers Received: 1 Thermometer #: 12-1 Temperature Adjustment Factor: +0.4  
 Cooler Temps: #1: 4.8 #2: \_\_\_\_\_ #3: \_\_\_\_\_ #4: \_\_\_\_\_ #5: \_\_\_\_\_ #6: \_\_\_\_\_ #7: \_\_\_\_\_ #8: \_\_\_\_\_  
 Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other  
 Airbill Numbers: \_\_\_\_\_

## COOLER INFORMATION

- ☐ Custody seal missing or not intact
- ☐ Temperature criteria not met
- ☐ Wet ice received in cooler

## CHAIN OF CUSTODY

- ☐ Chain of Custody not received
- ☐ Sample D/T unclear or missing
- ☐ Analyses unclear or missing
- ☐ COC not properly executed

## SAMPLE INFORMATION

- ☐ Sample containers received broken
- ☐ VOC vials have headspace
- ☐ Sample labels missing or illegible
- ☐ ID on COC does not match label(s)
- ☐ D/T on COC does not match label(s)
- ☐ Sample/Bottles recd but no analysis on COC
- ☐ Sample listed on COC, but not received
- ☐ Bottles missing for requested analysis
- ☐ Insufficient volume for analysis
- ☐ Sample received improperly preserved

## TRIP BLANK INFORMATION

- ☐ Trip Blank on COC but not received
- ☐ Trip Blank received but not on COC
- ☐ Trip Blank not intact
- ☐ Received Water Trip Blank
- ☐ Received Soil TB

Number of Encores? \_\_\_\_\_  
 Number of 5035 kits? \_\_\_\_\_  
 Number of lab-filtered metals? \_\_\_\_\_

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: \_\_\_\_\_

INFORMATION AND SAMPLE LABELING VERIFIED BY: \_\_\_\_\_

## CORRECTIVE ACTIONS

Client Representative Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Accutest Representative: \_\_\_\_\_

Via: \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Client Instructions:

T41656: Chain of Custody

Page 2 of 3

JOB #: T41656 DATE/TIME RECEIVED: 11/06/07 0900

CLIENT: EnCana Oil & Gas INITIALS: FF

## 4.1

Rev 8/13/01 ewp

17 of 48  
**ACCUTEST.**  
T41656 Laboratories



## GC/MS Semi-volatiles

5

### QC Data Summaries

---

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** T41656  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-MB	P07156.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T41656-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	58% 10-127%
321-60-8	2-Fluorobiphenyl	36% 11-133%
1718-51-0	Terphenyl-d14	32% 15-187%

## Blank Spike Summary

Page 1 of 1

**Job Number:** T41656  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-BS	P07157.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T41656-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	104	62	18-118
208-96-8	Acenaphthylene	167	118	71	35-125
120-12-7	Anthracene	167	146	88	24-116
56-55-3	Benzo(a)anthracene	167	150	90	32-132
50-32-8	Benzo(a)pyrene	167	131	79	36-130
205-99-2	Benzo(b)fluoranthene	167	140	84	35-134
191-24-2	Benzo(g,h,i)perylene	167	171	103	18-149
207-08-9	Benzo(k)fluoranthene	167	170	102	30-131
218-01-9	Chrysene	167	157	94	37-124
53-70-3	Dibenzo(a,h)anthracene	167	158	95	23-150
206-44-0	Fluoranthene	167	156	94	28-118
86-73-7	Fluorene	167	120	72	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	159	95	18-150
90-12-0	1-Methylnaphthalene	167	105	63	10-128
91-57-6	2-Methylnaphthalene	167	122	73	28-113
91-20-3	Naphthalene	167	116	70	31-106
85-01-8	Phenanthrene	167	146	88	37-112
129-00-0	Pyrene	167	156	94	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	90%	10-127%
321-60-8	2-Fluorobiphenyl	105%	11-133%
1718-51-0	Terphenyl-d14	104%	15-187%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** T41656  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13432-MS	P07162.D	1	11/10/09	GJ	11/09/09	OP13432	EP344
OP13432-MSD	P07163.D	1	11/10/09	GJ	11/09/09	OP13432	EP344
T41708-1	P07161.D	1	11/10/09	GJ	11/09/09	OP13432	EP344

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T41656-1

CAS No.	Compound	T41708-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		195	75.7	39	80.5	41	6	10-153/80
208-96-8	Acenaphthylene	ND		195	75.8	39	79.1	40	4	10-144/71
120-12-7	Anthracene	ND		195	136	70	156	80	14	10-176/57
56-55-3	Benzo(a)anthracene	ND		195	143	73	177	90	21	10-174/73
50-32-8	Benzo(a)pyrene	ND		195	123	63	154	79	22	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		195	148	76	190	97	25	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		195	141	72	165	84	16	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		195	141	72	176	90	22	10-170/94
218-01-9	Chrysene	ND		195	144	74	179	91	22	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		195	145	74	171	87	16	10-192/74
206-44-0	Fluoranthene	ND		195	138	71	180	92	26	10-141/73
86-73-7	Fluorene	ND		195	85.4	44	92.2	47	8	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		195	142	73	168	86	17	10-150/73
90-12-0	1-Methylnaphthalene	ND		195	68.2	35	71.7	37	5	10-154/82
91-57-6	2-Methylnaphthalene	10.3		195	102	47	102	47	0	10-171/75
91-20-3	Naphthalene	ND		195	84.6	43	94.1	48	11	10-138/82
85-01-8	Phenanthrene	1.4	J	195	134	68	158	80	16	10-191/77
129-00-0	Pyrene	ND		195	178	91	224	114	23	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T41708-1	Limits
4165-60-0	Nitrobenzene-d5	56%	53%	77%	10-127%
321-60-8	2-Fluorobiphenyl	56%	58%	59%	11-133%
1718-51-0	Terphenyl-d14	85%	122%	115%	15-187%



## GC Volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



## Method Blank Summary

Page 1 of 1

**Job Number:** T41656  
**Account:** ENCACOP ENCANA  
**Project:** EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2499-MB	EE049386.D	1	11/13/09	FI	n/a	n/a	GEE2499

The QC reported here applies to the following samples:

Method: SW846 8015

T41656-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	96%	46-127%
98-08-8	aaa-Trifluorotoluene	106%	44-120%

Blank Spike Summary

Job Number: T41656  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2499-BS	EE049382.D	1	11/12/09	FI	n/a	n/a	GEE2499

The QC reported here applies to the following samples: Method: SW846 8015

T41656-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.355	89	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	99%	46-127%
98-08-8	aaa-Trifluorotoluene	110%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T41656  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T41710-1MS	EE049392.D	1	11/13/09	FI	n/a	n/a	GEE2499
T41710-1MSD	EE049393.D	1	11/13/09	FI	n/a	n/a	GEE2499
T41710-1	EE049391.D	1	11/13/09	FI	n/a	n/a	GEE2499

The QC reported here applies to the following samples: Method: SW846 8015

T41656-1

CAS No.	Compound	T41710-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		23.7	22.9	96	21.6	91	6	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T41710-1	Limits
460-00-4	4-Bromofluorobenzene	104%	107%	95%	46-127%
98-08-8	aaa-Trifluorotoluene	103%	110%	106%	44-120%



## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T41656  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-MB	CC216441.D 1		11/12/09	SS	11/11/09	OP13458	GCC1004

The QC reported here applies to the following samples: Method: SW846 8015 M

T41656-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.2	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	40% 33-115%

7.1.1  
7

Blank Spike Summary

Job Number: T41656  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-BS	CC216442.D 1		11/12/09	SS	11/11/09	OP13458	GCC1004

The QC reported here applies to the following samples: Method: SW846 8015 M

T41656-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	32.4	21.4	66	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	43%	33-115%

7.2.1  
7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T41656  
Account: ENCACOP ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP13458-MS	CC216443.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004
OP13458-MSD	CC216444.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004
T41656-1	CC216445.D	10	11/12/09	SS	11/11/09	OP13458	GCC1004

The QC reported here applies to the following samples: Method: SW846 8015 M

T41656-1

CAS No.	Compound	T41656-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	381		40.1	505	309* a	485	262* a	4	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T41656-1	Limits
84-15-1	o-Terphenyl	0% * b	0% * b	0% * b	33-115%

- (a) Outside control limits due to high level in sample relative to spike amount.  
(b) Outside control limits due to dilution.



## Metals Analysis

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10612  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 11/09/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.091	<0.50
Barium	10	.007	.03		
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.0095	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.0010	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	-0.020	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	-0.014	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	0.096	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.019	<0.50
Silver	0.50	.043	.04	0.0080	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	0.0	<1.0

Associated samples MP10612: T41656-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10612  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

11/09/09

11/09/09

	T41666-1			QC	T41666-1		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	13.9	10	32.6* (a)	0-20	13.9	34.1	24.4	82.7	80-120
Barium	anr								
Beryllium									
Boron	anr								
Cadmium	0.64	0.45	34.9 (b)	0-20	0.64	20.6	24.4	81.7	80-120
Calcium									
Chromium	11.8	11.6	1.7	0-20	11.8	30.8	24.4	77.8N	80-120
Cobalt									
Copper	10.9	10.4	4.7	0-20	10.9	35.3	24.4	99.9	80-120
Iron									
Lead	10.7	10	6.8	0-20	10.7	31.9	24.4	86.8	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	9.3	8.2	12.6	0-20	9.3	28.1	24.4	76.9N	80-120
Potassium									
Selenium	0.44	0.37	17.3	0-20	0.44	21.7	24.4	87.0	80-120
Silver	0.22	0.16	31.6 (b)	0-20	0.22	20.4	24.4	82.6	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	36.8	31.8	14.6	0-20	36.8	53.4	24.4	67.9N	80-120

Associated samples MP10612: T41656-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible sample nonhomogeneity.

(b) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10612  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 11/09/09

Metal	T41666-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	13.9	29.5	4.77	326.8N	14.5	20
Barium	anr					
Beryllium						
Boron	anr					
Cadmium	0.64	19.2	4.77	388.8N	7.0	20
Calcium						
Chromium	11.8	28.0	4.77	339.4N	9.5	20
Cobalt						
Copper	10.9	30.9	4.77	419.0N	13.3	20
Iron						
Lead	10.7	29.7	4.77	398.1N	7.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel	9.3	27.3	4.77	377.1N	2.9	20
Potassium						
Selenium	0.44	20.0	4.77	409.8N	8.2	20
Silver	0.22	18.8	4.77	389.3N	8.2	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	36.8	50.6	4.77	289.1(a)	5.4	20

Associated samples MP10612: T41656-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10612  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 11/09/09

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	150	158	94.9	82-118
Barium	anr			
Beryllium				
Boron	anr			
Cadmium	161	187	86.1	82-118
Calcium				
Chromium	77.6	89.5	86.7	79-121
Cobalt				
Copper	128	129	99.2	84-117
Iron				
Lead	156	172	90.7	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	87.5	99	88.4	81-119
Potassium				
Selenium	138	148	93.2	78-121
Silver	60.1	66	91.1	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	338	394	85.8	80-119

Associated samples MP10612: T41656-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

8.1.3

8

# SERIAL DILUTION RESULTS SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10612  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: ug/l

Prep Date: 11/09/09

Metal	T41666-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	217	248	14.4*(a)	0-10
Barium	anr			
Beryllium				
Boron	anr			
Cadmium	10.0	9.40	6.1	0-10
Calcium				
Chromium	184	217	18.0*(a)	0-10
Cobalt				
Copper	170	188	10.3*(a)	0-10
Iron				
Lead	167	200	19.5*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	145	185	27.6*(a)	0-10
Potassium				
Selenium	6.88	0.00	100.0(b)	0-10
Silver	3.48	5.15	48.0 (b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	574	719	25.2*(a)	0-10

Associated samples MP10612: T41656-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10625  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 11/11/09

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0041	.00066	-0.0011	<0.017

Associated samples MP10625: T41656-1

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10625  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date:

11/11/09

11/11/09

Metal	T41586-1		QC	T41586-1		Spikelot	% Rec	QC
	Original	DUP	RPD	Original	MS	HGTXWS1		Limits
Mercury	0.044	0.024	58.8*(a)	0-20	0.044 0.33	0.302	94.6	75-125

Associated samples MP10625: T41656-1

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) High RPD due to possible matrix interference.

8.2.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10625  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 11/11/09

Metal	T41586-1		SpikeLot		MSD	QC
	Original	MSD	HGTXWS1	% Rec		
Mercury	0.044	0.31	0.288	92.5	6.3	

Associated samples MP10625: T41656-1

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

8.2.2  
 8



Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Methods: SW846 7471A  
Units: mg/kg

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
Mercury	6.9	7.34	94.0 72-128

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 11/15/09

Metal	RL	IDL	MDL	MB raw	final
Aluminum	400	33	34		
Antimony	10	4.5	6		
Arsenic	10	3.5	4		
Barium	400	.28	5.4		
Beryllium	10	.22	.4		
Boron	200	2.2	4.2	-47	<200
Cadmium	8.0	.5	.6		
Calcium	10000	11	70		
Chromium	20	2.2	3.8		
Cobalt	100	1	1.6		
Copper	50	1.2	12		
Iron	200	26	26		
Lead	6.0	3.2	3.4		
Magnesium	10000	13	16		
Manganese	30	.4	15		
Molybdenum	20	1.9	2.6		
Nickel	80	1.9	6.4		
Potassium	10000	110	110		
Selenium	10	6.5	6.4		
Silver	20	1.7	1.6		
Sodium	10000	260	270		
Strontium	40	.34	.8		
Thallium	20	6.5	5.2		
Tin	40	3.6	5.8		
Titanium	40	.6	.6		
Vanadium	100	1.2	1.2		
Zinc	40	.98	8.2		

Associated samples MP10656: T41656-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date:

11/15/09

11/15/09

Metal	T39947-4A Original DUP		RPD	QC Limits	T39947-4A Original MS		Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron	253	251	0.8	0-20	253	2260	1000	102.7	80-120
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP10656: T41656-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits  
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T41656  
 Account: ENCACOP - ENCANA  
 Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656  
 Matrix Type: AQUEOUS

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 11/15/09

Metal	T39947-4A Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	253	2130	1000	93.7	5.9	20
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP10656: T41656-1A

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 11/15/09

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1990	1000	99.7	80-120
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10656: T41656-1A

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

QC Batch ID: MP10656  
Matrix Type: AQUEOUS

Methods: SW846 6010B  
Units: ug/l

Prep Date: 11/15/09

Metal	T39947-4A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	128	122	4.1	0-10
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP10656: T41656-1A

Results < IDL are shown as zero for calculation purposes  
(\*) Outside of QC limits  
(anr) Analyte not requested

8.3.4

8



## General Chemistry

### QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN18647	2.0	<2.0	mg/kg	40	42.1	105.3	80-120%
Specific Conductivity	GN18834	1.0	<1.0	umhos/cm				

Associated Samples:  
Batch GN18647: T41656-1  
Batch GN18834: T41656-1  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN18647	T41438-1	mg/kg	<2.0	<2.0	1.8	0-20%
Solids, Percent	GN18676	T41656-1	%	82.3	84.7	2.9	0-5%
Specific Conductivity	GN18834	T41656-1	umhos/cm	1220	1220	0.0	0-20%
pH	GN18662	T41789-14	su	6.5	6.5	0.0	0-20%

Associated Samples:

Batch GN18647: T41656-1

Batch GN18662: T41656-1

Batch GN18676: T41656-1

Batch GN18834: T41656-1

(\*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: T41656  
Account: ENCACOP - ENCANA  
Project: EnCana Oil & Gas (USA) Inc.

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN18647	T41438-1	mg/kg	<2.0	40	38.0	90.4	75-125%

Associated Samples:  
Batch GN18647: T41656-1  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits



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

## Report Summary

Tuesday September 07, 2010

Report Number: L476181

Samples Received: 08/28/10

Client Project: A28 PIT CLOSURE

Description: A28 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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# REPORT OF ANALYSIS

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

September 07, 2010

Date Received : August 28, 2010  
Description : A28 Pit Closure  
Sample ID : A28-SPOILS-082610  
Collected By : Blair Rollins  
Collection Date : 08/26/10 11:00

ESC Sample # : L476181-01

Site ID :

Project # : A28 PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	09/01/10	1
Chromium,Trivalent	27.	0.50	mg/kg	Calc.	09/04/10	1
ORP	39.		mV	2580	08/31/10	1
pH	7.3		su	9045D	09/03/10	1
Sodium Adsorption Ratio	24.			Calc.	08/29/10	1
Specific Conductance	2800		umhos/cm	9050AMod	09/02/10	1
Mercury	0.11	0.020	mg/kg	7471	09/01/10	1
Arsenic	19.	5.0	mg/kg	6010B	09/04/10	5
Barium	5100	0.25	mg/kg	6010B	09/04/10	1
Cadmium	0.62	0.25	mg/kg	6010B	09/04/10	1
Chromium	27.	0.50	mg/kg	6010B	09/04/10	1
Copper	39.	1.0	mg/kg	6010B	09/04/10	1
Lead	18.	0.25	mg/kg	6010B	09/04/10	1
Nickel	19.	1.0	mg/kg	6010B	09/04/10	1
Selenium	BDL	1.0	mg/kg	6010B	09/04/10	1
Silver	BDL	0.50	mg/kg	6010B	09/04/10	1
Zinc	64.	1.5	mg/kg	6010B	09/04/10	1
Benzene	0.27	0.025	mg/kg	8021/8015	09/01/10	50
Toluene	0.52	0.25	mg/kg	8021/8015	09/01/10	50
Ethylbenzene	0.28	0.025	mg/kg	8021/8015	09/01/10	50
Total Xylene	2.0	0.075	mg/kg	8021/8015	09/01/10	50
TPH (GC/FID) Low Fraction	100	5.0	mg/kg	GRO	09/01/10	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	113.		% Rec.	8021/8015	09/01/10	50
a,a,a-Trifluorotoluene(PID)	97.0		% Rec.	8021/8015	09/01/10	50
TPH (GC/FID) High Fraction	2100	80.	mg/kg	3546/DRO	09/02/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/02/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Acenaphthene	0.30	0.30	mg/kg	8270C-SIM	09/05/10	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Benzo(a)anthracene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Benzo(a)pyrene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L476181-01 (SV8270PAHSIM) - Dilution due to matrix  
L476181-01 (PH) - 7.3@20.1c



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# REPORT OF ANALYSIS

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

September 07, 2010

Date Received : August 28, 2010  
Description : A28 Pit Closure

Sample ID : A28-SPOILS-082610

Collected By : Blair Rollins  
Collection Date : 08/26/10 11:00

ESC Sample # : L476181-01

Site ID :

Project # : A28 PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Chrysene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Fluorene	0.37	0.30	mg/kg	8270C-SIM	09/05/10	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Naphthalene	0.36	0.30	mg/kg	8270C-SIM	09/05/10	50
Phenanthrene	0.38	0.30	mg/kg	8270C-SIM	09/05/10	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
1-Methylnaphthalene	0.51	0.30	mg/kg	8270C-SIM	09/05/10	50
2-Methylnaphthalene	1.0	0.30	mg/kg	8270C-SIM	09/05/10	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	09/05/10	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	09/05/10	50
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	09/05/10	50
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	09/05/10	50

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: 09/07/10 12:56 Printed: 09/07/10 12:57  
L476181-01 (SV8270PAHSIM) - Dilution due to matrix  
L476181-01 (PH) - 7.3@20.1c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L476181-01	WG496562	SAMP	Nitrobenzene-d5	R1363309	J7
	WG496562	SAMP	2-Fluorobiphenyl	R1363309	J7
	WG496562	SAMP	p-Terphenyl-d14	R1363309	J7
	WG496287	SAMP	Chromium,Hexavalent	R1357928	J3J6
	WG496462	SAMP	TPH (GC/FID) High Fraction	R1360308	J3
	WG496462	SAMP	o-Terphenyl	R1360308	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
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  
09/07/10 at 12:57:07

TSR Signing Reports: 358  
R5 - Desired TAT

Sample: L476181-01 Account: ENCANACO Received: 08/28/10 09:00 Due Date: 09/03/10 00:00 RPT Date: 09/07/10 12:56





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

Parachute, CO 81635

Quality Assurance Report  
Level II

L476181

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September 07, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG496184	08/31/10 15:11
Ethylbenzene	< .0005	mg/kg			WG496184	08/31/10 15:11
Toluene	< .005	mg/kg			WG496184	08/31/10 15:11
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG496184	08/31/10 15:11
Total Xylene	< .0015	mg/kg			WG496184	08/31/10 15:11
a,a,a-Trifluorotoluene(FID)		% Rec.	113.5	59-128	WG496184	08/31/10 15:11
a,a,a-Trifluorotoluene(PID)		% Rec.	96.31	54-144	WG496184	08/31/10 15:11
Chromium,Hexavalent	< 2	mg/kg			WG496287	09/01/10 13:57
Mercury	< .02	mg/kg			WG495913	09/01/10 11:48
TPH (GC/FID) High Fraction	< 4	ppm			WG496462	09/02/10 07:51
o-Terphenyl		% Rec.	101.6	50-150	WG496462	09/02/10 07:51
Specific Conductance	1.20	umhos/cm			WG496556	09/02/10 09:05
pH	4.50	su			WG496499	09/03/10 08:29
1-Methylnaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Chloronaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Methylnaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
Acenaphthene	< .006	mg/kg			WG496562	09/03/10 06:45
Acenaphthylene	< .006	mg/kg			WG496562	09/03/10 06:45
Anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(a)anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(a)pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(b)fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(g,h,i)perylene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(k)fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Chrysene	< .006	mg/kg			WG496562	09/03/10 06:45
Dibenz(a,h)anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Fluorene	< .006	mg/kg			WG496562	09/03/10 06:45
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
Naphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
Phenanthrene	< .006	mg/kg			WG496562	09/03/10 06:45
Pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Fluorobiphenyl		% Rec.	76.65	21-120	WG496562	09/03/10 06:45
Nitrobenzene-d5		% Rec.	68.81	33-114	WG496562	09/03/10 06:45
p-Terphenyl-d14		% Rec.	94.48	18-142	WG496562	09/03/10 06:45
Arsenic	< 1	mg/kg			WG496157	09/04/10 11:08
Barium	< .25	mg/kg			WG496157	09/04/10 11:08
Cadmium	< .25	mg/kg			WG496157	09/04/10 11:08
Chromium	< .5	mg/kg			WG496157	09/04/10 11:08
Copper	< 1	mg/kg			WG496157	09/04/10 11:08
Lead	< .25	mg/kg			WG496157	09/04/10 11:08
Nickel	< 1	mg/kg			WG496157	09/04/10 11:08
Selenium	< 1	mg/kg			WG496157	09/04/10 11:08
Silver	< .5	mg/kg			WG496157	09/04/10 11:08
Zinc	< 1.5	mg/kg			WG496157	09/04/10 11:08

\* 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**

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Quality Assurance Report  
Level II

