



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

Est. 1970

Chris McKisson / Rob Fishburn (LT Env)
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Thursday July 18, 2013

Report Number: L645314


Samples Received: 07/09/13

Client Project: HYRUP 15-44C

Description: HYRUP 15-44C

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

Entire Report Reviewed By:


Jared Willis, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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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 McKisson / Rob Fishburn (LT E
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 18, 2013

Date Received : July 09, 2013
 Description : HYRUP 15-44C
 Sample ID : 070213-HYRUP 15-44C (PITN03) 15-17FT
 Collected By : Dustin Held
 Collection Date : 07/02/13 08:45

ESC Sample # : L645314-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	520		col/g	9215B	07/10/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/10/13	1
Sulfate	4200	500	mg/kg	9056	07/10/13	10
Iron	13000	5.0	mg/kg	6010B	07/17/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/11/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/11/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/11/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/11/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/11/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	8021/8015	07/11/13	5
a,a,a-Trifluorotoluene(PID)	95.2		% Rec.	8021/8015	07/11/13	5
TPH (GC/FID) High Fraction	19.	4.0	mg/kg	8015D/DRO	07/14/13	1
Surrogate recovery(%)						
o-Terphenyl	66.9		% Rec.	8015D/DRO	07/14/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 18, 2013

Date Received : July 09, 2013
 Description : HYRUP 15-44C
 Sample ID : 070213-HYRUP 15-44C (PITE02) 10-12FT
 Collected By : Dustin Held
 Collection Date : 07/02/13 10:20

ESC Sample # : L645314-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	<13		col/g	9215B	07/10/13	1000
Nitrate	2.8	1.0	mg/kg	9056	07/10/13	1
Sulfate	8900	1000	mg/kg	9056	07/10/13	20
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/13/13	1
ORP	320		mV	2580 B-2011	07/12/13	1
pH	8.3		su	9045D	07/11/13	1
Sodium Adsorption Ratio	9.2			Calc.	07/13/13	1
Specific Conductance	4000		umhos/cm	9050AMod	07/11/13	1
Mercury	0.021	0.020	mg/kg	7471	07/10/13	1
Arsenic	14.	1.0	mg/kg	6010B	07/13/13	1
Barium	280	0.25	mg/kg	6010B	07/13/13	1
Cadmium	BDL	0.25	mg/kg	6010B	07/13/13	1
Chromium	23.	0.50	mg/kg	6010B	07/13/13	1
Copper	20.	1.0	mg/kg	6010B	07/13/13	1
Iron	16000	5.0	mg/kg	6010B	07/13/13	1
Lead	12.	0.25	mg/kg	6010B	07/13/13	1
Nickel	22.	1.0	mg/kg	6010B	07/13/13	1
Selenium	1.5	1.0	mg/kg	6010B	07/13/13	1
Silver	BDL	0.50	mg/kg	6010B	07/13/13	1
Zinc	46.	1.5	mg/kg	6010B	07/13/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/11/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/11/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/11/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/11/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/11/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	8021/8015	07/11/13	5
a,a,a-Trifluorotoluene(PID)	95.6		% Rec.	8021/8015	07/11/13	5
TPH (GC/FID) High Fraction	22.	4.0	mg/kg	8015D/DRO	07/14/13	1
Surrogate recovery(%)						
o-Terphenyl	124.		% Rec.	8015D/DRO	07/14/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L645314-02 (PH) - 8.3@22.5c



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July 18, 2013

Date Received : July 09, 2013
 Description : HYRUP 15-44C
 Sample ID : 070213-HYRUP 15-44C (PITE02) 10-12FT
 Collected By : Dustin Held
 Collection Date : 07/02/13 10:20

ESC Sample # : L645314-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/15/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/15/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/15/13	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/15/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/15/13	1
Surrogate Recovery						
Nitrobenzene-d5	79.5		% Rec.	8270C-SIM	07/15/13	1
2-Fluorobiphenyl	84.1		% Rec.	8270C-SIM	07/15/13	1
p-Terphenyl-d14	86.7		% Rec.	8270C-SIM	07/15/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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 L645314-02 (PH) - 8.3@22.5c



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REPORT OF ANALYSIS

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 18, 2013

Date Received : July 09, 2013
 Description : HYRUP 15-44C
 Sample ID : 070213-HYRUP 15-44C (PITW01) 9-11FT
 Collected By : Dustin Held
 Collection Date : 07/02/13 12:10

ESC Sample # : L645314-03
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	900		col/g	9215B	07/10/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/10/13	1
Sulfate	16000	2500	mg/kg	9056	07/10/13	50
Iron	12000	5.0	mg/kg	6010B	07/17/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/12/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/12/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/12/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/12/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/12/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.9		% Rec.	8021/8015	07/12/13	5
a,a,a-Trifluorotoluene(PID)	95.5		% Rec.	8021/8015	07/12/13	5
TPH (GC/FID) High Fraction	15.	4.0	mg/kg	8015D/DRO	07/14/13	1
Surrogate recovery(%)						
o-Terphenyl	74.1		% Rec.	8015D/DRO	07/14/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 18, 2013

Date Received : July 09, 2013
 Description : HYRUP 15-44C
 Sample ID : 070213-HYRUP 15-44C (PITW02) 19-21FT
 Collected By : Dustin Held
 Collection Date : 07/02/13 13:40