L476181

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Est. 1970

September 07, 2010

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
ORP	mV	43.0	46.0		6.74	20	L475515-01	WG496085
ORP	mV	18.0	17.0		5.71	20	L476230-19	WG496085
Chromium,Hexavalent	mg/kg	0	0		0	20	L476181-01	WG496287
Mercury	mg/kg	0	0		0	20	L476153-02	WG495913
Specific Conductance	umhos/cm	2700	2600		5.06	20	L476142-01	WG496556
Specific Conductance	umhos/cm	95.0	110.		14.5	20	L476696-01	WG496556
pH	su	6.90	6.80		1.46*	1	L476106-02	WG496499
pH	su	7.90	7.10		10.7*	1	L476230-17	WG496499
Arsenic	mg/kg	8.40	8.30		1.08	20	L476183-04	WG496157
Barium	mg/kg	200.	190.		4.63	20	L476183-04	WG496157
Cadmium	mg/kg	0.470	0.530		11.8	20	L476183-04	WG496157
Chromium	mg/kg	27.0	30.0		10.9	20	L476183-04	WG496157
Copper	mg/kg	12.0	12.0		1.65	20	L476183-04	WG496157
Lead	mg/kg	31.0	30.0		2.63	20	L476183-04	WG496157
Nickel	mg/kg	15.0	14.2		7.46	20	L476183-04	WG496157
Silver	mg/kg	0	0		0	20	L476183-04	WG496157
Zinc	mg/kg	64.0	62.3		2.85	20	L476183-04	WG496157
Selenium	mg/kg	0	0		0	20	L476183-04	WG496157

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
ORP	mV	229	220.	96.1	95.6-104.37	WG496085
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.76	86.5	67-135	WG496184
a,a,a-Trifluorotoluene(FID)				77.69	59-128	WG496184
Benzene	mg/kg	.05	0.0432	86.5	76-113	WG496184
Ethylbenzene	mg/kg	.05	0.0432	86.4	78-115	WG496184
Toluene	mg/kg	.05	0.0429	85.7	76-114	WG496184
Total Xylene	mg/kg	.15	0.126	84.3	81-118	WG496184
a,a,a-Trifluorotoluene(PID)				94.81	54-144	WG496184
Chromium,Hexavalent	mg/kg	100	71.2	71.2	50-143	WG496287
Mercury	mg/kg	8.77	10.3	117.	71.6-127.7	WG495913
TPH (GC/FID) High Fraction	ppm	60	57.9	96.5	50-150	WG496462
o-Terphenyl				118.5	50-150	WG496462
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG496556
pH	su	9.36	9.30	99.4	98.9-102.0	WG496499

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

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1-Methylnaphthalene	mg/kg	.033	0.0279	84.6	41-110	WG496562
2-Chloronaphthalene	mg/kg	.033	0.0290	87.8	43-109	WG496562
2-Methylnaphthalene	mg/kg	.033	0.0278	84.2	38-104	WG496562
Acenaphthene	mg/kg	.033	0.0272	82.5	48-103	WG496562
Acenaphthylene	mg/kg	.033	0.0260	78.9	43-106	WG496562
Anthracene	mg/kg	.033	0.0293	88.7	51-110	WG496562
Benzo(a)anthracene	mg/kg	.033	0.0272	82.4	38-126	WG496562
Benzo(a)pyrene	mg/kg	.033	0.0280	84.8	47-118	WG496562
Benzo(b)fluoranthene	mg/kg	.033	0.0302	91.4	47-118	WG496562
Benzo(g,h,i)perylene	mg/kg	.033	0.0256	77.6	40-125	WG496562
Benzo(k)fluoranthene	mg/kg	.033	0.0286	86.8	45-121	WG496562
Chrysene	mg/kg	.033	0.0283	85.7	35-135	WG496562
Dibenz(a,h)anthracene	mg/kg	.033	0.0263	79.6	41-124	WG496562
Fluoranthene	mg/kg	.033	0.0283	85.8	50-114	WG496562
Fluorene	mg/kg	.033	0.0270	81.7	49-109	WG496562
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0261	79.0	40-126	WG496562
Naphthalene	mg/kg	.033	0.0240	72.8	36-100	WG496562
Phenanthrene	mg/kg	.033	0.0275	83.5	46-108	WG496562
Pyrene	mg/kg	.033	0.0297	89.9	30-136	WG496562
2-Fluorobiphenyl				82.83	21-120	WG496562
Nitrobenzene-d5				75.32	33-114	WG496562
p-Terphenyl-d14				100.9	18-142	WG496562
Arsenic	mg/kg	192	156.	81.3	78.6-120.8	WG496157
Barium	mg/kg	420	362.	86.2	78.8-121.4	WG496157
Cadmium	mg/kg	70.1	59.8	85.3	78.5-121.5	WG496157
Chromium	mg/kg	168	149.	88.7	80.4-120.2	WG496157
Copper	mg/kg	122	110.	90.2	81.6-119.7	WG496157
Lead	mg/kg	113	94.4	83.5	77.3-122.1	WG496157
Nickel	mg/kg	74.1	69.2	93.4	78.8-121.2	WG496157
Selenium	mg/kg	176	144.	81.8	75.6-125.0	WG496157
Silver	mg/kg	115	92.4	80.3	66-133.9	WG496157
Zinc	mg/kg	437	368.	84.2	78.5-121.7	WG496157

Analyte	Units	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec			
ORP	mV	220.	220.	96.0	95.6-104.37	0	WG496085
TPH (GC/FID) Low Fraction	mg/kg	4.69	4.76	85.0	67-135	1.37	WG496184
a,a,a-Trifluorotoluene(FID)				78.42	59-128		WG496184
Benzene	mg/kg	0.0480	0.0432	96.0	76-113	10.5	WG496184
Ethylbenzene	mg/kg	0.0477	0.0432	95.0	78-115	9.85	WG496184
Toluene	mg/kg	0.0470	0.0429	94.0	76-114	9.16	WG496184
Total Xylene	mg/kg	0.139	0.126	92.0	81-118	9.26	WG496184
a,a,a-Trifluorotoluene(PID)				95.77	54-144		WG496184
Chromium,Hexavalent	mg/kg	70.2	71.2	70.0	50-143	1.41	WG496287
TPH (GC/FID) High Fraction	ppm	43.2	57.9	72.0	50-150	29.2*	WG496462
o-Terphenyl				84.68	50-150		WG496462
Specific Conductance	umhos/	420.	420.	103.	85-115	0	WG496556

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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	WG496499
1-Methylnaphthalene	mg/kg	0.0250	0.0279	76.0	41-110	11.1	24	WG496562
2-Chloronaphthalene	mg/kg	0.0281	0.0290	85.0	43-109	3.18	21	WG496562
2-Methylnaphthalene	mg/kg	0.0250	0.0278	76.0	38-104	10.6	24	WG496562
Acenaphthene	mg/kg	0.0275	0.0272	83.0	48-103	1.03	20	WG496562
Acenaphthylene	mg/kg	0.0252	0.0260	76.0	43-106	3.10	20	WG496562
Anthracene	mg/kg	0.0270	0.0293	82.0	51-110	8.13	22	WG496562
Benzo(a)anthracene	mg/kg	0.0272	0.0272	82.0	38-126	0.0197	20	WG496562
Benzo(a)pyrene	mg/kg	0.0270	0.0280	82.0	47-118	3.59	20	WG496562
Benzo(b)fluoranthene	mg/kg	0.0292	0.0302	88.0	47-118	3.37	29	WG496562
Benzo(g,h,i)perylene	mg/kg	0.0255	0.0256	77.0	40-125	0.278	20	WG496562
Benzo(k)fluoranthene	mg/kg	0.0280	0.0286	85.0	45-121	2.28	31	WG496562
Chrysene	mg/kg	0.0282	0.0283	85.0	35-135	0.464	20	WG496562
Dibenz(a,h)anthracene	mg/kg	0.0264	0.0263	80.0	41-124	0.675	20	WG496562
Fluoranthene	mg/kg	0.0300	0.0283	91.0	50-114	5.69	20	WG496562
Fluorene	mg/kg	0.0275	0.0270	83.0	49-109	2.14	19	WG496562
Indeno(1,2,3-cd)pyrene	mg/kg	0.0254	0.0261	77.0	40-126	2.48	20	WG496562
Naphthalene	mg/kg	0.0229	0.0240	70.0	36-100	4.64	24	WG496562
Phenanthrene	mg/kg	0.0247	0.0275	75.0	46-108	10.9	21	WG496562
Pyrene	mg/kg	0.0277	0.0297	84.0	30-136	6.70	20	WG496562
2-Fluorobiphenyl				84.37	21-120			WG496562
Nitrobenzene-d5				72.25	33-114			WG496562
p-Terphenyl-d14				96.71	18-142			WG496562

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.196	0	.05	78.3	32-137	L476111-14	WG496184
Ethylbenzene	mg/kg	0.193	0	.05	77.2	10-150	L476111-14	WG496184
Toluene	mg/kg	0.189	0	.05	75.6	20-142	L476111-14	WG496184
Total Xylene	mg/kg	0.562	0	.15	75.0	16-141	L476111-14	WG496184
a,a,a-Trifluorotoluene(PID)					93.66	54-144		WG496184
TPH (GC/FID) Low Fraction	mg/kg	21.6	0	5.5	78.6	55-109	L476361-01	WG496184
a,a,a-Trifluorotoluene(FID)					83.60	59-128		WG496184
Chromium,Hexavalent	mg/kg	2.45	0	20	12.2*	50-150	L476181-01	WG496287
Mercury	mg/kg	0.248	0	.25	99.2	70-130	L476153-02	WG495913
TPH (GC/FID) High Fraction	ppm	43.1	0.736	60	70.6	50-150	L475296-41	WG496462
o-Terphenyl					85.96	50-150		WG496462
Arsenic	mg/kg	44.8	8.30	50	73.0*	75-125	L476183-04	WG496157
Barium	mg/kg	221.	190.	50	62.0*	75-125	L476183-04	WG496157
Cadmium	mg/kg	35.2	0.530	50	69.3*	75-125	L476183-04	WG496157
Chromium	mg/kg	68.2	30.0	50	76.4	75-125	L476183-04	WG496157
Copper	mg/kg	51.9	12.0	50	79.8	75-125	L476183-04	WG496157
Lead	mg/kg	65.9	30.0	50	71.8*	75-125	L476183-04	WG496157
Nickel	mg/kg	51.6	14.2	50	74.8*	75-125	L476183-04	WG496157
Silver	mg/kg	38.0	0	50	76.0	75-125	L476183-04	WG496157
Zinc	mg/kg	102.	62.3	50	79.4	75-125	L476183-04	WG496157
Selenium	mg/kg	39.4	0	10	78.8	75-125	L476183-04	WG496157

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.215	0.196	86.2	32-137	9.52	39	L476111-14	WG496184
Ethylbenzene	mg/kg	0.212	0.193	84.7	10-150	9.21	44	L476111-14	WG496184
Toluene	mg/kg	0.207	0.189	82.7	20-142	8.91	42	L476111-14	WG496184
Total Xylene	mg/kg	0.616	0.562	82.1	16-141	9.02	46	L476111-14	WG496184
a,a,a-Trifluorotoluene(PID)	mg/kg	21.6	21.6	94.68	54-144	0.190	20	L476361-01	WG496184
TPH (GC/FID) Low Fraction				78.5	55-109				WG496184
a,a,a-Trifluorotoluene(FID)				84.12	59-128				WG496184
Chromium,Hexavalent	mg/kg	0.468	2.45	2.34*	50-150	136.*	20	L476181-01	WG496287
Mercury	mg/kg	0.256	0.248	102.	70-130	3.17	20	L476153-02	WG495913
TPH (GC/FID) High Fraction	ppm	48.9	43.1	80.3	50-150	12.7	20	L475296-41	WG496462
o-Terphenyl				101.9	50-150				WG496462
Arsenic	mg/kg	45.5	44.8	74.4*	75-125	1.55	20	L476183-04	WG496157
Barium	mg/kg	239.	221.	98.0	75-125	7.83	20	L476183-04	WG496157
Cadmium	mg/kg	35.6	35.2	70.1*	75-125	1.13	20	L476183-04	WG496157
Chromium	mg/kg	66.8	68.2	73.6*	75-125	2.07	20	L476183-04	WG496157
Copper	mg/kg	52.1	51.9	80.2	75-125	0.385	20	L476183-04	WG496157
Lead	mg/kg	68.6	65.9	77.2	75-125	4.01	20	L476183-04	WG496157
Nickel	mg/kg	51.3	51.6	74.2*	75-125	0.583	20	L476183-04	WG496157
Silver	mg/kg	38.1	38.0	76.2	75-125	0.263	20	L476183-04	WG496157
Zinc	mg/kg	102.	102.	79.4	75-125	0	20	L476183-04	WG496157
Selenium	mg/kg	37.3	39.4	74.6*	75-125	5.48	20	L476183-04	WG496157

Batch number /Run number / Sample number cross reference

WG496085: R1355748: L476181-01  
WG496184: R1356488: L476181-01  
WG495990: R1356890: L476181-01  
WG496287: R1357928: L476181-01  
WG495913: R1358269: L476181-01  
WG496462: R1360308: L476181-01  
WG496556: R1360528: L476181-01  
WG496499: R1362429: L476181-01  
WG496562: R1363309: L476181-01  
WG496157: R1364189: L476181-01

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

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

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

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



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## Report Summary

Wednesday December 15, 2010

Report Number: L492110

Samples Received: 12/04/10

Client Project:

Description: A28

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

December 15, 2010

Date Received : December 04, 2010  
Description : A28

Sample ID : A28-NB-12110

Collected By : Jake Harris  
Collection Date : 12/01/10 11:20

ESC Sample # : L492110-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.4	1.0	mg/kg	6010B	12/07/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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# REPORT OF ANALYSIS

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December 15, 2010

Date Received : December 04, 2010  
Description : A28

Sample ID : A28-NEB-12110

Collected By : Jake Harris  
Collection Date : 12/01/10 11:40

ESC Sample # : L492110-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.0	1.0	mg/kg	6010B	12/07/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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December 15, 2010

Date Received : December 04, 2010  
Description : A28

Sample ID : A28-SB-12110

Collected By : Jake Harris  
Collection Date : 12/01/10 11:50

ESC Sample # : L492110-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.9	1.0	mg/kg	6010B	12/07/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Parachute, CO 81635

December 15, 2010

Date Received : December 04, 2010  
Description : A28

Sample ID : A28-SWB-12110

Collected By : Jake Harris  
Collection Date : 12/01/10 12:05

ESC Sample # : L492110-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	19.	1.0	mg/kg	6010B	12/15/10	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: 12/15/10 15:50 Printed: 12/15/10 15:50

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

December 15, 2010

Date Received : December 04, 2010  
Description : A28

Sample ID : A28-SPOIL-12110

Collected By : Jake Harris  
Collection Date : 12/01/10 11:00

ESC Sample # : L492110-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	16.	1.0	mg/kg	6010B	12/15/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	12/09/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	12/09/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	12/09/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	12/09/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	12/09/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	8021/8015	12/09/10	5
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	12/09/10	5
TPH (GC/FID) High Fraction	70.	4.0	mg/kg	3546/DRO	12/09/10	1
Surrogate recovery(%)						
o-Terphenyl	78.9		% Rec.	3546/DRO	12/09/10	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: 12/15/10 15:50 Printed: 12/15/10 15:50

Summary of Remarks For Samples Printed  
12/15/10 at 15:50:41

TSR Signing Reports: 358  
R5 - Desired TAT

Log all samples beginning with different sample numbers to separate reports. Ex.- M34 N PIT and M34 S PIT go on one L#, but M34 S PIT and E34 S PIT go on separate L #s. Log project # as project name.

Sample: L492110-01 Account: ENCANACO Received: 12/04/10 09:00 Due Date: 12/10/10 00:00 RPT Date: 12/15/10 15:50

Sample: L492110-02 Account: ENCANACO Received: 12/04/10 09:00 Due Date: 12/10/10 00:00 RPT Date: 12/15/10 15:50

Sample: L492110-03 Account: ENCANACO Received: 12/04/10 09:00 Due Date: 12/10/10 00:00 RPT Date: 12/15/10 15:50

Sample: L492110-04 Account: ENCANACO Received: 12/04/10 09:00 Due Date: 12/10/10 00:00 RPT Date: 12/15/10 15:50

Sample: L492110-05 Account: ENCANACO Received: 12/04/10 09:00 Due Date: 12/13/10 00:00 RPT Date: 12/15/10 15:50  
Added BTEXGRO and DRO per NCF -JCH 12/7



**YOUR LAB OF CHOICE**

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Quality Assurance Report  
Level II

L492110

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

December 15, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Arsenic	< 1	mg/kg			WG511892	12/07/10 13:09
TPH (GC/FID) High Fraction	< 4	ppm			WG512199	12/09/10 08:45
o-Terphenyl		% Rec.	100.4	50-150	WG512199	12/09/10 08:45
Benzene	< .0005	mg/kg			WG512351	12/09/10 10:07
Ethylbenzene	< .0005	mg/kg			WG512351	12/09/10 10:07
Toluene	< .005	mg/kg			WG512351	12/09/10 10:07
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG512351	12/09/10 10:07
Total Xylene	< .0015	mg/kg			WG512351	12/09/10 10:07
a,a,a-Trifluorotoluene(FID)		% Rec.	97.84	59-128	WG512351	12/09/10 10:07
a,a,a-Trifluorotoluene(PID)		% Rec.	101.2	54-144	WG512351	12/09/10 10:07
Arsenic	< 1	mg/kg			WG511903	12/15/10 10:23

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	16.0	23.0	33.5*	20	L492079-22	WG511903

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Arsenic	mg/kg	192	167.	87.0	78.6-120.8	WG511892
TPH (GC/FID) High Fraction	ppm	60	49.8	83.0	50-150	WG512199
o-Terphenyl				83.40	50-150	WG512199
Benzene	mg/kg	.05	0.0441	88.3	76-113	WG512351
Ethylbenzene	mg/kg	.05	0.0440	88.0	78-115	WG512351
Toluene	mg/kg	.05	0.0436	87.3	76-114	WG512351
Total Xylene	mg/kg	.15	0.134	89.1	81-118	WG512351
a,a,a-Trifluorotoluene(PID)				101.9	54-144	WG512351
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.27	95.9	67-135	WG512351
a,a,a-Trifluorotoluene(FID)				106.0	59-128	WG512351
Arsenic	mg/kg	192	170.	88.5	78.6-120.8	WG511903

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
TPH (GC/FID) High Fraction	ppm	49.0	49.8	82.0	50-150	1.69	25	WG512199
o-Terphenyl				79.19	50-150			WG512199
Benzene	mg/kg	0.0444	0.0441	89.0	76-113	0.520	20	WG512351
Ethylbenzene	mg/kg	0.0443	0.0440	88.0	78-115	0.700	20	WG512351
Toluene	mg/kg	0.0439	0.0436	88.0	76-114	0.610	20	WG512351
Total Xylene	mg/kg	0.134	0.134	89.0	81-118	0.310	20	WG512351
a,a,a-Trifluorotoluene(PID)				100.9	54-144			WG512351
TPH (GC/FID) Low Fraction	mg/kg	5.22	5.27	95.0	67-135	1.06	20	WG512351
a,a,a-Trifluorotoluene(FID)				104.8	59-128			WG512351

\* 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

December 15, 2010

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Arsenic	mg/kg	44.1	2.70	50	82.8	75-125	L491416-17	WG511892
Benzene	mg/kg	0.0388	0	.05	77.6	32-137	L492664-03	WG512351
Ethylbenzene	mg/kg	0.0249	0	.05	49.8	10-150	L492664-03	WG512351
Toluene	mg/kg	0.0225	0	.05	45.0	20-142	L492664-03	WG512351
Total Xylene	mg/kg	0.0864	0	.15	57.6	16-141	L492664-03	WG512351
a,a,a-Trifluorotoluene(PID)					98.99	54-144		WG512351
TPH (GC/FID) Low Fraction	mg/kg	21.8	0	5.5	79.4	55-109	L492679-11	WG512351
a,a,a-Trifluorotoluene(FID)					103.1	59-128		WG512351
Arsenic	mg/kg	77.5	23.0	50	109.	75-125	L492079-22	WG511903

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	50.5	44.1	95.6	75-125	13.5	20	L491416-17	WG511892
Benzene	mg/kg	0.0423	0.0388	84.6	32-137	8.59	39	L492664-03	WG512351
Ethylbenzene	mg/kg	0.0272	0.0249	54.4	10-150	8.78	44	L492664-03	WG512351
Toluene	mg/kg	0.0256	0.0225	51.2	20-142	12.8	42	L492664-03	WG512351
Total Xylene	mg/kg	0.0943	0.0864	62.9	16-141	8.76	46	L492664-03	WG512351
a,a,a-Trifluorotoluene(PID)				99.56	54-144				WG512351
TPH (GC/FID) Low Fraction	mg/kg	23.2	21.8	84.2	55-109	5.87	20	L492679-11	WG512351
a,a,a-Trifluorotoluene(FID)				103.9	59-128				WG512351
Arsenic	mg/kg	61.2	77.5	76.4	75-125	23.5*	20	L492079-22	WG511903

Batch number /Run number / Sample number cross reference

WG511892: R1499809: L492110-01 02 03  
WG512199: R1501310: L492110-05  
WG512351: R1501458: L492110-05  
WG511903: R1505669: L492110-04 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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December 15, 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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Est. 1970

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

## Report Summary

Tuesday May 24, 2011

Report Number: L516416

Samples Received: 05/17/11

Client Project:

Description: A28

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

May 24, 2011

Date Received : May 17, 2011  
Description : A28  
Sample ID : A28-NES-051311 10-12IN  
Collected By : Jackie Harris  
Collection Date : 05/13/11 12:00

ESC Sample # : L516416-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/20/11	1
Chromium, Trivalent	14.	2.0	mg/kg	Calc.	05/19/11	1
ORP	91.		mV	2580	05/20/11	1
pH	7.9		su	9045D	05/20/11	1
Sodium Adsorption Ratio	13.			Calc.	05/18/11	1
Specific Conductance	650		umhos/cm	9050AMod	05/20/11	1
Mercury	0.057	0.020	mg/kg	7471	05/18/11	1
Arsenic	8.2	1.0	mg/kg	6010B	05/19/11	1
Barium	2000	0.25	mg/kg	6010B	05/19/11	1
Cadmium	0.56	0.25	mg/kg	6010B	05/19/11	1
Chromium	14.	0.50	mg/kg	6010B	05/19/11	1
Copper	24.	1.0	mg/kg	6010B	05/19/11	1
Lead	11.	0.25	mg/kg	6010B	05/19/11	1
Nickel	10.	1.0	mg/kg	6010B	05/19/11	1
Selenium	BDL	1.0	mg/kg	6010B	05/19/11	1
Silver	BDL	0.50	mg/kg	6010B	05/20/11	1
Zinc	67.	1.5	mg/kg	6010B	05/19/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	05/19/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/19/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/19/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/19/11	5
TPH (GC/FID) Low Fraction	0.66	0.50	mg/kg	GRO	05/19/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.6		% Rec.	8021/8015	05/19/11	5
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	05/19/11	5
TPH (GC/FID) High Fraction	540	20.	mg/kg	3546/DRO	05/21/11	5
Surrogate recovery(%)						
o-Terphenyl	90.4		% Rec.	3546/DRO	05/21/11	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Acenaphthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(a)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(a)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L516416-01 (PH) - 7.9@20.7c



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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

May 24, 2011

Date Received : May 17, 2011  
Description : A28  
Sample ID : A28-NES-051311 10-12IN  
Collected By : Jackie Harris  
Collection Date : 05/13/11 12:00

ESC Sample # : L516416-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Chrysene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Fluorene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Naphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Phenanthrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
1-Methylnaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
2-Methylnaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	05/23/11	50
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	05/23/11	50
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	05/23/11	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/24/11 17:20 Printed: 05/24/11 17:43  
L516416-01 (PH) - 7.9@20.7c

REPORT OF ANALYSIS

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

May 24, 2011

Date Received : May 17, 2011  
Description : A28  
Sample ID : A28-WS-051311 10-12IN  
Collected By : Jackie Harris  
Collection Date : 05/13/11 12:30

ESC Sample # : L516416-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/20/11	1
Chromium, Trivalent	25.	2.0	mg/kg	Calc.	05/19/11	1
ORP	100		mV	2580	05/20/11	1
pH	8.4		su	9045D	05/20/11	1
Sodium Adsorption Ratio	12.			Calc.	05/18/11	1
Specific Conductance	1300		umhos/cm	9050AMod	05/20/11	1
Mercury	0.21	0.020	mg/kg	7471	05/18/11	1
Arsenic	16.	1.0	mg/kg	6010B	05/19/11	1
Barium	4200	0.50	mg/kg	6010B	05/19/11	2
Cadmium	1.0	0.25	mg/kg	6010B	05/19/11	1
Chromium	25.	0.50	mg/kg	6010B	05/19/11	1
Copper	29.	1.0	mg/kg	6010B	05/19/11	1
Lead	16.	0.25	mg/kg	6010B	05/19/11	1
Nickel	19.	1.0	mg/kg	6010B	05/19/11	1
Selenium	7.8	1.0	mg/kg	6010B	05/19/11	1
Silver	BDL	0.50	mg/kg	6010B	05/20/11	1
Zinc	51.	1.5	mg/kg	6010B	05/19/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	05/19/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/19/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/19/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/19/11	5
TPH (GC/FID) Low Fraction	1.2	0.50	mg/kg	GRO	05/19/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.2		% Rec.	8021/8015	05/19/11	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	05/19/11	5
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	05/21/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	05/21/11	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Acenaphthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(a)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(a)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L516416-02 (SV8270PAHSIM) - Dilution due to matrix  
L516416-02 (PH) - 8.4@20.7c



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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

May 24, 2011

Date Received : May 17, 2011  
Description : A28  
Sample ID : A28-WS-051311 10-12IN  
Collected By : Jackie Harris  
Collection Date : 05/13/11 12:30

ESC Sample # : L516416-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Chrysene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Fluorene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Naphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Phenanthrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
1-Methylnaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
2-Methylnaphthalene	0.78	0.30	mg/kg	8270C-SIM	05/23/11	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/23/11	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	05/23/11	50
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	05/23/11	50
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	05/23/11	50

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: 05/24/11 17:20 Printed: 05/24/11 17:43  
L516416-02 (SV8270PAHSIM) - Dilution due to matrix  
L516416-02 (PH) - 8.4@20.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L516416-01	WG536471	SAMP	Anthracene	R1695829	O
	WG536471	SAMP	Acenaphthene	R1695829	O
	WG536471	SAMP	Acenaphthylene	R1695829	O
	WG536471	SAMP	Benzo(a)anthracene	R1695829	O
	WG536471	SAMP	Benzo(a)pyrene	R1695829	O
	WG536471	SAMP	Benzo(b)fluoranthene	R1695829	O
	WG536471	SAMP	Benzo(g,h,i)perylene	R1695829	O
	WG536471	SAMP	Benzo(k)fluoranthene	R1695829	O
	WG536471	SAMP	Chrysene	R1695829	O
	WG536471	SAMP	Dibenz(a,h)anthracene	R1695829	O
	WG536471	SAMP	Fluoranthene	R1695829	O
	WG536471	SAMP	Fluorene	R1695829	O
	WG536471	SAMP	Indeno(1,2,3-cd)pyrene	R1695829	O
	WG536471	SAMP	Naphthalene	R1695829	O
	WG536471	SAMP	Phenanthrene	R1695829	O
	WG536471	SAMP	Pyrene	R1695829	O
	WG536471	SAMP	1-Methylnaphthalene	R1695829	O
	WG536471	SAMP	2-Methylnaphthalene	R1695829	O
	WG536471	SAMP	2-Chloronaphthalene	R1695829	O
	WG536471	SAMP	Nitrobenzene-d5	R1695829	J7
	WG536471	SAMP	2-Fluorobiphenyl	R1695829	J7
	WG536471	SAMP	p-Terphenyl-d14	R1695829	J7
L516416-02	WG536471	SAMP	Nitrobenzene-d5	R1695829	J7
	WG536471	SAMP	2-Fluorobiphenyl	R1695829	J7
	WG536471	SAMP	p-Terphenyl-d14	R1695829	J7
	WG536300	SAMP	o-Terphenyl	R1694891	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  
05/24/11 at 17:43:17

TSR Signing Reports: 358  
R5 - Desired TAT

Sample: L516416-01 Account: ENCANACO Received: 05/17/11 09:00 Due Date: 05/24/11 00:00 RPT Date: 05/24/11 17:20

Sample: L516416-02 Account: ENCANACO Received: 05/17/11 09:00 Due Date: 05/24/11 00:00 RPT Date: 05/24/11 17:20





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Tax I.D. 62-0814289

Est. 1970

May 24, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG536255	05/18/11 13:49
Ethylbenzene	< .0005	mg/kg			WG536255	05/18/11 13:49
Toluene	< .005	mg/kg			WG536255	05/18/11 13:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG536255	05/18/11 13:49
Total Xylene	< .0015	mg/kg			WG536255	05/18/11 13:49
a,a,a-Trifluorotoluene(FID)		% Rec.	101.4	59-128	WG536255	05/18/11 13:49
a,a,a-Trifluorotoluene(PID)		% Rec.	105.9	54-144	WG536255	05/18/11 13:49
Mercury	< .02	mg/kg			WG536128	05/18/11 14:32
Arsenic	< 1	mg/kg			WG536127	05/19/11 12:12
Barium	< .25	mg/kg			WG536127	05/19/11 12:12
Cadmium	< .25	mg/kg			WG536127	05/19/11 12:12
Chromium	< .5	mg/kg			WG536127	05/19/11 12:12
Copper	< 1	mg/kg			WG536127	05/19/11 12:12
Lead	< .25	mg/kg			WG536127	05/19/11 12:12
Nickel	< 1	mg/kg			WG536127	05/19/11 12:12
Zinc	< 1.5	mg/kg			WG536127	05/19/11 12:12
Selenium	< 1	mg/kg			WG536127	05/19/11 01:34
pH	4.30	su			WG536341	05/20/11 08:17
Specific Conductance	1.40	umhos/cm			WG536551	05/20/11 13:42
Chromium,Hexavalent	< 2	mg/kg			WG536313	05/20/11 13:15
TPH (GC/FID) High Fraction	< 4	ppm			WG536300	05/20/11 09:38
o-Terphenyl		% Rec.	81.37	50-150	WG536300	05/20/11 09:38
Silver	< .5	mg/kg			WG536512	05/20/11 14:48
1-Methylnaphthalene	< .006	mg/kg			WG536471	05/21/11 07:42
2-Chloronaphthalene	< .006	mg/kg			WG536471	05/21/11 07:42
2-Methylnaphthalene	< .006	mg/kg			WG536471	05/21/11 07:42
Acenaphthene	< .006	mg/kg			WG536471	05/21/11 07:42
Acenaphthylene	< .006	mg/kg			WG536471	05/21/11 07:42
Anthracene	< .006	mg/kg			WG536471	05/21/11 07:42
Benzo(a)anthracene	< .006	mg/kg			WG536471	05/21/11 07:42
Benzo(a)pyrene	< .006	mg/kg			WG536471	05/21/11 07:42
Benzo(b)fluoranthene	< .006	mg/kg			WG536471	05/21/11 07:42
Benzo(g,h,i)perylene	< .006	mg/kg			WG536471	05/21/11 07:42
Benzo(k)fluoranthene	< .006	mg/kg			WG536471	05/21/11 07:42
Chrysene	< .006	mg/kg			WG536471	05/21/11 07:42
Dibenz(a,h)anthracene	< .006	mg/kg			WG536471	05/21/11 07:42
Fluoranthene	< .006	mg/kg			WG536471	05/21/11 07:42
Fluorene	< .006	mg/kg			WG536471	05/21/11 07:42
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG536471	05/21/11 07:42
Naphthalene	< .006	mg/kg			WG536471	05/21/11 07:42
Phenanthrene	< .006	mg/kg			WG536471	05/21/11 07:42
Pyrene	< .006	mg/kg			WG536471	05/21/11 07:42
2-Fluorobiphenyl		% Rec.	72.65	21-120	WG536471	05/21/11 07:42

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

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Est. 1970

May 24, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Nitrobenzene-d5		% Rec.	61.77	33-114		05/21/11 07:42
p-Terphenyl-d14		% Rec.	73.98	18-142		05/21/11 07:42

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Mercury	mg/kg	0.0420	0.0600	35.5*	20	L516382-13	WG536128
Arsenic	mg/kg	5.50	6.30	13.9	20	L516426-03	WG536127
Barium	mg/kg	130.	160.	17.7	20	L516426-03	WG536127
Cadmium	mg/kg	0.750	0.790	4.93	20	L516426-03	WG536127
Chromium	mg/kg	16.0	18.0	8.70	20	L516426-03	WG536127
Copper	mg/kg	12.0	0	NA	20	L516426-03	WG536127
Lead	mg/kg	23.0	25.0	8.77	20	L516426-03	WG536127
Nickel	mg/kg	15.0	0	NA	20	L516426-03	WG536127
Selenium	mg/kg	12.0	13.0	8.00	20	L516426-03	WG536127
Zinc	mg/kg	100.	0	NA	20	L516426-03	WG536127
pH	su	7.10	7.10	0	1	L516328-08	WG536341
pH	su	9.20	9.20	0	1	L516495-38	WG536341
Specific Conductance	umhos/cm	260.	240.	7.11	20	L516495-39	WG536551
Specific Conductance	umhos/cm	3000	2800	5.89	20	L516547-04	WG536551
Chromium, Hexavalent	mg/kg	0	0	0	20	L516414-01	WG536313
Silver	mg/kg	0	0	0	20	L516837-01	WG536512
ORP	mV	110.	98.0	10.6	20	L516426-01	WG536585
ORP	mV	110.	110.	3.57	20	L516685-09	WG536585

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0493	98.6	76-113	WG536255
Ethylbenzene	mg/kg	.05	0.0513	103.	78-115	WG536255
Toluene	mg/kg	.05	0.0501	100.	76-114	WG536255
Total Xylene	mg/kg	.15	0.153	102.	81-118	WG536255
a,a,a-Trifluorotoluene(PID)				106.5	54-144	WG536255
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.33	115.	67-135	WG536255
a,a,a-Trifluorotoluene(FID)				109.5	59-128	WG536255
Mercury	mg/kg	8.77	7.92	90.3	71.6-127.7	WG536128
Arsenic	mg/kg	192	162.	84.4	78.6-120.8	WG536127
Barium	mg/kg	420	366.	87.1	78.8-121.4	WG536127
Cadmium	mg/kg	70.1	61.8	88.2	78.5-121.5	WG536127
Chromium	mg/kg	168	149.	88.7	80.4-120.2	WG536127
Copper	mg/kg	122	114.	93.4	81.6-119.7	WG536127
Lead	mg/kg	113	98.1	86.8	77.3-122.1	WG536127
Nickel	mg/kg	74.1	68.0	91.8	78.8-121.2	WG536127

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May 24, 2011

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Selenium	mg/kg	176	164.	93.2	75.6-125.0	WG536127
Zinc	mg/kg	437	382.	87.4	78.5-121.7	WG536127
pH	su	6.3	6.30	100.	97.98-102.02	WG536341
Specific Conductance	umhos/cm	556	550.	98.9	85-115	WG536551
Chromium, Hexavalent	mg/kg	132	97.0	73.5	50-150	WG536313
TPH (GC/FID) High Fraction	ppm	60	45.2	75.3	50-150	WG536300
o-Terphenyl				72.01	50-150	WG536300
Silver	mg/kg	115	100.	87.0	66-133.9	WG536512
ORP	mV	229	220.	96.1	95.6-104.37	WG536585
1-Methylnaphthalene	mg/kg	.033	0.0237	71.8	41-110	WG536471
2-Chloronaphthalene	mg/kg	.033	0.0235	71.2	43-109	WG536471
2-Methylnaphthalene	mg/kg	.033	0.0235	71.2	38-104	WG536471
Acenaphthene	mg/kg	.033	0.0242	73.4	48-103	WG536471
Acenaphthylene	mg/kg	.033	0.0241	73.1	43-106	WG536471
Anthracene	mg/kg	.033	0.0271	82.2	51-110	WG536471
Benzo(a)anthracene	mg/kg	.033	0.0278	84.1	38-126	WG536471
Benzo(a)pyrene	mg/kg	.033	0.0264	80.0	47-118	WG536471
Benzo(b)fluoranthene	mg/kg	.033	0.0282	85.5	47-118	WG536471
Benzo(g,h,i)perylene	mg/kg	.033	0.0284	86.1	40-125	WG536471
Benzo(k)fluoranthene	mg/kg	.033	0.0275	83.3	45-121	WG536471
Chrysene	mg/kg	.033	0.0271	82.0	35-135	WG536471
Dibenz(a,h)anthracene	mg/kg	.033	0.0293	88.9	41-124	WG536471
Fluoranthene	mg/kg	.033	0.0246	74.5	50-114	WG536471
Fluorene	mg/kg	.033	0.0233	70.7	49-109	WG536471
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0291	88.1	40-126	WG536471
Naphthalene	mg/kg	.033	0.0231	70.0	36-100	WG536471
Phenanthrene	mg/kg	.033	0.0265	80.3	46-108	WG536471
Pyrene	mg/kg	.033	0.0244	73.9	30-136	WG536471
2-Fluorobiphenyl				69.82	33-114	WG536471
Nitrobenzene-d5				62.02	21-120	WG536471
p-Terphenyl-d14				74.69	18-142	WG536471

Analyte	Units	Laboratory Control Result	Sample Duplicate Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/kg	0.0487	0.0493	97.0	76-113	1.15	20	WG536255
Ethylbenzene	mg/kg	0.0507	0.0513	101.	78-115	1.13	20	WG536255
Toluene	mg/kg	0.0493	0.0501	98.0	76-114	1.80	20	WG536255
Total Xylene	mg/kg	0.152	0.153	101.	81-118	0.990	20	WG536255
a,a,a-Trifluorotoluene(PID)				105.0	54-144			WG536255
TPH (GC/FID) Low Fraction	mg/kg	6.16	6.33	112.	67-135	2.78	20	WG536255
a,a,a-Trifluorotoluene(FID)				108.6	59-128			WG536255

pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG536341
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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Specific Conductance	umhos/	550.	550.	99.0		85-115	0	20	WG536551
Chromium, Hexavalent	mg/kg	110.	97.0	83.0		50-150	12.6	20	WG536313
TPH (GC/FID) High Fraction	ppm	42.9	45.2	71.0		50-150	5.20	25	WG536300
o-Terphenyl				69.85		50-150			WG536300
ORP	mV	220.	220.	96.0		95.6-104.37	0	20	WG536585
1-Methylnaphthalene	mg/kg	0.0250	0.0237	76.0		41-110	5.46	24	WG536471
2-Chloronaphthalene	mg/kg	0.0243	0.0235	74.0		43-109	3.50	21	WG536471
2-Methylnaphthalene	mg/kg	0.0250	0.0235	76.0		38-104	6.02	24	WG536471
Acenaphthene	mg/kg	0.0259	0.0242	78.0		48-103	6.74	20	WG536471
Acenaphthylene	mg/kg	0.0258	0.0241	78.0		43-106	6.83	20	WG536471
Anthracene	mg/kg	0.0275	0.0271	83.0		51-110	1.30	22	WG536471
Benzo(a)anthracene	mg/kg	0.0271	0.0278	82.0		38-126	2.25	20	WG536471
Benzo(a)pyrene	mg/kg	0.0277	0.0264	84.0		47-118	4.86	20	WG536471
Benzo(b)fluoranthene	mg/kg	0.0257	0.0282	78.0		47-118	9.39	29	WG536471
Benzo(g,h,i)perylene	mg/kg	0.0294	0.0284	89.0		40-125	3.26	20	WG536471
Benzo(k)fluoranthene	mg/kg	0.0315	0.0275	96.0		45-121	13.6	31	WG536471
Chrysene	mg/kg	0.0285	0.0271	86.0		35-135	5.15	20	WG536471
Dibenz(a,h)anthracene	mg/kg	0.0292	0.0293	88.0		41-124	0.345	20	WG536471
Fluoranthene	mg/kg	0.0252	0.0246	76.0		50-114	2.59	20	WG536471
Fluorene	mg/kg	0.0265	0.0233	80.0		49-109	12.8	19	WG536471
Indeno(1,2,3-cd)pyrene	mg/kg	0.0291	0.0291	88.0		40-126	0.137	20	WG536471
Naphthalene	mg/kg	0.0231	0.0231	70.0		36-100	0.267	24	WG536471
Phenanthrene	mg/kg	0.0271	0.0265	82.0		46-108	2.27	21	WG536471
Pyrene	mg/kg	0.0251	0.0244	76.0		30-136	2.87	20	WG536471
2-Fluorobiphenyl				72.86		33-114			WG536471
Nitrobenzene-d5				64.65		21-120			WG536471
p-Terphenyl-d14				75.15		18-142			WG536471

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.193	0.0140	.05	71.4	32-137	L516414-01	WG536255
Ethylbenzene	mg/kg	0.182	0	.05	72.8	10-150	L516414-01	WG536255
Toluene	mg/kg	0.192	0	.05	76.6	20-142	L516414-01	WG536255
Total Xylene	mg/kg	0.557	0	.15	74.2	16-141	L516414-01	WG536255
a,a,a-Trifluorotoluene(PID)					103.9	54-144		WG536255
TPH (GC/FID) Low Fraction	mg/kg	16.2	0	5.5	58.8	55-109	L516414-01	WG536255
a,a,a-Trifluorotoluene(FID)					104.0	59-128		WG536255
Mercury	mg/kg	0.340	0.0600	.25	112.	70-130	L516382-13	WG536128
Arsenic	mg/kg	47.3	6.30	50	82.0	75-125	L516426-03	WG536127
Barium	mg/kg	203.	160.	50	86.0	75-125	L516426-03	WG536127
Cadmium	mg/kg	41.4	0.790	50	81.2	75-125	L516426-03	WG536127
Chromium	mg/kg	60.2	18.0	50	84.4	75-125	L516426-03	WG536127
Copper	mg/kg	59.9	0	50	120.	75-125	L516426-03	WG536127
Lead	mg/kg	66.7	25.0	50	83.4	75-125	L516426-03	WG536127
Nickel	mg/kg	58.2	0	50	116.	75-125	L516426-03	WG536127
Selenium	mg/kg	52.8	13.0	50	79.6	75-125	L516426-03	WG536127

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

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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

L516416

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

May 24, 2011

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Zinc	mg/kg	143.	0	50	286.*	75-125	L516426-03	WG536127
Chromium,Hexavalent	mg/kg	14.0	0	20	70.0	50-150	L516414-02	WG536313
Silver	mg/kg	47.8	0	50	95.6	75-125	L516837-01	WG536512
TPH (GC/FID) High Fraction	ppm	176.	100.	60	126.	50-150	L515982-01	WG536300
o-Terphenyl					76.13	50-150		WG536300
1-Methylnaphthalene	mg/kg	0.0318	0	.033	96.4	19-131	L516321-02	WG536471
2-Chloronaphthalene	mg/kg	0.0327	0	.033	99.2	38-117	L516321-02	WG536471
2-Methylnaphthalene	mg/kg	0.0368	0.000900	.033	109.	18-125	L516321-02	WG536471
Acenaphthene	mg/kg	0.0308	0	.033	93.2	31-120	L516321-02	WG536471
Acenaphthylene	mg/kg	0.0315	0	.033	95.5	34-116	L516321-02	WG536471
Anthracene	mg/kg	0.0351	0.00130	.033	102.	32-131	L516321-02	WG536471
Benzo(a)anthracene	mg/kg	0.0427	0.00550	.033	113.	32-131	L516321-02	WG536471
Chrysene	mg/kg	0.0375	0.00360	.033	103.	25-137	L516321-02	WG536471
Fluoranthene	mg/kg	0.0427	0.00900	.033	102.	27-138	L516321-02	WG536471
Fluorene	mg/kg	0.0358	0	.033	109.	26-136	L516321-02	WG536471
Naphthalene	mg/kg	0.0297	0	.033	89.9	22-121	L516321-02	WG536471
Phenanthrene	mg/kg	0.0371	0.00330	.033	102.	27-133	L516321-02	WG536471
Pyrene	mg/kg	0.0375	0.00690	.033	92.8	22-133	L516321-02	WG536471
2-Fluorobiphenyl					89.17	33-114		WG536471
Nitrobenzene-d5					86.07	21-120		WG536471
p-Terphenyl-d14					110.3	18-142		WG536471
Benzo(a)pyrene	mg/kg	0.0531	0.00700	.033	27.9*	28-130	L516321-02	WG536471
Benzo(b)fluoranthene	mg/kg	0.0655	0.0130	.033	31.8*	37-130	L516321-02	WG536471
Benzo(g,h,i)perylene	mg/kg	0.0359	0.00740	.033	17.3	10-134	L516321-02	WG536471
Benzo(k)fluoranthene	mg/kg	0.0575	0	.033	34.8	31-129	L516321-02	WG536471
Dibenz(a,h)anthracene	mg/kg	0.0286	0	.033	17.3*	20-134	L516321-02	WG536471
Indeno(1,2,3-cd)pyrene	mg/kg	0.0310	0	.033	18.8	16-135	L516321-02	WG536471

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.173	0.193	63.5	32-137	10.9	39	L516414-01	WG536255
Ethylbenzene	mg/kg	0.156	0.182	62.3	10-150	15.6	44	L516414-01	WG536255
Toluene	mg/kg	0.162	0.192	64.9	20-142	16.5	42	L516414-01	WG536255
Total Xylene	mg/kg	0.481	0.557	64.2	16-141	14.5	46	L516414-01	WG536255
a,a,a-Trifluorotoluene(PID)				104.1	54-144				WG536255
TPH (GC/FID) Low Fraction	mg/kg	14.7	16.2	53.4*	55-109	9.56	20	L516414-01	WG536255
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG536255
Mercury	mg/kg	0.359	0.340	120.	70-130	5.44	20	L516382-13	WG536128
Arsenic	mg/kg	47.1	47.3	81.6	75-125	0.424	20	L516426-03	WG536127
Barium	mg/kg	197.	203.	74.0*	75-125	3.00	20	L516426-03	WG536127
Cadmium	mg/kg	42.1	41.4	82.6	75-125	1.68	20	L516426-03	WG536127
Chromium	mg/kg	62.3	60.2	88.6	75-125	3.43	20	L516426-03	WG536127
Copper	mg/kg	59.6	59.9	119.	75-125	0.502	20	L516426-03	WG536127
Lead	mg/kg	64.1	66.7	78.2	75-125	3.98	20	L516426-03	WG536127
Nickel	mg/kg	58.0	58.2	116.	75-125	0.344	20	L516426-03	WG536127
Selenium	mg/kg	54.4	52.8	82.8	75-125	2.99	20	L516426-03	WG536127

\* 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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May 24, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Zinc	mg/kg	126.	143.	252.*	75-125	12.6	20	L516426-03	WG536127
Chromium, Hexavalent	mg/kg	15.0	14.0	75.0	50-150	6.90	20	L516414-02	WG536313
Silver	mg/kg	44.3	47.8	88.6	75-125	7.60	20	L516837-01	WG536512
TPH (GC/FID) High Fraction	ppm	435.	176.	559.*	50-150	84.9*	25	L515982-01	WG536300
o-Terphenyl				78.52	50-150				WG536300
1-Methylnaphthalene	mg/kg	0.0293	0.0318	88.8	19-131	8.21	30	L516321-02	WG536471
2-Chloronaphthalene	mg/kg	0.0306	0.0327	92.7	38-117	6.83	26	L516321-02	WG536471
2-Methylnaphthalene	mg/kg	0.0327	0.0368	96.4	18-125	11.9	29	L516321-02	WG536471
Acenaphthene	mg/kg	0.0293	0.0308	88.8	31-120	4.83	30	L516321-02	WG536471
Acenaphthylene	mg/kg	0.0298	0.0315	90.2	34-116	5.78	29	L516321-02	WG536471
Anthracene	mg/kg	0.0312	0.0351	90.5	32-131	11.9	26	L516321-02	WG536471
Benzo(a)anthracene	mg/kg	0.0411	0.0427	108.	32-131	3.80	31	L516321-02	WG536471
Chrysene	mg/kg	0.0345	0.0375	93.6	25-137	8.48	22	L516321-02	WG536471
Fluoranthene	mg/kg	0.0419	0.0427	99.8	27-138	1.73	35	L516321-02	WG536471
Fluorene	mg/kg	0.0338	0.0358	102.	26-136	5.72	30	L516321-02	WG536471
Naphthalene	mg/kg	0.0279	0.0297	84.5	22-121	6.15	30	L516321-02	WG536471
Phenanthrene	mg/kg	0.0345	0.0371	94.6	27-133	7.17	36	L516321-02	WG536471
Pyrene	mg/kg	0.0360	0.0375	88.2	22-133	4.12	33	L516321-02	WG536471
2-Fluorobiphenyl				87.80	33-114				WG536471
Nitrobenzene-d5				81.92	21-120				WG536471
p-Terphenyl-d14				99.87	18-142				WG536471
Benzo(a)pyrene	mg/kg	0.0513	0.0531	26.9*	28-130	3.41	28	L516321-02	WG536471
Benzo(b)fluoranthene	mg/kg	0.0664	0.0655	32.4*	37-130	1.32	41	L516321-02	WG536471
Benzo(g,h,i)perylene	mg/kg	0.0277	0.0359	12.3	10-134	25.6	26	L516321-02	WG536471
Benzo(k)fluoranthene	mg/kg	0.0486	0.0575	29.4*	31-129	16.8	42	L516321-02	WG536471
Dibenz(a,h)anthracene	mg/kg	0.0236	0.0286	14.3*	20-134	19.2	25	L516321-02	WG536471
Indeno(1,2,3-cd)pyrene	mg/kg	0.0267	0.0310	16.2	16-135	14.7	26	L516321-02	WG536471

Batch number /Run number / Sample number cross reference

WG536255: R1692629: L516416-01 02  
WG536128: R1692711: L516416-01 02  
WG536111: R1692949: L516416-01 02  
WG536127: R1693371: L516416-01 02  
WG536341: R1694309: L516416-01 02  
WG536551: R1694830: L516416-01 02  
WG536313: R1694831: L516416-01 02  
WG536300: R1694891: L516416-01 02  
WG536512: R1695110: L516416-01 02  
WG536585: R1695269: L516416-01 02  
WG536471: R1695829: L516416-01 02

\* \* 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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May 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 / Jake Harris  
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2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Wednesday July 20, 2011

Report Number: L526345

Samples Received: 07/16/11

Client Project:

Description: A28 MOI

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

July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPW4-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 09:34

ESC Sample # : L526345-01

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.90	0.10	mg/kg	8021/8015	07/18/11	200
Toluene	BDL	1.0	mg/kg	8021/8015	07/18/11	200
Ethylbenzene	3.7	0.10	mg/kg	8021/8015	07/18/11	200
Total Xylene	31.	0.30	mg/kg	8021/8015	07/18/11	200
TPH (GC/FID) Low Fraction	720	20.	mg/kg	GRO	07/18/11	200
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.7		% Rec.	8021/8015	07/18/11	200
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	07/18/11	200
TPH (GC/FID) High Fraction	3000	80.	mg/kg	3546/DRO	07/19/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	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: 07/20/11 09:57 Printed: 07/20/11 09:58



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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 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPW6-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 09:52

ESC Sample # : L526345-02

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.38	0.10	mg/kg	8021/8015	07/18/11	200
Toluene	1.0	1.0	mg/kg	8021/8015	07/18/11	200
Ethylbenzene	3.3	0.10	mg/kg	8021/8015	07/18/11	200
Total Xylene	19.	0.30	mg/kg	8021/8015	07/18/11	200
TPH (GC/FID) Low Fraction	750	20.	mg/kg	GRO	07/18/11	200
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.0		% Rec.	8021/8015	07/18/11	200
a,a,a-Trifluorotoluene(PID)	99.7		% Rec.	8021/8015	07/18/11	200
TPH (GC/FID) High Fraction	1100	20.	mg/kg	3546/DRO	07/19/11	5
Surrogate recovery(%)						
o-Terphenyl	55.2		% Rec.	3546/DRO	07/19/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 07/20/11 09:57 Printed: 07/20/11 09:58

REPORT OF ANALYSIS

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

July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPW9-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 10:32

ESC Sample # : L526345-03

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.2	0.25	mg/kg	8021/8015	07/17/11	500
Toluene	BDL	2.5	mg/kg	8021/8015	07/17/11	500
Ethylbenzene	4.0	0.25	mg/kg	8021/8015	07/17/11	500
Total Xylene	32.	0.75	mg/kg	8021/8015	07/17/11	500
TPH (GC/FID) Low Fraction	770	50.	mg/kg	GRO	07/17/11	500
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.0		% Rec.	8021/8015	07/17/11	500
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/17/11	500
TPH (GC/FID) High Fraction	4200	80.	mg/kg	3546/DRO	07/19/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPW11-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 10:42

ESC Sample # : L526345-04

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	1.5	0.25	mg/kg	8021/8015	07/17/11	500
Toluene	BDL	2.5	mg/kg	8021/8015	07/17/11	500
Ethylbenzene	5.0	0.25	mg/kg	8021/8015	07/17/11	500
Total Xylene	47.	0.75	mg/kg	8021/8015	07/17/11	500
TPH (GC/FID) Low Fraction	910	50.	mg/kg	GRO	07/17/11	500
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	07/17/11	500
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/17/11	500
TPH (GC/FID) High Fraction	6600	200	mg/kg	3546/DRO	07/19/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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2717 County Road 215, Suite 100  
Parachute, CO 81635

July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPS-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 11:07

ESC Sample # : L526345-05

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.016	0.0025	mg/kg	8021/8015	07/17/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/11	5
Ethylbenzene	0.047	0.0025	mg/kg	8021/8015	07/17/11	5
Total Xylene	0.24	0.0075	mg/kg	8021/8015	07/17/11	5
TPH (GC/FID) Low Fraction	11.	0.50	mg/kg	GRO	07/17/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8021/8015	07/17/11	5
a,a,a-Trifluorotoluene(PID)	99.7		% Rec.	8021/8015	07/17/11	5
TPH (GC/FID) High Fraction	4700	200	mg/kg	3546/DRO	07/19/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPC-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 11:41

ESC Sample # : L526345-06

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.024	0.0025	mg/kg	8021/8015	07/17/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/11	5
Ethylbenzene	0.028	0.0025	mg/kg	8021/8015	07/17/11	5
Total Xylene	0.47	0.0075	mg/kg	8021/8015	07/17/11	5
TPH (GC/FID) Low Fraction	8.2	0.50	mg/kg	GRO	07/17/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.6		% Rec.	8021/8015	07/17/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	07/17/11	5
TPH (GC/FID) High Fraction	3900	80.	mg/kg	3546/DRO	07/19/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	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: 07/20/11 09:57 Printed: 07/20/11 09:58

REPORT OF ANALYSIS

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

July 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPN-071611

Collected By : Brennen Graff  
Collection Date : 07/15/11 11:47

ESC Sample # : L526345-07

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.81	0.025	mg/kg	8021/8015	07/17/11	50
Toluene	0.95	0.25	mg/kg	8021/8015	07/17/11	50
Ethylbenzene	2.0	0.025	mg/kg	8021/8015	07/17/11	50
Total Xylene	20.	0.075	mg/kg	8021/8015	07/17/11	50
TPH (GC/FID) Low Fraction	380	5.0	mg/kg	GRO	07/17/11	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.9		% Rec.	8021/8015	07/17/11	50
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	07/17/11	50
TPH (GC/FID) High Fraction	4700	200	mg/kg	3546/DRO	07/19/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	50

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 20, 2011

Date Received : July 16, 2011  
Description : A28 MOI

Sample ID : A28-SPW5-071511

Collected By : Brennen Graff  
Collection Date : 07/15/11 09:45

ESC Sample # : L526345-08

Site ID : A28

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.013	0.0025	mg/kg	8021/8015	07/17/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/17/11	5
Ethylbenzene	0.043	0.0025	mg/kg	8021/8015	07/17/11	5
Total Xylene	0.50	0.0075	mg/kg	8021/8015	07/17/11	5
TPH (GC/FID) Low Fraction	17.	0.50	mg/kg	GRO	07/17/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	07/17/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	07/17/11	5
TPH (GC/FID) High Fraction	2500	80.	mg/kg	3546/DRO	07/19/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/19/11	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
L526345-01	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-03	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-04	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-05	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-06	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-07	WG546042	SAMP	o-Terphenyl	R1768630	J7
L526345-08	WG546042	SAMP	o-Terphenyl	R1768630	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  
07/20/11 at 09:58:02

TSR Signing Reports: 358  
R3 - Rush: Two Day

TPH = GRO/DRO

Sample: L526345-01 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-02 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-03 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-04 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-05 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-06 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-07 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57  
Sample: L526345-08 Account: ENCANACO Received: 07/16/11 09:00 Due Date: 07/20/11 00:00 RPT Date: 07/20/11 09:57



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Chris Hines / Jake Harris  
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Level II

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July 20, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG545987	07/17/11 00:17
Ethylbenzene	< .0005	mg/kg			WG545987	07/17/11 00:17
Toluene	< .005	mg/kg			WG545987	07/17/11 00:17
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG545987	07/17/11 00:17
Total Xylene	< .0015	mg/kg			WG545987	07/17/11 00:17
a,a,a-Trifluorotoluene(FID)		% Rec.	97.05	59-128	WG545987	07/17/11 00:17
a,a,a-Trifluorotoluene(PID)		% Rec.	100.9	54-144	WG545987	07/17/11 00:17
TPH (GC/FID) High Fraction	< 4	ppm			WG546042	07/18/11 10:19
o-Terphenyl		% Rec.	88.45	50-150	WG546042	07/18/11 10:19
Benzene	< .0005	mg/kg			WG546134	07/18/11 20:00
Ethylbenzene	< .0005	mg/kg			WG546134	07/18/11 20:00
Toluene	< .005	mg/kg			WG546134	07/18/11 20:00
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG546134	07/18/11 20:00
Total Xylene	< .0015	mg/kg			WG546134	07/18/11 20:00
a,a,a-Trifluorotoluene(FID)		% Rec.	96.47	59-128	WG546134	07/18/11 20:00
a,a,a-Trifluorotoluene(PID)		% Rec.	99.62	54-144	WG546134	07/18/11 20:00
TPH (GC/FID) High Fraction	< 4	ppm			WG546153	07/19/11 11:08
o-Terphenyl		% Rec.	75.14	50-150	WG546153	07/19/11 11:08
Analyte	Units	Laboratory Control		% Rec	Limit	Batch
		Known Val	Sample Result			
Benzene	mg/kg	.05	0.0477	95.5	76-113	WG545987
Ethylbenzene	mg/kg	.05	0.0464	92.7	78-115	WG545987
Toluene	mg/kg	.05	0.0463	92.7	76-114	WG545987
Total Xylene	mg/kg	.15	0.142	94.5	81-118	WG545987
a,a,a-Trifluorotoluene(FID)				97.32	59-128	WG545987
a,a,a-Trifluorotoluene(PID)				100.9	54-144	WG545987
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.73	86.1	67-135	WG545987
a,a,a-Trifluorotoluene(FID)				106.4	59-128	WG545987
a,a,a-Trifluorotoluene(PID)				112.9	54-144	WG545987
TPH (GC/FID) High Fraction	ppm	60	57.6	96.0	50-150	WG546042
o-Terphenyl				73.89	50-150	WG546042
Benzene	mg/kg	.05	0.0467	93.3	76-113	WG546134
Ethylbenzene	mg/kg	.05	0.0558	112.	78-115	WG546134
Toluene	mg/kg	.05	0.0515	103.	76-114	WG546134
Total Xylene	mg/kg	.15	0.165	110.	81-118	WG546134
a,a,a-Trifluorotoluene(PID)				99.09	54-144	WG546134
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.94	108.	67-135	WG546134
a,a,a-Trifluorotoluene(FID)				102.1	59-128	WG546134
TPH (GC/FID) High Fraction	ppm	60	47.3	78.8	50-150	WG546153
o-Terphenyl				60.46	50-150	WG546153

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0533	0.0477	106.	76-113	11.0	20	WG545987

\* 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 Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Ethylbenzene	mg/kg	0.0509	0.0464	102.	78-115	9.42	20	WG545987
Toluene	mg/kg	0.0513	0.0463	103.	76-114	10.2	20	WG545987
Total Xylene	mg/kg	0.155	0.142	103.	81-118	8.81	20	WG545987
a,a,a-Trifluorotoluene(FID)				97.36	59-128			WG545987
a,a,a-Trifluorotoluene(PID)				100.3	54-144			WG545987
TPH (GC/FID) Low Fraction	mg/kg	5.03	4.73	92.0	67-135	6.13	20	WG545987
a,a,a-Trifluorotoluene(FID)				107.2	59-128			WG545987
a,a,a-Trifluorotoluene(PID)				112.3	54-144			WG545987
TPH (GC/FID) High Fraction	ppm	59.2	57.6	99.0	50-150	2.69	20	WG546042
o-Terphenyl				76.15	50-150			WG546042
Benzene	mg/kg	0.0436	0.0467	87.0	76-113	6.71	20	WG546134
Ethylbenzene	mg/kg	0.0519	0.0558	104.	78-115	7.08	20	WG546134
Toluene	mg/kg	0.0480	0.0515	96.0	76-114	7.03	20	WG546134
Total Xylene	mg/kg	0.154	0.165	103.	81-118	6.94	20	WG546134
a,a,a-Trifluorotoluene(PID)				99.36	54-144			WG546134
TPH (GC/FID) Low Fraction	mg/kg	5.87	5.94	107.	67-135	1.07	20	WG546134
a,a,a-Trifluorotoluene(FID)				101.8	59-128			WG546134
TPH (GC/FID) High Fraction	ppm	52.2	47.3	87.0	50-150	9.87	20	WG546153
o-Terphenyl				68.33	50-150			WG546153

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	20.2	0.154	5.5	72.8	55-109	L526287-01	WG545987
a,a,a-Trifluorotoluene(FID)					104.1	59-128		WG545987
a,a,a-Trifluorotoluene(PID)					110.1	54-144		WG545987
Benzene	mg/kg	0.206	0	.05	82.3	32-137	L526287-01	WG545987
Ethylbenzene	mg/kg	0.191	0	.05	76.4	10-150	L526287-01	WG545987
Toluene	mg/kg	0.200	0	.05	80.0	20-142	L526287-01	WG545987
Total Xylene	mg/kg	0.588	0	.15	78.4	16-141	L526287-01	WG545987
a,a,a-Trifluorotoluene(FID)					97.37	59-128		WG545987
a,a,a-Trifluorotoluene(PID)					99.87	54-144		WG545987
TPH (GC/FID) High Fraction	ppm	85.4	13.0	60	121.	50-150	L525745-61	WG546042
o-Terphenyl					64.60	50-150		WG546042
Benzene	mg/kg	0.249	0.00320	.05	98.4	32-137	L526470-04	WG546134
Ethylbenzene	mg/kg	0.263	0	.05	105.	10-150	L526470-04	WG546134
Toluene	mg/kg	0.258	0	.05	103.	20-142	L526470-04	WG546134
Total Xylene	mg/kg	0.777	0.0160	.15	101.	16-141	L526470-04	WG546134
a,a,a-Trifluorotoluene(PID)					98.76	54-144		WG546134
TPH (GC/FID) Low Fraction	mg/kg	23.4	0.610	5.5	83.0	55-109	L526470-04	WG546134
a,a,a-Trifluorotoluene(FID)					99.32	59-128		WG546134
TPH (GC/FID) High Fraction	ppm	98.8	40.5	60	97.2	50-150	L526217-01	WG546153
o-Terphenyl					63.26	50-150		WG546153

\* 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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July 20, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	20.0	20.2	72.2	55-109	0.890	20	L526287-01	WG545987
a,a,a-Trifluorotoluene(FID)				104.8	59-128				WG545987
a,a,a-Trifluorotoluene(PID)				110.4	54-144				WG545987
Benzene	mg/kg	0.189	0.206	75.6	32-137	8.46	39	L526287-01	WG545987
Ethylbenzene	mg/kg	0.174	0.191	69.6	10-150	9.29	44	L526287-01	WG545987
Toluene	mg/kg	0.180	0.200	72.1	20-142	10.4	42	L526287-01	WG545987
Total Xylene	mg/kg	0.531	0.588	70.8	16-141	10.2	46	L526287-01	WG545987
a,a,a-Trifluorotoluene(FID)				97.09	59-128				WG545987
a,a,a-Trifluorotoluene(PID)				100.1	54-144				WG545987
TPH (GC/FID) High Fraction	ppm	74.8	85.4	103.	50-150	13.2	20	L525745-61	WG546042
o-Terphenyl				55.68	50-150				WG546042
Benzene	mg/kg	0.230	0.249	90.5	32-137	8.22	39	L526470-04	WG546134
Ethylbenzene	mg/kg	0.228	0.263	91.1	10-150	14.3	44	L526470-04	WG546134
Toluene	mg/kg	0.231	0.258	92.3	20-142	11.2	42	L526470-04	WG546134
Total Xylene	mg/kg	0.658	0.777	85.5	16-141	16.7	46	L526470-04	WG546134
a,a,a-Trifluorotoluene(PID)				99.23	54-144				WG546134
TPH (GC/FID) Low Fraction	mg/kg	22.1	23.4	78.3	55-109	5.65	20	L526470-04	WG546134
a,a,a-Trifluorotoluene(FID)				98.69	59-128				WG546134
TPH (GC/FID) High Fraction	ppm	103.	98.8	103.	50-150	3.67	20	L526217-01	WG546153
o-Terphenyl				62.50	50-150				WG546153

Batch number /Run number / Sample number cross reference

WG545987: R1766610: L526345-03 04 05 06 07 08  
WG546042: R1768630: L526345-01 03 04 05 06 07 08  
WG546134: R1769910: L526345-01 02  
WG546153: R1770350: L526345-02

\* \* 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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July 20, 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

Monday August 08, 2011

Report Number: L529021

Samples Received: 08/03/11

Client Project: A28

Description: A28 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

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 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-1-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 09:45

ESC Sample # : L529021-01

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.2		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	94.5		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Tax I.D. 62-0814289

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# REPORT OF ANALYSIS

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-2-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 10:00

ESC Sample # : L529021-02

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/05/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.2		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-3-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 10:15

ESC Sample # : L529021-03

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/05/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	1600	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-4-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 10:30

ESC Sample # : L529021-04

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/05/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.2		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	93.9		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	1600	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-5-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 10:45

ESC Sample # : L529021-05

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0035	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.023	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	1.8	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	96.2		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	4400	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-6-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 11:00

ESC Sample # : L529021-06

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	95.4		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	960	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-7-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 11:15

ESC Sample # : L529021-07

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/06/11	1
Chromium, Trivalent	28.	2.0	mg/kg	Calc.	08/04/11	1
ORP	150		mV	2580	08/03/11	1
pH	7.9		su	9045D	08/04/11	1
Sodium Adsorption Ratio	17.			Calc.	08/06/11	1
Specific Conductance	3200		umhos/cm	9050AMod	08/03/11	1
Mercury	0.32	0.020	mg/kg	7471	08/04/11	1
Arsenic	15.	1.0	mg/kg	6010B	08/04/11	1
Barium	5300	1.2	mg/kg	6010B	08/04/11	5
Cadmium	BDL	1.2	mg/kg	6010B	08/04/11	5
Chromium	28.	0.50	mg/kg	6010B	08/04/11	1
Copper	41.	1.0	mg/kg	6010B	08/04/11	1
Lead	18.	0.25	mg/kg	6010B	08/04/11	1
Nickel	29.	1.0	mg/kg	6010B	08/04/11	1
Selenium	9.1	5.0	mg/kg	6010B	08/04/11	5
Silver	BDL	0.50	mg/kg	6010B	08/04/11	1
Zinc	75.	1.5	mg/kg	6010B	08/04/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.017	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	5.4	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.2		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	91.2		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	5000	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.088	0.060	mg/kg	8270C-SIM	08/05/11	10
Acenaphthene	0.11	0.060	mg/kg	8270C-SIM	08/05/11	10
Acenaphthylene	0.16	0.060	mg/kg	8270C-SIM	08/05/11	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L529021-07 (PH) - 7.9@20.8c



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# REPORT OF ANALYSIS

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-7-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 11:15

ESC Sample # : L529021-07

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Fluorene	0.71	0.060	mg/kg	8270C-SIM	08/05/11	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
Naphthalene	0.45	0.12	mg/kg	8270C-SIM	08/07/11	20
Phenanthrene	0.39	0.060	mg/kg	8270C-SIM	08/05/11	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/05/11	10
1-Methylnaphthalene	0.78	0.12	mg/kg	8270C-SIM	08/07/11	20
2-Methylnaphthalene	1.5	0.12	mg/kg	8270C-SIM	08/07/11	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	08/07/11	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	08/07/11	20
2-Fluorobiphenyl	115.		% Rec.	8270C-SIM	08/05/11	10
p-Terphenyl-d14	52.2		% Rec.	8270C-SIM	08/05/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L529021-07 (PH) - 7.9@20.8c



REPORT OF ANALYSIS

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-8-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 11:30

ESC Sample # : L529021-08

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0054	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	0.0060	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.064	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	7.8	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.4		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	92.5		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	6000	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-9-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 11:45

ESC Sample # : L529021-09

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0025	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	0.0030	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.043	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	11.	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.1		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	92.7		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	6300	80.	mg/kg	3546/DRO	08/05/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	20

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-10-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 12:00

ESC Sample # : L529021-10

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0037	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.028	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	11.	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	96.9		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	7200	200	mg/kg	3546/DRO	08/05/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	50

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-11-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 12:15

ESC Sample # : L529021-11

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0033	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	0.0028	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.043	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	15.	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.4		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	90.3		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	3800	200	mg/kg	3546/DRO	08/05/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	50

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

August 08, 2011

Date Received : August 03, 2011  
Description : A28 Soil Spoil

Sample ID : A28-SS-12-080211

Collected By : Tracy Loftus  
Collection Date : 08/02/11 12:30

ESC Sample # : L529021-12

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	0.0031	0.0025	mg/kg	8021/8015	08/04/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/04/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/04/11	5
Total Xylene	0.034	0.0075	mg/kg	8021/8015	08/04/11	5
TPH (GC/FID) Low Fraction	10.	0.50	mg/kg	GRO	08/04/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	8021/8015	08/04/11	5
a,a,a-Trifluorotoluene(PID)	94.3		% Rec.	8021/8015	08/04/11	5
TPH (GC/FID) High Fraction	6800	200	mg/kg	3546/DRO	08/05/11	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/05/11	50

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: 08/08/11 17:12 Printed: 08/08/11 17:18

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L529021-01	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-02	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-03	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-04	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-05	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-06	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-07	WG548818	SAMP	Cadmium	R1804031	O
	WG548680	SAMP	Nitrobenzene-d5	R1804570	J7
	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-08	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-09	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-10	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-11	WG548815	SAMP	o-Terphenyl	R1804192	J7
L529021-12	WG548815	SAMP	o-Terphenyl	R1804192	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.



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Est. 1970

August 08, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Specific Conductance	2.20	umhos/cm			WG548842	08/03/11 22:13
pH	4.60	su			WG548844	08/04/11 10:45
Mercury	< .02	mg/kg			WG548772	08/04/11 09:26
Benzene	< .0005	mg/kg			WG548762	08/04/11 01:08
Ethylbenzene	< .0005	mg/kg			WG548762	08/04/11 01:08
Toluene	< .005	mg/kg			WG548762	08/04/11 01:08
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG548762	08/04/11 01:08
Total Xylene	< .0015	mg/kg			WG548762	08/04/11 01:08
a,a,a-Trifluorotoluene(FID)		% Rec.	99.13	59-128	WG548762	08/04/11 01:08
a,a,a-Trifluorotoluene(PID)		% Rec.	98.63	54-144	WG548762	08/04/11 01:08
Barium	< .25	mg/kg			WG548818	08/04/11 19:10
Cadmium	< .25	mg/kg			WG548818	08/04/11 19:10
Selenium	< 1	mg/kg			WG548818	08/04/11 19:10
TPH (GC/FID) High Fraction	< 4	ppm			WG548815	08/04/11 22:13
o-Terphenyl		% Rec.	83.92	50-150	WG548815	08/04/11 22:13
1-Methylnaphthalene	< .006	mg/kg			WG548680	08/04/11 10:30
2-Chloronaphthalene	< .006	mg/kg			WG548680	08/04/11 10:30
2-Methylnaphthalene	< .006	mg/kg			WG548680	08/04/11 10:30
Acenaphthene	< .006	mg/kg			WG548680	08/04/11 10:30
Acenaphthylene	< .006	mg/kg			WG548680	08/04/11 10:30
Anthracene	< .006	mg/kg			WG548680	08/04/11 10:30
Benzo(a)anthracene	< .006	mg/kg			WG548680	08/04/11 10:30
Benzo(a)pyrene	< .006	mg/kg			WG548680	08/04/11 10:30
Benzo(b)fluoranthene	< .006	mg/kg			WG548680	08/04/11 10:30
Benzo(g,h,i)perylene	< .006	mg/kg			WG548680	08/04/11 10:30
Benzo(k)fluoranthene	< .006	mg/kg			WG548680	08/04/11 10:30
Chrysene	< .006	mg/kg			WG548680	08/04/11 10:30
Dibenz(a,h)anthracene	< .006	mg/kg			WG548680	08/04/11 10:30
Fluoranthene	< .006	mg/kg			WG548680	08/04/11 10:30
Fluorene	< .006	mg/kg			WG548680	08/04/11 10:30
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG548680	08/04/11 10:30
Naphthalene	< .006	mg/kg			WG548680	08/04/11 10:30
Phenanthrene	< .006	mg/kg			WG548680	08/04/11 10:30
Pyrene	< .006	mg/kg			WG548680	08/04/11 10:30
2-Fluorobiphenyl		% Rec.	91.40	34-129	WG548680	08/04/11 10:30
Nitrobenzene-d5		% Rec.	83.29	14-141	WG548680	08/04/11 10:30
p-Terphenyl-d14		% Rec.	96.89	25-139	WG548680	08/04/11 10:30
Chromium,Hexavalent	< 2	mg/kg			WG549075	08/06/11 15:40
Total Xylene	< .0015	mg/kg			WG549117	08/05/11 11:01
a,a,a-Trifluorotoluene(FID)		% Rec.	94.42	59-128	WG549117	08/05/11 11:01
a,a,a-Trifluorotoluene(PID)		% Rec.	101.4	54-144	WG549117	08/05/11 11:01

\* Performance of this Analyte is outside of established criteria.  
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Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Specific Conductance	umhos/cm	2500	2200		12.8	20	L528658-01	WG548842
Specific Conductance	umhos/cm	2700	3200		16.9	20	L529021-07	WG548842
ORP	mV	150.	150.		2.70	20	L529021-07	WG548845
pH	su	8.60	8.70		1.16*	1	L528706-01	WG548844
pH	su	7.90	7.90		0	1	L529021-07	WG548844
Mercury	mg/kg	0	0		0	20	L528913-16	WG548772
Barium	mg/kg	47.0	43.0		8.04	20	L529156-04	WG548818
Cadmium	mg/kg	0	0		0	20	L529156-04	WG548818
Selenium	mg/kg	0	0		0	20	L529156-04	WG548818
Chromium,Hexavalent	mg/kg	1.40	1.60		13.3	20	L529193-01	WG549075
Chromium,Hexavalent	mg/kg	0	0		0	20	L528811-03	WG549075

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Specific Conductance	umhos/cm	427	430.	101.	85-115	WG548842
ORP	mV	229	220.	96.1	95.6-104.37	WG548845
pH	su	9.04	8.90	98.5	98-101	WG548844
Mercury	mg/kg	8.77	9.84	112.	71.6-127.7	WG548772
Benzene	mg/kg	.05	0.0504	101.	76-113	WG548762
Ethylbenzene	mg/kg	.05	0.0530	106.	78-115	WG548762
Toluene	mg/kg	.05	0.0518	104.	76-114	WG548762
Total Xylene	mg/kg	.15	0.160	106.	81-118	WG548762
a,a,a-Trifluorotoluene(FID)				98.33	59-128	WG548762
a,a,a-Trifluorotoluene(PID)				100.9	54-144	WG548762
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.18	112.	67-135	WG548762
a,a,a-Trifluorotoluene(FID)				105.1	59-128	WG548762
a,a,a-Trifluorotoluene(PID)				104.4	54-144	WG548762
Barium	mg/kg	420	380.	90.5	78.8-121.4	WG548818
Cadmium	mg/kg	70.1	69.8	99.6	78.5-121.5	WG548818
Selenium	mg/kg	176	153.	86.9	75.6-125.0	WG548818
TPH (GC/FID) High Fraction	ppm	60	51.2	85.4	50-150	WG548815
o-Terphenyl				74.97	50-150	WG548815
1-Methylnaphthalene	mg/kg	.033	0.0306	92.8	48-113	WG548680
2-Chloronaphthalene	mg/kg	.033	0.0297	90.1	51-114	WG548680
2-Methylnaphthalene	mg/kg	.033	0.0285	86.3	44-109	WG548680

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
Acenaphthene	mg/kg	.033	0.0319	96.5	52-108	WG548680
Acenaphthylene	mg/kg	.033	0.0316	95.8	51-110	WG548680
Anthracene	mg/kg	.033	0.0302	91.6	58-120	WG548680
Benzo(a)anthracene	mg/kg	.033	0.0327	99.2	54-110	WG548680
Benzo(a)pyrene	mg/kg	.033	0.0311	94.3	56-118	WG548680
Benzo(b)fluoranthene	mg/kg	.033	0.0298	90.3	55-114	WG548680
Benzo(g,h,i)perylene	mg/kg	.033	0.0327	99.2	48-130	WG548680
Benzo(k)fluoranthene	mg/kg	.033	0.0337	102.	55-122	WG548680
Chrysene	mg/kg	.033	0.0322	97.4	57-118	WG548680
Dibenz(a,h)anthracene	mg/kg	.033	0.0339	103.	53-122	WG548680
Fluoranthene	mg/kg	.033	0.0300	91.0	58-118	WG548680
Fluorene	mg/kg	.033	0.0301	91.3	54-109	WG548680
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0331	100.	51-125	WG548680
Naphthalene	mg/kg	.033	0.0284	86.2	45-105	WG548680
Phenanthrene	mg/kg	.033	0.0299	90.7	53-114	WG548680
Pyrene	mg/kg	.033	0.0326	98.7	53-121	WG548680
2-Fluorobiphenyl				89.93	34-129	WG548680
Nitrobenzene-d5				79.56	14-141	WG548680
p-Terphenyl-d14				87.84	25-139	WG548680
Chromium, Hexavalent	mg/kg	132	99.4	75.3	50-150	WG549075
Total Xylene	mg/kg	.15	0.151	101.	81-118	WG549117
a,a,a-Trifluorotoluene (PID)				99.71	54-144	WG549117

Analyte	Units	Laboratory Control	Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref %Rec				
Specific Conductance	umhos/	430.	430.	101.	85-115	0	WG548842
ORP	mV	220.	220.	96.0	95.6-104.37	0	WG548845
pH	su	8.90	8.90	98.0	98-101	0	WG548844
Benzene	mg/kg	0.0529	0.0504	106.	76-113	4.84	WG548762
Ethylbenzene	mg/kg	0.0555	0.0530	111.	78-115	4.73	WG548762
Toluene	mg/kg	0.0542	0.0518	108.	76-114	4.56	WG548762
Total Xylene	mg/kg	0.167	0.160	112.	81-118	4.76	WG548762
a,a,a-Trifluorotoluene (FID)				98.49	59-128		WG548762
a,a,a-Trifluorotoluene (PID)				98.71	54-144		WG548762
TPH (GC/FID) Low Fraction	mg/kg	6.59	6.18	120.	67-135	6.52	WG548762
a,a,a-Trifluorotoluene (FID)				106.6	59-128		WG548762
a,a,a-Trifluorotoluene (PID)				106.0	54-144		WG548762
TPH (GC/FID) High Fraction	ppm	52.4	51.2	87.0	50-150	2.22	WG548815
o-Terphenyl				74.49	50-150		WG548815
1-Methylnaphthalene	mg/kg	0.0310	0.0306	94.0	48-113	1.04	WG548680
2-Chloronaphthalene	mg/kg	0.0310	0.0297	94.0	51-114	4.15	WG548680
2-Methylnaphthalene	mg/kg	0.0308	0.0285	93.0	44-109	7.72	WG548680
Acenaphthene	mg/kg	0.0314	0.0319	95.0	52-108	1.41	WG548680
Acenaphthylene	mg/kg	0.0317	0.0316	96.0	51-110	0.475	WG548680

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Anthracene	mg/kg	0.0324	0.0302	98.0		58-120	6.98	20	WG548680
Benzo(a)anthracene	mg/kg	0.0321	0.0327	97.0		54-110	2.11	22	WG548680
Benzo(a)pyrene	mg/kg	0.0312	0.0311	94.0		56-118	0.158	21	WG548680
Benzo(b)fluoranthene	mg/kg	0.0303	0.0298	92.0		55-114	1.70	20	WG548680
Benzo(g,h,i)perylene	mg/kg	0.0331	0.0327	100.		48-130	1.01	20	WG548680
Benzo(k)fluoranthene	mg/kg	0.0338	0.0337	102.		55-122	0.418	25	WG548680
Chrysene	mg/kg	0.0329	0.0322	100.		57-118	2.33	20	WG548680
Dibenz(a,h)anthracene	mg/kg	0.0336	0.0339	102.		53-122	0.795	20	WG548680
Fluoranthene	mg/kg	0.0313	0.0300	95.0		58-118	4.06	20	WG548680
Fluorene	mg/kg	0.0304	0.0301	92.0		54-109	0.796	20	WG548680
Indeno(1,2,3-cd)pyrene	mg/kg	0.0334	0.0331	101.		51-125	0.874	21	WG548680
Naphthalene	mg/kg	0.0311	0.0284	94.0		45-105	9.09	24	WG548680
Phenanthrene	mg/kg	0.0317	0.0299	96.0		53-114	5.74	20	WG548680
Pyrene	mg/kg	0.0335	0.0326	102.		53-121	2.88	20	WG548680
2-Fluorobiphenyl				90.91		34-129			WG548680
Nitrobenzene-d5				85.37		14-141			WG548680
p-Terphenyl-d14				91.11		25-139			WG548680
Chromium,Hexavalent	mg/kg	98.0	99.4	74.0		50-150	1.42	20	WG549075
Total Xylene	mg/kg	0.150	0.151	100.		81-118	0.910	20	WG549117
a,a,a-Trifluorotoluene(PID)				100.4		54-144			WG549117

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.294	0	.25	118.	70-130	L528913-16	WG548772
Benzene	mg/kg	0.226	0	.05	90.5	32-137	L529021-01	WG548762
Ethylbenzene	mg/kg	0.200	0	.05	79.8	10-150	L529021-01	WG548762
Toluene	mg/kg	0.210	0	.05	84.1	20-142	L529021-01	WG548762
Total Xylene	mg/kg	0.476	0	.15	63.5	16-141	L529021-01	WG548762
a,a,a-Trifluorotoluene(FID)					94.35	59-128		WG548762
a,a,a-Trifluorotoluene(PID)					94.58	54-144		WG548762
TPH (GC/FID) Low Fraction	mg/kg	18.5	0	5.5	67.2	55-109	L529021-01	WG548762
a,a,a-Trifluorotoluene(FID)					101.9	59-128		WG548762
a,a,a-Trifluorotoluene(PID)					107.6	54-144		WG548762
Barium	mg/kg	83.0	43.0	50	80.0	75-125	L529156-04	WG548818
Cadmium	mg/kg	46.4	0	50	92.8	75-125	L529156-04	WG548818
Selenium	mg/kg	39.7	0	50	79.4	75-125	L529156-04	WG548818
1-Methylnaphthalene	mg/kg	0.0230	0.00320	.033	59.9	25-155	L528583-11	WG548680
2-Chloronaphthalene	mg/kg	0.0227	0	.033	68.8	31-153	L528583-11	WG548680
2-Methylnaphthalene	mg/kg	0.0203	0	.033	61.5	22-172	L528583-11	WG548680
Acenaphthene	mg/kg	0.0265	0.00280	.033	71.7	43-133	L528583-11	WG548680
Acenaphthylene	mg/kg	0.0264	0	.033	80.0	42-146	L528583-11	WG548680
Anthracene	mg/kg	0.0348	0.00360	.033	94.5	38-153	L528583-11	WG548680
Benzo(a)anthracene	mg/kg	0.0271	0	.033	82.1	31-142	L528583-11	WG548680
Benzo(a)pyrene	mg/kg	0.0242	0	.033	73.2	26-152	L528583-11	WG548680
Benzo(b)fluoranthene	mg/kg	0.0254	0	.033	76.9	10-188	L528583-11	WG548680
Benzo(g,h,i)perylene	mg/kg	0.0125	0	.033	38.0	10-176	L528583-11	WG548680
Benzo(k)fluoranthene	mg/kg	0.0257	0	.033	77.8	22-163	L528583-11	WG548680
Chrysene	mg/kg	0.0246	0	.033	74.5	26-146	L528583-11	WG548680

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Dibenz(a,h)anthracene	mg/kg	0.0148	0	.033	44.7	10-160	L528583-11	WG548680
Fluoranthene	mg/kg	0.0271	0	.033	82.2	23-160	L528583-11	WG548680
Fluorene	mg/kg	0.0295	0.00140	.033	85.0	44-143	L528583-11	WG548680
Indeno(1,2,3-cd)pyrene	mg/kg	0.0148	0	.033	44.7	10-157	L528583-11	WG548680
Naphthalene	mg/kg	0.0211	0	.033	63.9	22-156	L528583-11	WG548680
Phenanthrene	mg/kg	0.0310	0.00840	.033	68.5	23-164	L528583-11	WG548680
Pyrene	mg/kg	0.0230	0.00180	.033	64.3	12-170	L528583-11	WG548680
2-Fluorobiphenyl					69.90	34-129		WG548680
Nitrobenzene-d5					66.05	14-141		WG548680
p-Terphenyl-d14					70.68	25-139		WG548680

Chromium, Hexavalent	mg/kg	15.2	0	20	76.0	50-150	L528811-04	WG549075
Total Xylene	mg/kg	0.488	0	.15	65.0	16-141	L529453-07	WG549117
a,a,a-Trifluorotoluene (PID)					100.1	54-144		WG549117

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.258	0.294	103.	70-130	13.0	20	L528913-16	WG548772
Benzene	mg/kg	0.200	0.226	80.0	32-137	12.3	39	L529021-01	WG548762
Ethylbenzene	mg/kg	0.162	0.200	65.0	10-150	20.5	44	L529021-01	WG548762
Toluene	mg/kg	0.166	0.210	66.2	20-142	23.7	42	L529021-01	WG548762
Total Xylene	mg/kg	0.330	0.476	44.0	16-141	36.2	46	L529021-01	WG548762
a,a,a-Trifluorotoluene (FID)				95.96	59-128				WG548762
a,a,a-Trifluorotoluene (PID)				95.78	54-144				WG548762
TPH (GC/FID) Low Fraction	mg/kg	16.3	18.5	59.4	55-109	12.3	20	L529021-01	WG548762
a,a,a-Trifluorotoluene (FID)				101.4	59-128				WG548762
a,a,a-Trifluorotoluene (PID)				98.22	54-144				WG548762

Barium	mg/kg	88.7	83.0	91.4	75-125	6.64	20	L529156-04	WG548818
Cadmium	mg/kg	49.3	46.4	98.6	75-125	6.06	20	L529156-04	WG548818
Selenium	mg/kg	41.6	39.7	83.2	75-125	4.67	20	L529156-04	WG548818

1-Methylnaphthalene	mg/kg	0.0474	0.0230	134.	25-155	69.4*	27	L528583-11	WG548680
2-Chloronaphthalene	mg/kg	0.0240	0.0227	72.9	31-153	5.74	22	L528583-11	WG548680
2-Methylnaphthalene	mg/kg	0.0208	0.0203	63.1	22-172	2.58	29	L528583-11	WG548680
Acenaphthene	mg/kg	0.0355	0.0265	99.2	43-133	29.2*	26	L528583-11	WG548680
Acenaphthylene	mg/kg	0.0281	0.0264	85.3	42-146	6.30	22	L528583-11	WG548680
Anthracene	mg/kg	0.0474	0.0348	133.	38-153	30.7*	27	L528583-11	WG548680
Benzo(a)anthracene	mg/kg	0.0219	0.0271	66.4	31-142	21.1	31	L528583-11	WG548680
Benzo(a)pyrene	mg/kg	0.0201	0.0242	60.9	26-152	18.3	32	L528583-11	WG548680
Benzo(b)fluoranthene	mg/kg	0.0202	0.0254	61.2	10-188	22.8	33	L528583-11	WG548680
Benzo(g,h,i)perylene	mg/kg	0.0100	0.0125	30.4	10-176	22.0	30	L528583-11	WG548680
Benzo(k)fluoranthene	mg/kg	0.0226	0.0257	68.4	22-163	13.0	29	L528583-11	WG548680
Chrysene	mg/kg	0.0207	0.0246	62.6	26-146	17.4	30	L528583-11	WG548680
Dibenz(a,h)anthracene	mg/kg	0.0119	0.0148	36.0	10-160	21.5	39	L528583-11	WG548680
Fluoranthene	mg/kg	0.0243	0.0271	73.7	23-160	10.8	22	L528583-11	WG548680
Fluorene	mg/kg	0.0338	0.0295	98.3	44-143	13.8	23	L528583-11	WG548680
Indeno(1,2,3-cd)pyrene	mg/kg	0.0117	0.0148	35.6	10-157	22.7	40	L528583-11	WG548680
Naphthalene	mg/kg	0.0374	0.0211	113.	22-156	55.8*	27	L528583-11	WG548680
Phenanthrene	mg/kg	0.0588	0.0310	153.	23-164	61.9*	25	L528583-11	WG548680
Pyrene	mg/kg	0.0283	0.0230	80.3	12-170	20.5	24	L528583-11	WG548680

\* 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

L529021

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

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August 08, 2011

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
2-Fluorobiphenyl				83.18	34-129				
Nitrobenzene-d5				73.33	14-141				
p-Terphenyl-d14				71.17	25-139				
Chromium,Hexavalent	mg/kg	14.9	15.2	74.5	50-150	1.99	20	L528811-04	WG549075
Total Xylene	mg/kg	0.682	0.488	90.9	16-141	33.2	46	L529453-07	WG549117
a,a,a-Trifluorotoluene(PID)				99.51	54-144				WG549117

Batch number /Run number / Sample number cross reference

WG548842: R1802532: L529021-07  
WG548845: R1802550: L529021-07  
WG548844: R1802872: L529021-07  
WG548772: R1803171: L529021-07  
WG548762: R1803290: L529021-01 02 03 04 05 06 07 08 09 10 11 12  
WG548818: R1804030 R1804031: L529021-07 07  
WG548815: R1804192: L529021-01 02 03 04 05 06 07 08 09 10 11 12  
WG548680: R1804570: L529021-07  
WG549075: R1805450: L529021-07  
WG549117: R1805613: L529021-02 03 04  
WG548827: R1807011: L529021-07

\* \* 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

Friday September 16, 2011

Report Number: L535791

Samples Received: 09/14/11

Client Project:

Description: A28 Soil Spoil 091311

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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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

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-1-091311

Collected By : TL/JB  
Collection Date : 09/13/11 11:15

ESC Sample # : L535791-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/14/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/14/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/14/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	8021/8015	09/14/11	5
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021/8015	09/14/11	5
TPH (GC/FID) High Fraction	510	20.	mg/kg	3546/DRO	09/16/11	5
Surrogate recovery(%)						
o-Terphenyl	134.		% Rec.	3546/DRO	09/16/11	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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Chris Hines  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311  
Sample ID : A28-SS-2-091311  
Collected By : TL/JB  
Collection Date : 09/13/11 11:30

ESC Sample # : L535791-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/14/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/14/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/14/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.4		% Rec.	8021/8015	09/14/11	5
a,a,a-Trifluorotoluene(PID)	98.9		% Rec.	8021/8015	09/14/11	5
TPH (GC/FID) High Fraction	320	4.0	mg/kg	3546/DRO	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	85.3		% Rec.	3546/DRO	09/14/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-3-091311

Collected By : TL/JB  
Collection Date : 09/13/11 11:45

ESC Sample # : L535791-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/14/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/14/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/14/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/14/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	8021/8015	09/14/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	09/14/11	5
TPH (GC/FID) High Fraction	340	4.0	mg/kg	3546/DRO	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	86.7		% Rec.	3546/DRO	09/14/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Parachute, CO 81635

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-4-091311

Collected By : TL/JB  
Collection Date : 09/13/11 12:00

ESC Sample # : L535791-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	99.3		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	150	4.0	mg/kg	3546/DRO	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	66.0		% Rec.	3546/DRO	09/14/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-5-091311

Collected By : TL/JB  
Collection Date : 09/13/11 12:15

ESC Sample # : L535791-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	99.5		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	280	4.0	mg/kg	3546/DRO	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	73.5		% Rec.	3546/DRO	09/14/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-6-091311

Collected By : TL/JB  
Collection Date : 09/13/11 12:30

ESC Sample # : L535791-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	220	20.	mg/kg	3546/DRO	09/15/11	5
Surrogate recovery(%)						
o-Terphenyl	82.5		% Rec.	3546/DRO	09/15/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Chris Hines  
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2717 County Road 215, Suite 100  
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September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-7-091311

Collected By : TL/JB  
Collection Date : 09/13/11 12:45

ESC Sample # : L535791-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	670	20.	mg/kg	3546/DRO	09/15/11	5
Surrogate recovery(%)						
o-Terphenyl	149.		% Rec.	3546/DRO	09/15/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Parachute, CO 81635

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-8-091311

Collected By : TL/JB  
Collection Date : 09/13/11 13:00

ESC Sample # : L535791-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	1600	20.	mg/kg	3546/DRO	09/16/11	5
Surrogate recovery(%)						
o-Terphenyl	107.		% Rec.	3546/DRO	09/16/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/16/11 13:40 Printed: 09/16/11 13:41

REPORT OF ANALYSIS

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

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-9-091311

Collected By : TL/JB  
Collection Date : 09/13/11 13:15

ESC Sample # : L535791-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.6		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	99.2		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	1500	20.	mg/kg	3546/DRO	09/16/11	5
Surrogate recovery(%)						
o-Terphenyl	343.		% Rec.	3546/DRO	09/16/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L535791-09 (DRO) - Previous run also had high SURR recovery. Matrix effect.





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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

September 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311  
Sample ID : A28-SS-10-091311  
Collected By : TL/JB  
Collection Date : 09/13/11 13:30

ESC Sample # : L535791-10

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.4		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	91.8		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	09/15/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/15/11	20

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 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311  
Sample ID : A28-SS-11-091311  
Collected By : TL/JB  
Collection Date : 09/13/11 13:45

ESC Sample # : L535791-11

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	2000	80.	mg/kg	3546/DRO	09/15/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	09/15/11	20

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 16, 2011

Date Received : September 14, 2011  
Description : A28 Soil Spoil 091311

Sample ID : A28-SS-12-091311

Collected By : TL/JB  
Collection Date : 09/13/11 14:00

ESC Sample # : L535791-12

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/15/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/15/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	09/15/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/15/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.3		% Rec.	8021/8015	09/15/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	09/15/11	5
TPH (GC/FID) High Fraction	1500	20.	mg/kg	3546/DRO	09/15/11	5
Surrogate recovery(%)						
o-Terphenyl	86.4		% Rec.	3546/DRO	09/15/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L535791-09	WG555352	SAMP	o-Terphenyl	R1860656	J1
L535791-10	WG555118	SAMP	o-Terphenyl	R1858852	J7
L535791-11	WG555118	SAMP	o-Terphenyl	R1858852	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J7	Surrogate recovery 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  
09/16/11 at 13:41:13

TSR Signing Reports: 358  
R3 - Rush: Two Day

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

Sample: L535791-01 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-02 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-03 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-04 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-05 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-06 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-07 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-08 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-09 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-10 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-11 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40  
Sample: L535791-12 Account: ENCANACO Received: 09/14/11 09:00 Due Date: 09/16/11 00:00 RPT Date: 09/16/11 13:40



**YOUR LAB OF CHOICE**

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Chris Hines  
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Quality Assurance Report  
Level II

L535791

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Tax I.D. 62-0814289

Est. 1970

September 16, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG555104	09/14/11 17:16
o-Terphenyl		% Rec.	71.82	50-150	WG555104	09/14/11 17:16
Benzene	< .0005	mg/kg			WG555049	09/14/11 16:31
Ethylbenzene	< .0005	mg/kg			WG555049	09/14/11 16:31
Toluene	< .005	mg/kg			WG555049	09/14/11 16:31
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG555049	09/14/11 16:31
Total Xylene	< .0015	mg/kg			WG555049	09/14/11 16:31
a,a,a-Trifluorotoluene(FID)		% Rec.	95.73	59-128	WG555049	09/14/11 16:31
a,a,a-Trifluorotoluene(PID)		% Rec.	98.66	54-144	WG555049	09/14/11 16:31
TPH (GC/FID) High Fraction	< 4	ppm			WG555118	09/15/11 08:26
o-Terphenyl		% Rec.	92.12	50-150	WG555118	09/15/11 08:26
TPH (GC/FID) High Fraction	< 4	ppm			WG555007	09/15/11 22:56
o-Terphenyl		% Rec.	85.09	50-150	WG555007	09/15/11 22:56
Benzene	< .0005	mg/kg			WG555223	09/15/11 15:44
Ethylbenzene	< .0005	mg/kg			WG555223	09/15/11 15:44
Toluene	< .005	mg/kg			WG555223	09/15/11 15:44
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG555223	09/15/11 15:44
Total Xylene	< .0015	mg/kg			WG555223	09/15/11 15:44
a,a,a-Trifluorotoluene(FID)		% Rec.	90.56	59-128	WG555223	09/15/11 15:44
a,a,a-Trifluorotoluene(PID)		% Rec.	95.13	54-144	WG555223	09/15/11 15:44
TPH (GC/FID) High Fraction	< 4	ppm			WG555352	09/16/11 09:52
o-Terphenyl		% Rec.	85.57	50-150	WG555352	09/16/11 09:52

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	46.8	78.0	50-150	WG555104
o-Terphenyl				75.90	50-150	WG555104
Benzene	mg/kg	.05	0.0470	94.0	76-113	WG555049
Ethylbenzene	mg/kg	.05	0.0492	98.4	78-115	WG555049
Toluene	mg/kg	.05	0.0516	103.	76-114	WG555049
Total Xylene	mg/kg	.15	0.144	96.1	81-118	WG555049
a,a,a-Trifluorotoluene(PID)				98.00	54-144	WG555049
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.59	120.	67-135	WG555049
a,a,a-Trifluorotoluene(FID)				100.7	59-128	WG555049
TPH (GC/FID) High Fraction	ppm	60	43.4	72.3	50-150	WG555118
o-Terphenyl				87.62	50-150	WG555118
TPH (GC/FID) High Fraction	ppm	60	49.2	82.0	50-150	WG555007
o-Terphenyl				85.11	50-150	WG555007
Benzene	mg/kg	.05	0.0455	91.0	76-113	WG555223
Ethylbenzene	mg/kg	.05	0.0470	93.9	78-115	WG555223

\* 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**

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Quality Assurance Report  
Level II

L535791

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Tax I.D. 62-0814289

Est. 1970

September 16, 2011

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Toluene	mg/kg	.05		0.0505	101.	76-114	WG555223
Total Xylene	mg/kg	.15		0.137	91.1	81-118	WG555223
a,a,a-Trifluorotoluene(PID)					93.07	54-144	WG555223
TPH (GC/FID) Low Fraction	mg/kg	5.5		6.93	126.	67-135	WG555223
a,a,a-Trifluorotoluene(FID)					95.97	59-128	WG555223
TPH (GC/FID) High Fraction	ppm	60		50.7	84.5	50-150	WG555352
o-Terphenyl					88.19	50-150	WG555352

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	46.3	46.8	77.0	50-150	0.985	25	WG555104
o-Terphenyl				76.80	50-150			WG555104
Benzene	mg/kg	0.0474	0.0470	95.0	76-113	0.840	20	WG555049
Ethylbenzene	mg/kg	0.0491	0.0492	98.0	78-115	0.180	20	WG555049
Toluene	mg/kg	0.0519	0.0516	104.	76-114	0.550	20	WG555049
Total Xylene	mg/kg	0.142	0.144	95.0	81-118	1.56	20	WG555049
a,a,a-Trifluorotoluene(PID)				98.70	54-144			WG555049
TPH (GC/FID) Low Fraction	mg/kg	6.42	6.59	117.	67-135	2.64	20	WG555049
a,a,a-Trifluorotoluene(FID)				100.4	59-128			WG555049
TPH (GC/FID) High Fraction	ppm	44.3	43.4	74.0	50-150	2.08	20	WG555118
o-Terphenyl				86.11	50-150			WG555118
TPH (GC/FID) High Fraction	ppm	52.1	49.2	87.0	50-150	5.61	25	WG555007
o-Terphenyl				90.69	50-150			WG555007
Benzene	mg/kg	0.0447	0.0455	89.0	76-113	1.70	20	WG555223
Ethylbenzene	mg/kg	0.0461	0.0470	92.0	78-115	1.78	20	WG555223
Toluene	mg/kg	0.0499	0.0505	100.	76-114	1.28	20	WG555223
Total Xylene	mg/kg	0.134	0.137	89.0	81-118	2.09	20	WG555223
a,a,a-Trifluorotoluene(PID)				93.25	54-144			WG555223
TPH (GC/FID) Low Fraction	mg/kg	6.84	6.93	124.	67-135	1.28	20	WG555223
a,a,a-Trifluorotoluene(FID)				96.14	59-128			WG555223
TPH (GC/FID) High Fraction	ppm	57.8	50.7	96.0	50-150	13.1	25	WG555352
o-Terphenyl				100.8	50-150			WG555352

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.224	0	.05	89.5	32-137	L535793-06	WG555049
Ethylbenzene	mg/kg	0.219	0	.05	87.6	10-150	L535793-06	WG555049
Toluene	mg/kg	0.242	0	.05	96.9	20-142	L535793-06	WG555049
Total Xylene	mg/kg	0.639	0	.15	85.3	16-141	L535793-06	WG555049
a,a,a-Trifluorotoluene(PID)					97.25	54-144		WG555049
TPH (GC/FID) Low Fraction	mg/kg	20.9	0	5.5	76.1	55-109	L535793-06	WG555049
a,a,a-Trifluorotoluene(FID)					97.54	59-128		WG555049

TPH (GC/FID) High Fraction	ppm	48.9	0	60	81.5	50-150	L535282-01	WG555104
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\* 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	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
o-Terphenyl					69.99	50-150		
TPH (GC/FID) High Fraction	ppm	165.	49.0	60	194.*	50-150	L535422-04	WG555007
o-Terphenyl					112.3	50-150		WG555007
Benzene	mg/kg	0.181	0	.05	72.4	32-137	L535915-01	WG555223
Ethylbenzene	mg/kg	0.171	0	.05	68.4	10-150	L535915-01	WG555223
Toluene	mg/kg	0.191	0	.05	76.3	20-142	L535915-01	WG555223
Total Xylene	mg/kg	0.509	0	.15	67.9	16-141	L535915-01	WG555223
a,a,a-Trifluorotoluene(PID)					93.23	54-144		WG555223
TPH (GC/FID) Low Fraction	mg/kg	24.2	0	5.5	88.1	55-109	L535915-01	WG555223
a,a,a-Trifluorotoluene(FID)					93.66	59-128		WG555223

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.223	0.224	89.2	32-137	0.250	39	L535793-06	WG555049
Ethylbenzene	mg/kg	0.205	0.219	82.1	10-150	6.49	44	L535793-06	WG555049
Toluene	mg/kg	0.231	0.242	92.6	20-142	4.60	42	L535793-06	WG555049
Total Xylene	mg/kg	0.593	0.639	79.0	16-141	7.61	46	L535793-06	WG555049
a,a,a-Trifluorotoluene(PID)				97.56	54-144				WG555049
TPH (GC/FID) Low Fraction	mg/kg	21.2	20.9	77.0	55-109	1.16	20	L535793-06	WG555049
a,a,a-Trifluorotoluene(FID)				98.00	59-128				WG555049
TPH (GC/FID) High Fraction	ppm	47.3	48.9	78.9	50-150	3.27	25	L535282-01	WG555104
o-Terphenyl				69.00	50-150				WG555104
TPH (GC/FID) High Fraction	ppm	114.	165.	108.	50-150	37.0*	25	L535422-04	WG555007
o-Terphenyl				97.49	50-150				WG555007
Benzene	mg/kg	0.198	0.181	79.3	32-137	9.07	39	L535915-01	WG555223
Ethylbenzene	mg/kg	0.194	0.171	77.7	10-150	12.8	44	L535915-01	WG555223
Toluene	mg/kg	0.213	0.191	85.0	20-142	10.8	42	L535915-01	WG555223
Total Xylene	mg/kg	0.566	0.509	75.4	16-141	10.5	46	L535915-01	WG555223
a,a,a-Trifluorotoluene(PID)				94.54	54-144				WG555223
TPH (GC/FID) Low Fraction	mg/kg	25.4	24.2	92.5	55-109	4.86	20	L535915-01	WG555223
a,a,a-Trifluorotoluene(FID)				93.77	59-128				WG555223

Batch number /Run number / Sample number cross reference

WG555104: R1858212: L535791-02 03 04 05 06 07  
WG555049: R1858252: L535791-01 02 03 04 05 06 07 08 09 11 12  
WG555118: R1858852: L535791-10 11 12  
WG555007: R1860052: L535791-08  
WG555223: R1860612: L535791-10  
WG555352: R1860656: L535791-01 09

\* \* 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.'



**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

L535791

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

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September 16, 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 October 28, 2011

Report Number: L542824

Samples Received: 10/21/11

Client Project: A28

Description: A28 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 / Matt Kasten  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-1-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:15

ESC Sample # : L542824-01

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.0		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	96.5		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	280	4.0	mg/kg	3546/DRO	10/26/11	1
Surrogate recovery(%)						
o-Terphenyl	102.		% Rec.	3546/DRO	10/26/11	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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REPORT OF ANALYSIS

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

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-7-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:30

ESC Sample # : L542824-02

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	91.4		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	95.1		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	480	20.	mg/kg	3546/DRO	10/26/11	5
Surrogate recovery(%)						
o-Terphenyl	90.5		% Rec.	3546/DRO	10/26/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-8-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:45

ESC Sample # : L542824-03

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	90.9		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	95.3		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	1000	20.	mg/kg	3546/DRO	10/26/11	5
Surrogate recovery(%)						
o-Terphenyl	91.1		% Rec.	3546/DRO	10/26/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-9-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:50

ESC Sample # : L542824-04

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	3.9	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	99.4		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	3600	80.	mg/kg	3546/DRO	10/26/11	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	10/26/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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2717 County Road 215, Suite 100  
Parachute, CO 81635

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-10-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:55

ESC Sample # : L542824-05

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.6		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	680	20.	mg/kg	3546/DRO	10/25/11	5
Surrogate recovery(%)						
o-Terphenyl	94.0		% Rec.	3546/DRO	10/25/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-11-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 10:55

ESC Sample # : L542824-06

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	0.60	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	560	20.	mg/kg	3546/DRO	10/26/11	5
Surrogate recovery(%)						
o-Terphenyl	78.9		% Rec.	3546/DRO	10/26/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

October 28, 2011

Date Received : October 21, 2011  
Description : A28 Soil Spoil  
Sample ID : A28-SS-12-101911 8-12IN  
Collected By : RGW  
Collection Date : 10/19/11 11:00

ESC Sample # : L542824-07

Site ID :

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	10/24/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	10/24/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	10/24/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	10/24/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8021/8015	10/24/11	5
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	10/24/11	5
TPH (GC/FID) High Fraction	910	40.	mg/kg	3546/DRO	10/26/11	10
Surrogate recovery(%)						
o-Terphenyl	82.2		% Rec.	3546/DRO	10/26/11	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: 10/28/11 16:33 Printed: 10/28/11 16:33

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L542824-04	WG562135	SAMP	o-Terphenyl	R1910532	J7
L542824-06	WG562343	SAMP	TPH (GC/FID) High Fraction	R1908873	V

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed  
10/28/11 at 16:33:54

TSR Signing Reports: 358  
R5 - Desired TAT

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

Sample: L542824-01 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-02 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-03 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-04 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-05 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-06 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33

Sample: L542824-07 Account: ENCANACO Received: 10/21/11 09:00 Due Date: 10/28/11 00:00 RPT Date: 10/28/11 16:33



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG561949	10/24/11 02:28
Ethylbenzene	< .0005	mg/kg			WG561949	10/24/11 02:28
Toluene	< .005	mg/kg			WG561949	10/24/11 02:28
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG561949	10/24/11 02:28
Total Xylene	< .0015	mg/kg			WG561949	10/24/11 02:28
a,a,a-Trifluorotoluene(FID)		% Rec.	94.55	59-128	WG561949	10/24/11 02:28
a,a,a-Trifluorotoluene(PID)		% Rec.	98.20	54-144	WG561949	10/24/11 02:28
Benzene	< .0005	mg/kg			WG562035	10/23/11 23:33
Ethylbenzene	< .0005	mg/kg			WG562035	10/23/11 23:33
Toluene	< .005	mg/kg			WG562035	10/23/11 23:33
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG562035	10/23/11 23:33
Total Xylene	< .0015	mg/kg			WG562035	10/23/11 23:33
a,a,a-Trifluorotoluene(FID)		% Rec.	100.4	59-128	WG562035	10/23/11 23:33
a,a,a-Trifluorotoluene(PID)		% Rec.	106.8	54-144	WG562035	10/23/11 23:33
TPH (GC/FID) High Fraction	< 4	ppm			WG562282	10/25/11 14:36
o-Terphenyl		% Rec.	83.13	50-150	WG562282	10/25/11 14:36
TPH (GC/FID) High Fraction	< 4	ppm			WG562343	10/26/11 02:50
o-Terphenyl		% Rec.	91.57	50-150	WG562343	10/26/11 02:50
TPH (GC/FID) High Fraction	< 4	ppm			WG562135	10/26/11 16:29
o-Terphenyl		% Rec.	68.64	50-150	WG562135	10/26/11 16:29
Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.34	133.	67-135	WG561949
a,a,a-Trifluorotoluene(FID)				97.75	59-128	WG561949
Benzene	mg/kg	.05	0.0433	86.7	76-113	WG561949
Ethylbenzene	mg/kg	.05	0.0552	110.	78-115	WG561949
Toluene	mg/kg	.05	0.0517	103.	76-114	WG561949
Total Xylene	mg/kg	.15	0.164	109.	81-118	WG561949
a,a,a-Trifluorotoluene(PID)				89.07	54-144	WG561949
Benzene	mg/kg	.05	0.0460	92.0	76-113	WG562035
Ethylbenzene	mg/kg	.05	0.0542	108.	78-115	WG562035
Toluene	mg/kg	.05	0.0501	100.	76-114	WG562035
Total Xylene	mg/kg	.15	0.162	108.	81-118	WG562035
a,a,a-Trifluorotoluene(PID)				105.1	54-144	WG562035
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.75	105.	67-135	WG562035
a,a,a-Trifluorotoluene(FID)				102.1	59-128	WG562035
TPH (GC/FID) High Fraction	ppm	60	49.6	82.7	50-150	WG562282
o-Terphenyl				91.14	50-150	WG562282
TPH (GC/FID) High Fraction	ppm	60	55.7	92.9	50-150	WG562343
o-Terphenyl				99.62	50-150	WG562343
TPH (GC/FID) High Fraction	ppm	60	44.6	74.3	50-150	WG562135

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

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



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October 28, 2011

Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
o-Terphenyl					69.32		50-150	
Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.70	7.34	122.	67-135	9.14	20	WG561949
a,a,a-Trifluorotoluene(FID)				102.2	59-128			WG561949
Benzene	mg/kg	0.0415	0.0433	83.0	76-113	4.25	20	WG561949
Ethylbenzene	mg/kg	0.0529	0.0552	106.	78-115	4.33	20	WG561949
Toluene	mg/kg	0.0492	0.0517	98.0	76-114	5.02	20	WG561949
Total Xylene	mg/kg	0.157	0.164	105.	81-118	4.43	20	WG561949
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG561949
Benzene	mg/kg	0.0465	0.0460	93.0	76-113	1.13	20	WG562035
Ethylbenzene	mg/kg	0.0539	0.0542	108.	78-115	0.540	20	WG562035
Toluene	mg/kg	0.0497	0.0501	99.0	76-114	0.710	20	WG562035
Total Xylene	mg/kg	0.161	0.162	107.	81-118	1.00	20	WG562035
a,a,a-Trifluorotoluene(PID)				105.1	54-144			WG562035
TPH (GC/FID) Low Fraction	mg/kg	5.53	5.75	101.	67-135	3.80	20	WG562035
a,a,a-Trifluorotoluene(FID)				101.5	59-128			WG562035
TPH (GC/FID) High Fraction	ppm	49.4	49.6	82.0	50-150	0.383	25	WG562282
o-Terphenyl				89.76	50-150			WG562282
TPH (GC/FID) High Fraction	ppm	55.7	55.7	93.0	50-150	0.0883	25	WG562343
o-Terphenyl				97.11	50-150			WG562343
TPH (GC/FID) High Fraction	ppm	50.2	44.6	84.0	50-150	11.9	25	WG562135
o-Terphenyl				80.23	50-150			WG562135
Analyte	Matrix Spike				Limit	Ref Samp	Batch	
	Units	MS Res	Ref Res	TV % Rec				
Benzene	mg/kg	0.168	0	.05 67.3	32-137	L542666-07	WG561949	
Ethylbenzene	mg/kg	0.208	0	.05 83.3	10-150	L542666-07	WG561949	
Toluene	mg/kg	0.197	0	.05 78.9	20-142	L542666-07	WG561949	
Total Xylene	mg/kg	0.614	0	.15 81.9	16-141	L542666-07	WG561949	
a,a,a-Trifluorotoluene(PID)				100.3	54-144		WG561949	
TPH (GC/FID) Low Fraction	mg/kg	21.9	0	79.7	55-109	L542666-07	WG561949	
a,a,a-Trifluorotoluene(FID)				98.78	59-128		WG561949	
Benzene	mg/kg	0.213	0	.05 85.1	32-137	L542824-06	WG562035	
Ethylbenzene	mg/kg	0.239	0	.05 95.4	10-150	L542824-06	WG562035	
Toluene	mg/kg	0.230	0	.05 92.1	20-142	L542824-06	WG562035	
Total Xylene	mg/kg	0.726	0	.15 96.8	16-141	L542824-06	WG562035	
a,a,a-Trifluorotoluene(PID)				103.8	54-144		WG562035	
TPH (GC/FID) Low Fraction	mg/kg	20.5	0.600	72.4	55-109	L542824-06	WG562035	
a,a,a-Trifluorotoluene(FID)				105.4	59-128		WG562035	
TPH (GC/FID) High Fraction	ppm	33.5	0	60 55.8	50-150	L543006-02	WG562282	
o-Terphenyl				56.35	50-150		WG562282	

\* 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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Level II

L542824

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) High Fraction	ppm	753.	560.	60	322.*	50-150	L542824-06	WG562343
o-Terphenyl					81.40	50-150		WG562343

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.186	0.168	74.4	32-137	10.1	39	L542666-07	WG561949
Ethylbenzene	mg/kg	0.230	0.208	92.2	10-150	10.2	44	L542666-07	WG561949
Toluene	mg/kg	0.218	0.197	87.1	20-142	9.89	42	L542666-07	WG561949
Total Xylene	mg/kg	0.681	0.614	90.8	16-141	10.3	46	L542666-07	WG561949
a,a,a-Trifluorotoluene(PID)				100.6	54-144				WG561949
TPH (GC/FID) Low Fraction	mg/kg	26.4	21.9	96.0	55-109	18.5	20	L542666-07	WG561949
a,a,a-Trifluorotoluene(FID)				101.7	59-128				WG561949
Benzene	mg/kg	0.214	0.213	85.6	32-137	0.590	39	L542824-06	WG562035
Ethylbenzene	mg/kg	0.224	0.239	89.6	10-150	6.26	44	L542824-06	WG562035
Toluene	mg/kg	0.220	0.230	88.1	20-142	4.41	42	L542824-06	WG562035
Total Xylene	mg/kg	0.656	0.726	87.5	16-141	10.0	46	L542824-06	WG562035
a,a,a-Trifluorotoluene(PID)				103.2	54-144				WG562035
TPH (GC/FID) Low Fraction	mg/kg	20.6	20.5	72.8	55-109	0.410	20	L542824-06	WG562035
a,a,a-Trifluorotoluene(FID)				99.24	59-128				WG562035
TPH (GC/FID) High Fraction	ppm	38.9	33.5	64.8	50-150	14.9	25	L543006-02	WG562282
o-Terphenyl				68.08	50-150				WG562282
TPH (GC/FID) High Fraction	ppm	633.	753.	24.2*	50-150	17.4	25	L542824-06	WG562343
o-Terphenyl				98.62	50-150				WG562343

Batch number /Run number / Sample number cross reference

WG561949: R1905733: L542824-01 02 03 04 05  
WG562035: R1905992: L542824-06 07  
WG562282: R1908256: L542824-05  
WG562343: R1908873: L542824-06 07  
WG562135: R1910532: L542824-01 02 03 04

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

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

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

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

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

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



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2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Monday May 07, 2012

Report Number: L573064

Samples Received: 05/03/12

Client Project: A28 REMEDIATION

Description: A28 Pit Spoil Landform

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

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

May 07, 2012

Date Received : May 03, 2012  
Description : A28 Pit Spoil Landform  
Sample ID : A28-PS-LF-N8-050212 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/02/12 10:00

ESC Sample # : L573064-01

Site ID : A28

Project # : A28 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)	90.4		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	1500	80.	mg/kg	3546/DRO	05/07/12	20
Surrogate recovery(%) o-Terphenyl	98.4		% Rec.	3546/DRO	05/07/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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Parachute, CO 81635

May 07, 2012

Date Received : May 03, 2012  
Description : A28 Pit Spoil Landform  
Sample ID : A28-PS-LF-N9-050212 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/02/12 10:10

ESC Sample # : L573064-02

Site ID : A28

Project # : A28 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)	90.6		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	730	20.	mg/kg	3546/DRO	05/07/12	5
Surrogate recovery(%) o-Terphenyl	115.		% Rec.	3546/DRO	05/07/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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2717 County Road 215, Suite 100  
Parachute, CO 81635

May 07, 2012

Date Received : May 03, 2012  
Description : A28 Pit Spoil Landform  
Sample ID : A28-PS-LF-N10-050212 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/02/12 10:20

ESC Sample # : L573064-03

Site ID : A28

Project # : A28 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)	91.4		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	570	20.	mg/kg	3546/DRO	05/07/12	5
Surrogate recovery(%) o-Terphenyl	84.7		% Rec.	3546/DRO	05/07/12	5

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

May 07, 2012

Date Received : May 03, 2012  
Description : A28 Pit Spoil Landform  
Sample ID : A28-PS-LF-N11-050212 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/02/12 10:30

ESC Sample # : L573064-04

Site ID : A28

Project # : A28 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)	91.4		% Rec.	602/8015	05/03/12	5
TPH (GC/FID) High Fraction	530	20.	mg/kg	3546/DRO	05/07/12	5
Surrogate recovery(%) o-Terphenyl	104.		% Rec.	3546/DRO	05/07/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

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2717 County Road 215, Suite 100  
Parachute, CO 81635

May 07, 2012

Date Received : May 03, 2012  
Description : A28 Pit Spoil Landform  
Sample ID : A28-PS-LF-N12-050212 3-12IN  
Collected By : Jeff Braden  
Collection Date : 05/02/12 10:40

ESC Sample # : L573064-05

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/04/12	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.6		% Rec.	602/8015	05/04/12	5
TPH (GC/FID) High Fraction	2200	80.	mg/kg	3546/DRO	05/07/12	20
Surrogate recovery(%) o-Terphenyl	128.		% Rec.	3546/DRO	05/07/12	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
L573064-01	WG590983	SAMP	o-Terphenyl	R2158894	J7
L573064-04	WG590983	SAMP	TPH (GC/FID) High Fraction	R2158894	J6
L573064-05	WG590983	SAMP	o-Terphenyl	R2158894	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 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.



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG590954	05/03/12 20:37
a,a,a-Trifluorotoluene(FID)		% Rec.	90.68	59-128	WG590954	05/03/12 20:37
TPH (GC/FID) High Fraction	< 4	ppm			WG590983	05/07/12 09:55
o-Terphenyl		% Rec.	82.69	50-150	WG590983	05/07/12 09:55

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.25	95.5	67-135	WG590954
a,a,a-Trifluorotoluene(FID)				94.37	59-128	WG590954
TPH (GC/FID) High Fraction	ppm	60	49.5	82.4	50-150	WG590983
o-Terphenyl				85.39	50-150	WG590983

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.29	5.25	96.0	67-135	0.600	20	WG590954
a,a,a-Trifluorotoluene(FID)				93.52	59-128			WG590954
TPH (GC/FID) High Fraction	ppm	50.8	49.5	85.0	50-150	2.69	25	WG590983
o-Terphenyl				89.29	50-150			WG590983

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	15.2	0	5.5	55.4	55-109	L573108-01	WG590954
a,a,a-Trifluorotoluene(FID)					90.18	59-128		WG590954
TPH (GC/FID) High Fraction	ppm	657.	530.	60	42.4*	50-150	L573064-04	WG590983
o-Terphenyl					90.65	50-150		WG590983

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	14.3	15.2	51.9*	55-109	6.36	20	L573108-01	WG590954
a,a,a-Trifluorotoluene(FID)				90.08	59-128				WG590954
TPH (GC/FID) High Fraction	ppm	564.	657.	11.2*	50-150	15.3	25	L573064-04	WG590983
o-Terphenyl				85.69	50-150				WG590983

Batch number /Run number / Sample number cross reference

WG590954: R2156253: L573064-01 02 03 04 05  
WG590983: R2158894: L573064-01 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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Chris Hines / Matt Kasten  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Wednesday June 20, 2012

Report Number: L580729

Samples Received: 06/16/12

Client Project: A28 REMEDIATION

Description: A28 Pit Spoil 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:

T. Alan Harvill , 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

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

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

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



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# REPORT OF ANALYSIS

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

June 20, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-E-N8-061512  
Collected By : SRM  
Collection Date : 06/15/12 08:40

ESC Sample # : L580729-01

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.0		% Rec.	8021/8015	06/18/12	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/18/12	5
TPH (GC/FID) High Fraction	400	4.0	mg/kg	3546/DRO	06/18/12	1
Surrogate recovery(%)						
o-Terphenyl	86.4		% Rec.	3546/DRO	06/18/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

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

June 20, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-NW-N9-061512  
Collected By : SRM  
Collection Date : 06/15/12 08:50

ESC Sample # : L580729-02

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.1		% Rec.	8021/8015	06/18/12	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/18/12	5
TPH (GC/FID) High Fraction	350	4.0	mg/kg	3546/DRO	06/18/12	1
Surrogate recovery(%)						
o-Terphenyl	90.6		% Rec.	3546/DRO	06/18/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

June 20, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-S-N10-061512  
Collected By : SRM  
Collection Date : 06/15/12 09:00

ESC Sample # : L580729-03

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.4		% Rec.	8021/8015	06/18/12	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/18/12	5
TPH (GC/FID) High Fraction	460	20.	mg/kg	3546/DRO	06/18/12	5
Surrogate recovery(%)						
o-Terphenyl	70.2		% Rec.	3546/DRO	06/18/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/20/12 10:43 Printed: 06/20/12 10:44

REPORT OF ANALYSIS

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

June 20, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-SW-N11-061512  
Collected By : SRM  
Collection Date : 06/15/12 09:10

ESC Sample # : L580729-04

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.4		% Rec.	8021/8015	06/18/12	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/18/12	5
TPH (GC/FID) High Fraction	260	4.0	mg/kg	3546/DRO	06/18/12	1
Surrogate recovery(%)						
o-Terphenyl	65.1		% Rec.	3546/DRO	06/18/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

June 20, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-W-N12-061512  
Collected By : SRM  
Collection Date : 06/15/12 09:29

ESC Sample # : L580729-05

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	93.5		% Rec.	8021/8015	06/18/12	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/18/12	5
TPH (GC/FID) High Fraction	670	20.	mg/kg	3546/DRO	06/18/12	5
Surrogate recovery(%)						
o-Terphenyl	77.6		% Rec.	3546/DRO	06/18/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/20/12 10:43 Printed: 06/20/12 10:44

Summary of Remarks For Samples Printed  
06/20/12 at 10:44:15

TSR Signing Reports: 358  
R4 - Rush: Three Day

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

Sample: L580729-01 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/21/12 00:00 RPT Date: 06/20/12 10:43

Sample: L580729-02 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/21/12 00:00 RPT Date: 06/20/12 10:43

Sample: L580729-03 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/21/12 00:00 RPT Date: 06/20/12 10:43

Sample: L580729-04 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/21/12 00:00 RPT Date: 06/20/12 10:43

Sample: L580729-05 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/21/12 00:00 RPT Date: 06/20/12 10:43



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

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Quality Assurance Report  
Level II

L580729

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June 20, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG598360	06/18/12 00:02
Ethylbenzene	< .0005	mg/kg			WG598360	06/18/12 00:02
Toluene	< .005	mg/kg			WG598360	06/18/12 00:02
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG598360	06/18/12 00:02
Total Xylene	< .0015	mg/kg			WG598360	06/18/12 00:02
a,a,a-Trifluorotoluene(FID)		% Rec.	94.20	59-128	WG598360	06/18/12 00:02
a,a,a-Trifluorotoluene(PID)		% Rec.	102.3	54-144	WG598360	06/18/12 00:02
TPH (GC/FID) High Fraction	< 4	ppm			WG598285	06/18/12 10:19
o-Terphenyl		% Rec.	74.24	50-150	WG598285	06/18/12 10:19

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0440	87.9	76-113	WG598360
Ethylbenzene	mg/kg	.05	0.0450	90.0	78-115	WG598360
Toluene	mg/kg	.05	0.0441	88.3	76-114	WG598360
Total Xylene	mg/kg	.15	0.131	87.3	81-118	WG598360
a,a,a-Trifluorotoluene(FID)				96.34	59-128	WG598360
a,a,a-Trifluorotoluene(PID)				102.8	54-144	WG598360
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.43	98.8	67-135	WG598360
a,a,a-Trifluorotoluene(FID)				101.1	59-128	WG598360
a,a,a-Trifluorotoluene(PID)				108.4	54-144	WG598360
TPH (GC/FID) High Fraction	ppm	60	47.0	78.3	50-150	WG598285
o-Terphenyl				72.90	50-150	WG598285

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0420	0.0440	84.0	76-113	4.59	20	WG598360
Ethylbenzene	mg/kg	0.0424	0.0450	85.0	78-115	5.83	20	WG598360
Toluene	mg/kg	0.0415	0.0441	83.0	76-114	6.15	20	WG598360
Total Xylene	mg/kg	0.123	0.131	82.0	81-118	6.08	20	WG598360
a,a,a-Trifluorotoluene(FID)				94.80	59-128			WG598360
a,a,a-Trifluorotoluene(PID)				101.1	54-144			WG598360
TPH (GC/FID) Low Fraction	mg/kg	5.39	5.43	98.0	67-135	0.740	20	WG598360
a,a,a-Trifluorotoluene(FID)				101.3	59-128			WG598360
a,a,a-Trifluorotoluene(PID)				108.7	54-144			WG598360
TPH (GC/FID) High Fraction	ppm	49.4	47.0	82.0	50-150	5.17	23	WG598285
o-Terphenyl				78.91	50-150			WG598285

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.197	0	.05	78.6	32-137	L580729-01	WG598360
Ethylbenzene	mg/kg	0.175	0	.05	69.9	10-150	L580729-01	WG598360
Toluene	mg/kg	0.189	0	.05	75.8	20-142	L580729-01	WG598360
Total Xylene	mg/kg	0.513	0	.15	68.4	16-141	L580729-01	WG598360
a,a,a-Trifluorotoluene(FID)					94.33	59-128		WG598360
a,a,a-Trifluorotoluene(PID)					101.6	54-144		WG598360
TPH (GC/FID) Low Fraction	mg/kg	15.5	0	5.5	56.4	55-109	L580729-01	WG598360
a,a,a-Trifluorotoluene(FID)					99.08	59-128		WG598360
a,a,a-Trifluorotoluene(PID)					104.2	54-144		WG598360

\* 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 / Matt Kasten  
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report  
Level II

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June 20, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.192	0.197	76.7	32-137	2.50	39	L580729-01	WG598360
Ethylbenzene	mg/kg	0.162	0.175	64.7	10-150	7.79	44	L580729-01	WG598360
Toluene	mg/kg	0.179	0.189	71.5	20-142	5.81	42	L580729-01	WG598360
Total Xylene	mg/kg	0.471	0.513	62.8	16-141	8.46	46	L580729-01	WG598360
a,a,a-Trifluorotoluene(FID)				93.24	59-128				WG598360
a,a,a-Trifluorotoluene(PID)				100.5	54-144				WG598360
TPH (GC/FID) Low Fraction	mg/kg	16.0	15.5	58.1	55-109	2.87	20	L580729-01	WG598360
a,a,a-Trifluorotoluene(FID)				98.13	59-128				WG598360
a,a,a-Trifluorotoluene(PID)				104.0	54-144				WG598360

Batch number /Run number / Sample number cross reference

WG598360: R2214595: L580729-01 02 03 04 05  
WG598285: R2215633: L580729-01 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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June 20, 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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Chris Hines / Matt Kasten  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Tuesday June 26, 2012

Report Number: L581351

Samples Received: 06/16/12

Client Project: A28 REMEDIATION

Description: A28 Pit Spoil 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

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

June 26, 2012

Date Received : June 16, 2012  
Description : A28 Pit Spoil Landfarm  
Sample ID : A28-PS-LF-W-N12-061512  
Collected By : SRM  
Collection Date : 06/15/12 09:29

ESC Sample # : L581351-01

Site ID : A28

Project # : A28 REMEDIATION

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) High Fraction	790	80.	mg/kg	3546/DRO	06/25/12	20
Surrogate recovery(%) o-Terphenyl	1360		% Rec.	3546/DRO	06/25/12	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: 06/26/12 12:41 Printed: 06/26/12 12:41

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L581351-01	WG599218	SAMP	o-Terphenyl	R2225254	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  
06/26/12 at 12:41:44

TSR Signing Reports: 358  
R5 - Desired TAT

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

Sample: L581351-01 Account: ENCANACO Received: 06/16/12 09:00 Due Date: 06/28/12 00:00 RPT Date: 06/26/12 12:41  
Relogged from L580729-05



YOUR LAB OF CHOICE

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

Parachute, CO 81635

Quality Assurance Report  
Level II

L581351

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

June 26, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG599218	06/22/12 18:02
o-Terphenyl		% Rec.	73.24	50-150	WG599218	06/22/12 18:02

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	47.0	78.4	50-150	WG599218
o-Terphenyl				72.56	50-150	WG599218

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	47.0	47.0	78.0	50-150	0.0548	23	WG599218
o-Terphenyl				71.95	50-150			WG599218

Batch number /Run number / Sample number cross reference

WG599218: R2225254: L581351-01

\* \* 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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June 26, 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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Chris Hines / Matt Kasten  
EnCana Oil & Gas Inc. - CO  
2717 County Road 215, Suite 100  
Parachute, CO 81635

## Report Summary

Wednesday July 11, 2012

Report Number: L583817

Samples Received: 07/07/12

Client Project: A28 PIT SPOIL

Description: A28 Pit Spoil Trearment Area

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

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

July 11, 2012

Date Received : July 07, 2012  
Description : A28 Pit Spoil Treatment Area  
Sample ID : A28-PS-C1-070512  
Collected By : Shad Johnson  
Collection Date : 07/05/12 16:00

ESC Sample # : L583817-01

Site ID : A28

Project # : A28 PIT SPOIL

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/09/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/09/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/09/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.4		% Rec.	8021/8015	07/09/12	5
a,a,a-Trifluorotoluene(PID)	94.8		% Rec.	8021/8015	07/09/12	5
TPH (GC/FID) High Fraction	120	4.0	mg/kg	3546/DRO	07/11/12	1
Surrogate recovery(%)						
o-Terphenyl	65.4		% Rec.	3546/DRO	07/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 07/11/12 12:52 Printed: 07/11/12 12:52

REPORT OF ANALYSIS

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

July 11, 2012

Date Received : July 07, 2012  
Description : A28 Pit Spoil Treatment Area  
Sample ID : A28-PS-C2-070512  
Collected By : Shad Johnson  
Collection Date : 07/05/12 16:10

ESC Sample # : L583817-02

Site ID : A28

Project # : A28 PIT SPOIL

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/09/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/09/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/09/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.5		% Rec.	8021/8015	07/09/12	5
a,a,a-Trifluorotoluene(PID)	94.6		% Rec.	8021/8015	07/09/12	5
TPH (GC/FID) High Fraction	110	4.0	mg/kg	3546/DRO	07/11/12	1
Surrogate recovery(%)						
o-Terphenyl	71.4		% Rec.	3546/DRO	07/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/11/12 12:52 Printed: 07/11/12 12:52

REPORT OF ANALYSIS

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

July 11, 2012

Date Received : July 07, 2012  
Description : A28 Pit Spoil Treatment Area  
Sample ID : A28-PS-C3-070512  
Collected By : Shad Johnson  
Collection Date : 07/05/12 16:20

ESC Sample # : L583817-03

Site ID : A28

Project # : A28 PIT SPOIL

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/09/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/09/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/09/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/09/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	89.1		% Rec.	8021/8015	07/09/12	5
a,a,a-Trifluorotoluene(PID)	94.4		% Rec.	8021/8015	07/09/12	5
TPH (GC/FID) High Fraction	200	4.0	mg/kg	3546/DRO	07/11/12	1
Surrogate recovery(%)						
o-Terphenyl	77.1		% Rec.	3546/DRO	07/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 07/11/12 12:52 Printed: 07/11/12 12:52



Summary of Remarks For Samples Printed  
07/11/12 at 12:52:37

TSR Signing Reports: 358  
R4 - Rush: Three Day

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

Sample: L583817-01 Account: ENCANACO Received: 07/07/12 09:00 Due Date: 07/12/12 00:00 RPT Date: 07/11/12 12:52

Sample: L583817-02 Account: ENCANACO Received: 07/07/12 09:00 Due Date: 07/12/12 00:00 RPT Date: 07/11/12 12:52

Sample: L583817-03 Account: ENCANACO Received: 07/07/12 09:00 Due Date: 07/12/12 00:00 RPT Date: 07/11/12 12:52



**YOUR LAB OF CHOICE**

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

Parachute, CO 81635

Quality Assurance Report  
Level II

L583817

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Tax I.D. 62-0814289

Est. 1970

July 11, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG601588	07/08/12 22:28
Ethylbenzene	< .0005	mg/kg			WG601588	07/08/12 22:28
Toluene	< .005	mg/kg			WG601588	07/08/12 22:28
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG601588	07/08/12 22:28
Total Xylene	< .0015	mg/kg			WG601588	07/08/12 22:28
a,a,a-Trifluorotoluene(FID)		% Rec.	90.11	59-128	WG601588	07/08/12 22:28
a,a,a-Trifluorotoluene(PID)		% Rec.	95.42	54-144	WG601588	07/08/12 22:28
TPH (GC/FID) High Fraction	< 4	ppm			WG601673	07/11/12 08:40
o-Terphenyl		% Rec.	81.63	50-150	WG601673	07/11/12 08:40

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.16	112.	67-135	WG601588
a,a,a-Trifluorotoluene(FID)				94.89	59-128	WG601588
Benzene	mg/kg	.05	0.0482	96.3	76-113	WG601588
Ethylbenzene	mg/kg	.05	0.0478	95.6	78-115	WG601588
Toluene	mg/kg	.05	0.0474	94.9	76-114	WG601588
Total Xylene	mg/kg	.15	0.140	93.3	81-118	WG601588
a,a,a-Trifluorotoluene(PID)				94.82	54-144	WG601588
TPH (GC/FID) High Fraction	ppm	60	52.4	87.4	50-150	WG601673
o-Terphenyl				91.43	50-150	WG601673

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.90	6.16	107.	67-135	4.29	20	WG601588
a,a,a-Trifluorotoluene(FID)				94.66	59-128			WG601588
Benzene	mg/kg	0.0473	0.0482	94.0	76-113	1.86	20	WG601588
Ethylbenzene	mg/kg	0.0470	0.0478	94.0	78-115	1.62	20	WG601588
Toluene	mg/kg	0.0465	0.0474	93.0	76-114	2.03	20	WG601588
Total Xylene	mg/kg	0.138	0.140	92.0	81-118	1.68	20	WG601588
a,a,a-Trifluorotoluene(PID)				94.97	54-144			WG601588
TPH (GC/FID) High Fraction	ppm	51.1	52.4	85.0	50-150	2.55	25	WG601673
o-Terphenyl				96.33	50-150			WG601673

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.153	0	.05	61.4	32-137	L583777-03	WG601588
Ethylbenzene	mg/kg	0.121	0	.05	48.4	10-150	L583777-03	WG601588
Toluene	mg/kg	0.124	0	.05	49.8	20-142	L583777-03	WG601588
Total Xylene	mg/kg	0.366	0	.15	48.8	16-141	L583777-03	WG601588
a,a,a-Trifluorotoluene(PID)					93.87	54-144		WG601588
TPH (GC/FID) Low Fraction	mg/kg	15.6	0	5.5	56.6	55-109	L583777-03	WG601588
a,a,a-Trifluorotoluene(FID)					91.22	59-128		WG601588

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.155	0.153	61.9	32-137	0.790	39	L583777-03	WG601588
Ethylbenzene	mg/kg	0.114	0.121	45.7	10-150	5.85	44	L583777-03	WG601588
Toluene	mg/kg	0.123	0.124	49.0	20-142	1.53	42	L583777-03	WG601588

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

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



**YOUR LAB OF CHOICE**

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

Parachute, CO 81635

Quality Assurance Report  
Level II

L583817

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Mt. Juliet, TN 37122  
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Est. 1970

July 11, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Total Xylene	mg/kg	0.346	0.366	46.2	16-141	5.65	46	L583777-03	WG601588
a,a,a-Trifluorotoluene(PID)				94.67	54-144				WG601588
TPH (GC/FID) Low Fraction	mg/kg	9.96	15.6	36.2*	55-109	44.0*	20	L583777-03	WG601588
a,a,a-Trifluorotoluene(FID)				88.88	59-128				WG601588

Batch number /Run number / Sample number cross reference

WG601588: R2245154: L583817-01 02 03  
WG601673: R2249073: L583817-01 02 03

\* \* 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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Est. 1970

July 11, 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.

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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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Est. 1970

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

## Report Summary

Monday November 05, 2012

Report Number: L603575


Samples Received: 10/31/12

Client Project:

Description: A28 Site Clearance

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

Entire Report Reviewed By:

  
Jarred Willis , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-SWCS-SW-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 10:40

ESC Sample # : L603575-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/03/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/03/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/03/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/03/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/03/12	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	11/03/12	5
TPH (GC/FID) High Fraction	19.	4.0	mg/kg	3546/DRO	11/02/12	1
Surrogate recovery(%)						
o-Terphenyl	51.9		% Rec.	3546/DRO	11/02/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 11/05/12 17:07 Printed: 11/05/12 17:15



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-SWCS-WWALL-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 10:45

ESC Sample # : L603575-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/02/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/02/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	11/02/12	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	11/02/12	5
TPH (GC/FID) High Fraction	BDL	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	56.3		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L603575-02 (DRO) - extract thick/dark, cannot run lower



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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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-SWCS-N-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 10:50

ESC Sample # : L603575-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/02/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/02/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.8		% Rec.	8021/8015	11/02/12	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	11/02/12	5
TPH (GC/FID) High Fraction	BDL	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	52.7		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L603575-03 (DRO) - extract thick/dark, 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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-SWCS-CENTER-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 10:55

ESC Sample # : L603575-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/02/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/02/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8021/8015	11/02/12	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	11/02/12	5
TPH (GC/FID) High Fraction	31.	4.0	mg/kg	3546/DRO	11/05/12	1
Surrogate recovery(%)						
o-Terphenyl	51.2		% Rec.	3546/DRO	11/05/12	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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-SWCS-NE-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:00

ESC Sample # : L603575-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/02/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/02/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	11/02/12	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	11/02/12	5
TPH (GC/FID) High Fraction	30.	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	40.9		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L603575-05 (DRO) - low surrogate confirmed with MS/D



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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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-NWCS-WWALL-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:05

ESC Sample # : L603575-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/02/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/02/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/03/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/02/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8021/8015	11/02/12	5
a,a,a-Trifluorotoluene(PID)	108.		% Rec.	8021/8015	11/02/12	5
TPH (GC/FID) High Fraction	BDL	20.	mg/kg	3546/DRO	11/05/12	5
Surrogate recovery(%)						
o-Terphenyl	55.1		% Rec.	3546/DRO	11/05/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L603575-06 (DRO) - Dilution due to matrix



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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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-NWCS-N-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:10

ESC Sample # : L603575-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	75.	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	50.0		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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# REPORT OF ANALYSIS

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-NWCS-S-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:15

ESC Sample # : L603575-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	230	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	51.2		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-NWCS-E-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:20

ESC Sample # : L603575-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	140	20.	mg/kg	3546/DRO	11/05/12	5
Surrogate recovery(%)						
o-Terphenyl	72.4		% Rec.	3546/DRO	11/05/12	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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-SW-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:25

ESC Sample # : L603575-10

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	25.	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	53.4		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-NW-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:30

ESC Sample # : L603575-11

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	1.5	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	560	20.	mg/kg	3546/DRO	11/05/12	5
Surrogate recovery(%)						
o-Terphenyl	144.		% Rec.	3546/DRO	11/05/12	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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-CENTER-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:35

ESC Sample # : L603575-12

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	1.3	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	1500	20.	mg/kg	3546/DRO	11/02/12	5
Surrogate recovery(%)						
o-Terphenyl	137.		% Rec.	3546/DRO	11/02/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-NE-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:40

ESC Sample # : L603575-13

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	62.	20.	mg/kg	3546/DRO	11/05/12	5
Surrogate recovery(%)						
o-Terphenyl	55.0		% Rec.	3546/DRO	11/05/12	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

November 05, 2012

Date Received : October 31, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-SE-103012 6IN  
Collected By : Matt Kasten  
Collection Date : 10/30/12 11:45

ESC Sample # : L603575-14

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/04/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/04/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/04/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/04/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	11/04/12	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	11/04/12	5
TPH (GC/FID) High Fraction	810	20.	mg/kg	3546/DRO	11/05/12	5
Surrogate recovery(%)						
o-Terphenyl	138.		% Rec.	3546/DRO	11/05/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L603575-02	WG620677	SAMP	TPH (GC/FID) High Fraction	R2421577	O
L603575-03	WG620848	SAMP	TPH (GC/FID) High Fraction	R2421578	O
L603575-05	WG620848	SAMP	TPH (GC/FID) High Fraction	R2421578	J3J6
	WG620848	SAMP	o-Terphenyl	R2421578	J2
L603575-06	WG621202	SAMP	TPH (GC/FID) High Fraction	R2424740	O

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
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.



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Quality Assurance Report  
Level II

L603575

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

November 05, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	mg/kg			WG620221	11/01/12 12:41
o-Terphenyl		% Rec.	67.31	50-150	WG620221	11/01/12 12:41
Benzene	< .0005	mg/kg			WG620702	11/02/12 03:31
Ethylbenzene	< .0005	mg/kg			WG620702	11/02/12 03:31
Toluene	< .005	mg/kg			WG620702	11/02/12 03:31
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG620702	11/02/12 03:31
a,a,a-Trifluorotoluene(FID)		% Rec.	101.0	59-128	WG620702	11/02/12 03:31
a,a,a-Trifluorotoluene(PID)		% Rec.	107.9	54-144	WG620702	11/02/12 03:31
TPH (GC/FID) High Fraction	< 4	mg/kg			WG620677	11/02/12 08:19
o-Terphenyl		% Rec.	72.99	50-150	WG620677	11/02/12 08:19
TPH (GC/FID) High Fraction	< 4	mg/kg			WG620848	11/02/12 07:51
o-Terphenyl		% Rec.	75.32	50-150	WG620848	11/02/12 07:51
Benzene	< .0005	mg/kg			WG621091	11/03/12 14:58
Ethylbenzene	< .0005	mg/kg			WG621091	11/03/12 14:58
Toluene	< .005	mg/kg			WG621091	11/03/12 14:58
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG621091	11/03/12 14:58
Total Xylene	< .0015	mg/kg			WG621091	11/03/12 14:58
a,a,a-Trifluorotoluene(FID)		% Rec.	103.0	59-128	WG621091	11/03/12 14:58
a,a,a-Trifluorotoluene(PID)		% Rec.	110.8	54-144	WG621091	11/03/12 14:58
Benzene	< .0005	mg/kg			WG620797	11/03/12 03:39
Ethylbenzene	< .0005	mg/kg			WG620797	11/03/12 03:39
Toluene	< .005	mg/kg			WG620797	11/03/12 03:39
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG620797	11/03/12 03:39
Total Xylene	< .0015	mg/kg			WG620797	11/03/12 03:39
a,a,a-Trifluorotoluene(FID)		% Rec.	103.8	59-128	WG620797	11/03/12 03:39
a,a,a-Trifluorotoluene(PID)		% Rec.	102.9	54-144	WG620797	11/03/12 03:39
TPH (GC/FID) High Fraction	< 4	mg/kg			WG621202	11/05/12 09:00
o-Terphenyl		% Rec.	71.70	50-150	WG621202	11/05/12 09:00
TPH (GC/FID) High Fraction	< 4	mg/kg			WG621376	11/05/12 15:39
o-Terphenyl		% Rec.	69.49	50-150	WG621376	11/05/12 15:39

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	mg/kg	60	46.9	78.2	50-150	WG620221
o-Terphenyl				70.78	50-150	WG620221
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.41	117.	67-135	WG620702
a,a,a-Trifluorotoluene(FID)				106.8	59-128	WG620702
a,a,a-Trifluorotoluene(PID)				119.1	54-144	WG620702
Benzene	mg/kg	.05	0.0437	87.4	76-113	WG620702
Ethylbenzene	mg/kg	.05	0.0565	113.	78-115	WG620702
Toluene	mg/kg	.05	0.0502	100.	76-114	WG620702
a,a,a-Trifluorotoluene(PID)				108.0	54-144	WG620702

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

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	mg/kg	60	48.3	80.4	50-150	WG620677
o-Terphenyl				74.50	50-150	WG620677
TPH (GC/FID) High Fraction	mg/kg	60	48.4	80.7	50-150	WG620848
o-Terphenyl				78.42	50-150	WG620848
Benzene	mg/kg	.05	0.0545	109.	76-113	WG621091
Ethylbenzene	mg/kg	.05	0.0572	114.	78-115	WG621091
Toluene	mg/kg	.05	0.0554	111.	76-114	WG621091
Total Xylene	mg/kg	.15	0.166	111.	81-118	WG621091
a,a,a-Trifluorotoluene(PID)				109.7	54-144	WG621091
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.04	110.	67-135	WG621091
a,a,a-Trifluorotoluene(FID)				107.6	59-128	WG621091
Benzene	mg/kg	.05	0.0491	98.2	76-113	WG620797
Ethylbenzene	mg/kg	.05	0.0539	108.	78-115	WG620797
Toluene	mg/kg	.05	0.0513	103.	76-114	WG620797
Total Xylene	mg/kg	.15	0.163	109.	81-118	WG620797
a,a,a-Trifluorotoluene(PID)				103.5	54-144	WG620797
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.95	108.	67-135	WG620797
a,a,a-Trifluorotoluene(FID)				101.2	59-128	WG620797
TPH (GC/FID) High Fraction	mg/kg	60	44.8	74.6	50-150	WG621202
o-Terphenyl				69.81	50-150	WG621202
TPH (GC/FID) High Fraction	mg/kg	60	41.4	69.0	50-150	WG621376
o-Terphenyl				65.28	50-150	WG621376

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	mg/kg	47.9	46.9	80.0	50-150	2.09	20	WG620221
o-Terphenyl				73.14	50-150			WG620221
TPH (GC/FID) Low Fraction	mg/kg	6.46	6.41	118.	67-135	0.820	20	WG620702
a,a,a-Trifluorotoluene(FID)				107.0	59-128			WG620702
Benzene	mg/kg	0.0400	0.0437	80.0	76-113	8.82	20	WG620702
Ethylbenzene	mg/kg	0.0524	0.0565	105.	78-115	7.47	20	WG620702
Toluene	mg/kg	0.0461	0.0502	92.0	76-114	8.53	20	WG620702
a,a,a-Trifluorotoluene(PID)				107.4	54-144			WG620702
TPH (GC/FID) High Fraction	mg/kg	46.2	48.3	77.0	50-150	4.47	20	WG620677
o-Terphenyl				73.02	50-150			WG620677
TPH (GC/FID) High Fraction	mg/kg	48.9	48.4	82.0	50-150	0.939	20	WG620848
o-Terphenyl				77.32	50-150			WG620848
TPH (GC/FID) Low Fraction	mg/kg	6.22	6.04	113.	67-135	3.02	20	WG621091
a,a,a-Trifluorotoluene(FID)				107.8	59-128			WG621091
Benzene	mg/kg	0.0485	0.0545	97.0	76-113	11.7	20	WG621091

\* 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				
Ethylbenzene	mg/kg	0.0516	0.0572	103.	78-115	10.4	20	WG621091
Toluene	mg/kg	0.0505	0.0554	101.	76-114	9.22	20	WG621091
Total Xylene	mg/kg	0.151	0.166	101.	81-118	9.07	20	WG621091
a,a,a-Trifluorotoluene(PID)				109.3	54-144			WG621091
Benzene	mg/kg	0.0488	0.0491	98.0	76-113	0.710	20	WG620797
Ethylbenzene	mg/kg	0.0533	0.0539	107.	78-115	1.08	20	WG620797
Toluene	mg/kg	0.0502	0.0513	100.	76-114	2.23	20	WG620797
Total Xylene	mg/kg	0.161	0.163	108.	81-118	1.24	20	WG620797
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG620797
TPH (GC/FID) Low Fraction	mg/kg	5.98	5.95	109.	67-135	0.640	20	WG620797
a,a,a-Trifluorotoluene(FID)				101.0	59-128			WG620797
TPH (GC/FID) High Fraction	mg/kg	44.6	44.8	74.0	50-150	0.334	20	WG621202
o-Terphenyl				68.92	50-150			WG621202
TPH (GC/FID) High Fraction	mg/kg	42.0	41.4	70.0	50-150	1.38	20	WG621376
o-Terphenyl				66.75	50-150			WG621376

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.211	0	.05	84.5	32-137	L603410-01	WG620702
Ethylbenzene	mg/kg	0.263	0	.05	105.	10-150	L603410-01	WG620702
Toluene	mg/kg	0.238	0	.05	95.0	20-142	L603410-01	WG620702
a,a,a-Trifluorotoluene(PID)					106.8	54-144		WG620702
TPH (GC/FID) Low Fraction	mg/kg	25.3	0	5.5	91.8	55-109	L603410-01	WG620702
a,a,a-Trifluorotoluene(FID)					104.6	59-128		WG620702
TPH (GC/FID) High Fraction	mg/kg	49.4	1.27	60	80.3	50-150	L603196-22	WG620221
o-Terphenyl					74.88	50-150		WG620221
TPH (GC/FID) High Fraction	mg/kg	52.5	0	60	87.4	50-150	L602792-02	WG620677
o-Terphenyl					75.97	50-150		WG620677
Benzene	mg/kg	0.248	0.0140	.05	93.7	32-137	L603772-01	WG621091
Ethylbenzene	mg/kg	0.257	0.00630	.05	100.	10-150	L603772-01	WG621091
Toluene	mg/kg	0.253	0	.05	101.	20-142	L603772-01	WG621091
Total Xylene	mg/kg	0.738	0	.15	98.4	16-141	L603772-01	WG621091
a,a,a-Trifluorotoluene(PID)					108.8	54-144		WG621091
TPH (GC/FID) Low Fraction	mg/kg	28.0	3.70	5.5	88.4	55-109	L603772-01	WG621091
a,a,a-Trifluorotoluene(FID)					106.5	59-128		WG621091
Benzene	mg/kg	0.214	0	.05	85.8	32-137	L603431-01	WG620797
Ethylbenzene	mg/kg	0.199	0	.05	79.5	10-150	L603431-01	WG620797
Toluene	mg/kg	0.209	0	.05	83.6	20-142	L603431-01	WG620797
Total Xylene	mg/kg	0.599	0	.15	79.9	16-141	L603431-01	WG620797
a,a,a-Trifluorotoluene(PID)					101.4	54-144		WG620797
TPH (GC/FID) Low Fraction	mg/kg	20.8	0	5.5	75.4	55-109	L603431-01	WG620797
a,a,a-Trifluorotoluene(FID)					100.8	59-128		WG620797

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) High Fraction	mg/kg	50.6	30.0	60	6.88*	50-150	L603575-05	WG620848
o-Terphenyl					38.00*	50-150		WG620848

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.215	0.211	85.9	32-137	1.71	39	L603410-01	WG620702
Ethylbenzene	mg/kg	0.268	0.263	107.	10-150	1.73	44	L603410-01	WG620702
Toluene	mg/kg	0.240	0.238	96.2	20-142	1.21	42	L603410-01	WG620702
a,a,a-Trifluorotoluene(PID)				106.9	54-144				WG620702
TPH (GC/FID) Low Fraction	mg/kg	27.0	25.3	98.0	55-109	6.52	20	L603410-01	WG620702
a,a,a-Trifluorotoluene(FID)				104.9	59-128				WG620702
TPH (GC/FID) High Fraction	mg/kg	48.1	49.4	78.1	50-150	2.63	20	L603196-22	WG620221
o-Terphenyl				74.10	50-150				WG620221
TPH (GC/FID) High Fraction	mg/kg	48.6	52.5	81.1	50-150	7.56	20	L602792-02	WG620677
o-Terphenyl				72.20	50-150				WG620677
Benzene	mg/kg	0.262	0.248	99.1	32-137	5.24	39	L603772-01	WG621091
Ethylbenzene	mg/kg	0.274	0.257	107.	10-150	6.18	44	L603772-01	WG621091
Toluene	mg/kg	0.264	0.253	105.	20-142	4.03	42	L603772-01	WG621091
Total Xylene	mg/kg	0.787	0.738	105.	16-141	6.48	46	L603772-01	WG621091
a,a,a-Trifluorotoluene(PID)				108.1	54-144				WG621091
TPH (GC/FID) Low Fraction	mg/kg	26.9	28.0	84.3	55-109	4.08	20	L603772-01	WG621091
a,a,a-Trifluorotoluene(FID)				105.7	59-128				WG621091
Benzene	mg/kg	0.208	0.214	83.2	32-137	3.03	39	L603431-01	WG620797
Ethylbenzene	mg/kg	0.194	0.199	77.5	10-150	2.60	44	L603431-01	WG620797
Toluene	mg/kg	0.205	0.209	81.9	20-142	2.10	42	L603431-01	WG620797
Total Xylene	mg/kg	0.575	0.599	76.7	16-141	4.08	46	L603431-01	WG620797
a,a,a-Trifluorotoluene(PID)				99.85	54-144				WG620797
TPH (GC/FID) Low Fraction	mg/kg	19.5	20.8	71.1	55-109	5.97	20	L603431-01	WG620797
a,a,a-Trifluorotoluene(FID)				100.8	59-128				WG620797
TPH (GC/FID) High Fraction	mg/kg	67.7	50.6	62.9	50-150	28.9*	20	L603575-05	WG620848
o-Terphenyl				40.61*	50-150				WG620848

Batch number /Run number / Sample number cross reference

WG620221: R2420217: L603575-01  
WG620702: R2421337: L603575-02 03 04 05 06  
WG620677: R2421577: L603575-02  
WG620848: R2421578: L603575-03 05 07 08 10 12  
WG621091: R2423797: L603575-02 03 04 05 06 07 08 09 10 11 12 13 14  
WG620797: R2423939: L603575-01  
WG621202: R2424740: L603575-06 09 11 13 14  
WG621376: R2425838: L603575-04

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

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

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

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

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

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



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Parachute, CO 81635

## Report Summary

Friday November 23, 2012

Report Number: L606186


Samples Received: 11/14/12

Client Project: A28

Description: A28 Site Clearance

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

Entire Report Reviewed By:

  
Jarred Willis , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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

November 23, 2012

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

Date Received : November 14, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-CENTER-111312  
Collected By : Matt Kasten  
Collection Date : 11/13/12 09:25

ESC Sample # : L606186-01

Site ID : A28

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	11/16/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	602/8015	11/16/12	5
TPH (GC/FID) High Fraction	180	20.	mg/kg	3546/DRO	11/23/12	5
Surrogate recovery(%)						
o-Terphenyl	139.		% Rec.	3546/DRO	11/23/12	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: 11/23/12 17:07 Printed: 11/23/12 17:08



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Est. 1970

# REPORT OF ANALYSIS

November 23, 2012

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

Date Received : November 14, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-SE-111312  
Collected By : Matt Kasten  
Collection Date : 11/13/12 09:40

ESC Sample # : L606186-02

Site ID : A28

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	11/16/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	11/16/12	5
TPH (GC/FID) High Fraction	23.	4.0	mg/kg	3546/DRO	11/20/12	1
Surrogate recovery(%)						
o-Terphenyl	60.5		% Rec.	3546/DRO	11/20/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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# REPORT OF ANALYSIS

November 23, 2012

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

Date Received : November 14, 2012  
Description : A28 Site Clearance  
Sample ID : A28-MIDCS-NW-111312  
Collected By : Matt Kasten  
Collection Date : 11/13/12 10:00

ESC Sample # : L606186-03

Site ID : A28

Project # : A28

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	11/16/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	602/8015	11/16/12	5
TPH (GC/FID) High Fraction	6.1	4.0	mg/kg	3546/DRO	11/23/12	1
Surrogate recovery(%)						
o-Terphenyl	74.0		% Rec.	3546/DRO	11/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 11/23/12 17:07 Printed: 11/23/12 17:08

Summary of Remarks For Samples Printed  
11/23/12 at 17:08:10

TSR Signing Reports: 358  
R5 - Desired TAT

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

Sample: L606186-01 Account: ENCANACO Received: 11/14/12 09:00 Due Date: 11/21/12 00:00 RPT Date: 11/23/12 17:07

Sample: L606186-02 Account: ENCANACO Received: 11/14/12 09:00 Due Date: 11/21/12 00:00 RPT Date: 11/23/12 17:07

Sample: L606186-03 Account: ENCANACO Received: 11/14/12 09:00 Due Date: 11/21/12 00:00 RPT Date: 11/23/12 17:07



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

Parachute, CO 81635

Quality Assurance Report  
Level II

L606186

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November 23, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG623207	11/16/12 07:32
a,a,a-Trifluorotoluene(FID)		% Rec.	102.8	59-128	WG623207	11/16/12 07:32
TPH (GC/FID) High Fraction	< 4	mg/kg			WG623812	11/20/12 15:28
o-Terphenyl		% Rec.	73.00	50-150	WG623812	11/20/12 15:28
TPH (GC/FID) High Fraction	< 4	mg/kg			WG624367	11/23/12 08:59
o-Terphenyl		% Rec.	79.80	50-150	WG624367	11/23/12 08:59

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.88	107.	67-135	WG623207
a,a,a-Trifluorotoluene(FID)				98.73	59-128	WG623207
TPH (GC/FID) High Fraction	mg/kg	60	45.3	75.5	50-150	WG623812
o-Terphenyl				74.50	50-150	WG623812
TPH (GC/FID) High Fraction	mg/kg	60	47.2	78.7	50-150	WG624367
o-Terphenyl				78.80	50-150	WG624367

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.86	5.88	106.	67-135	0.450	20	WG623207
a,a,a-Trifluorotoluene(FID)				98.52	59-128			WG623207
TPH (GC/FID) High Fraction	mg/kg	45.5	45.3	76.0	50-150	0.470	20	WG623812
o-Terphenyl				75.40	50-150			WG623812
TPH (GC/FID) High Fraction	mg/kg	41.7	47.2	69.0	50-150	12.4	20	WG624367
o-Terphenyl				72.40	50-150			WG624367

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	25.1	0	5.5	91.1	55-109	L606117-09	WG623207
a,a,a-Trifluorotoluene(FID)					98.35	59-128		WG623207
TPH (GC/FID) High Fraction	mg/kg	40.7	0	60	67.9	50-150	L606227-01	WG623812
o-Terphenyl					62.20	50-150		WG623812

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	25.2	25.1	91.5	55-109	0.420	20	L606117-09	WG623207
a,a,a-Trifluorotoluene(FID)				97.89	59-128				WG623207
TPH (GC/FID) High Fraction	mg/kg	44.3	40.7	73.9	50-150	8.48	20	L606227-01	WG623812
o-Terphenyl				65.10	50-150				WG623812

\* 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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Batch number /Run number / Sample number cross reference

WG623207: R2446000: L606186-01 02 03

WG623812: R2451318: L606186-02

WG624367: R2452945: L606186-01 03

\* \* 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.