ESC Sample # : L645314-04
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	<12		col/g	9215B	07/10/13	1000
Nitrate	1.8	1.0	mg/kg	9056	07/10/13	1
Sulfate	12000	2500	mg/kg	9056	07/11/13	50
Iron	14000	5.0	mg/kg	6010B	07/17/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/12/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/12/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/12/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/12/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/12/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	8021/8015	07/12/13	5
a,a,a-Trifluorotoluene(PID)	95.7		% Rec.	8021/8015	07/12/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	07/14/13	1
Surrogate recovery(%)						
o-Terphenyl	65.9		% Rec.	8015D/DRO	07/14/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L645314-01	WG671331	SAMP	Standard Plate Count	R2745721	BT8
L645314-02	WG671331	SAMP	Standard Plate Count	R2745721	BT8
L645314-03	WG671331	SAMP	Standard Plate Count	R2745721	BT8
L645314-04	WG671331	SAMP	Standard Plate Count	R2745721	BT8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
07/18/13 at 11:52:27

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L645314-01 Account: ENCANACO Received: 07/09/13 09:00 Due Date: 07/16/13 00:00 RPT Date: 07/18/13 11:51

Sample: L645314-02 Account: ENCANACO Received: 07/09/13 09:00 Due Date: 07/16/13 00:00 RPT Date: 07/18/13 11:51

Sample: L645314-03 Account: ENCANACO Received: 07/09/13 09:00 Due Date: 07/16/13 00:00 RPT Date: 07/18/13 11:51

Sample: L645314-04 Account: ENCANACO Received: 07/09/13 09:00 Due Date: 07/16/13 00:00 RPT Date: 07/18/13 11:51



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EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Monday July 15, 2013

Report Number: L644758


Samples Received: 07/03/13

Client Project: HYRUP 15-44C

Description: Hyrup 15-44C

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

Entire Report Reviewed By:


Jared Willis, ESC Representative

Laboratory Certification Numbers

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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

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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 15, 2013

Date Received : July 03, 2013
 Description : Hyrup 15-44C
 Sample ID : 070113-HYRUP15-44C(PITN01) 15-17FT
 Collected By : Dustin Held
 Collection Date : 07/01/13 13:25

ESC Sample # : L644758-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	3600		col/g	9215B	07/03/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/06/13	1
Sulfate	810	100	mg/kg	9056	07/08/13	2
Iron	16000	5.0	mg/kg	6010B	07/12/13	1
Benzene	0.0073	0.0025	mg/kg	8021/8015	07/06/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/06/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Total Xylene	0.029	0.0075	mg/kg	8021/8015	07/06/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/06/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.4		% Rec.	8021/8015	07/06/13	5
a,a,a-Trifluorotoluene(PID)	96.3		% Rec.	8021/8015	07/06/13	5
TPH (GC/FID) High Fraction	7.6	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	82.7		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 07/15/13 08:10 Printed: 07/15/13 08:11



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July 15, 2013

Date Received : July 03, 2013
 Description : Hyrup 15-44C
 Sample ID : 070113-HYRUP15-44C(PITN02) 9-11FT
 Collected By : Dustin Held
 Collection Date : 07/01/13 15:20

ESC Sample # : L644758-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	4600		col/g	9215B	07/03/13	1000
Nitrate	1.9	1.0	mg/kg	9056	07/06/13	1
Sulfate	8300	500	mg/kg	9056	07/08/13	10
Iron	15000	5.0	mg/kg	6010B	07/12/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/08/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/08/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/08/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/08/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/08/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.4		% Rec.	8021/8015	07/08/13	5
a,a,a-Trifluorotoluene(PID)	98.2		% Rec.	8021/8015	07/08/13	5
TPH (GC/FID) High Fraction	5.2	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	68.8		% Rec.	8015D/DRO	07/08/13	1

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 15, 2013

Date Received : July 03, 2013
 Description : Hyrup 15-44C
 Sample ID : 070113-HYRUP15-44C(PITN02) 19-21FT
 Collected By : Dustin Held
 Collection Date : 07/01/13 15:35

ESC Sample # : L644758-03
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	<14		col/g	9215B	07/03/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/06/13	1
Sulfate	12000	1000	mg/kg	9056	07/09/13	20
Iron	15000	5.0	mg/kg	6010B	07/12/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/08/03	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/08/03	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/08/03	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/08/03	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/08/03	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.8		% Rec.	8021/8015	07/08/03	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/08/03	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	07/11/13	1
Surrogate recovery(%)						
o-Terphenyl	55.9		% Rec.	8015D/DRO	07/11/13	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: 07/15/13 08:10 Printed: 07/15/13 08:11

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L644758-01	WG670437	SAMP	Standard Plate Count	R2736600	T8
L644758-02	WG670437	SAMP	Standard Plate Count	R2736600	T8
L644758-03	WG671011	SAMP	TPH (GC/FID) High Fraction	R2740881	J3
	WG670437	SAMP	Standard Plate Count	R2736600	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
07/15/13 at 08:11:07

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L644758-01 Account: ENCANACO Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 08:10

Sample: L644758-02 Account: ENCANACO Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 08:10

Sample: L644758-03 Account: ENCANACO Received: 07/03/13 09:30 Due Date: 07/11/13 00:00 RPT Date: 07/15/13 08:10



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Chris McKisson / Rob Fishburn (LT Env)
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Wednesday July 10, 2013

Report Number: L644240


Samples Received: 06/29/13

Client Project: HYRUP 15-44C

Description: Hyrup 15-44C

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

Entire Report Reviewed By:


Jared Willis, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 10, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062813-HYRUP15-44C(PITS05) 19-21FT
 Collected By : Dustin Held
 Collection Date : 06/28/13 09:45

ESC Sample # : L644240-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	110		col/g	9215B	07/01/13	1000
Nitrate	6.8	1.0	mg/kg	9056	07/05/13	1
Sulfate	720	50.	mg/kg	9056	07/05/13	1
Iron	16000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/06/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/06/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/06/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/06/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	8021/8015	07/06/13	5
a,a,a-Trifluorotoluene(PID)	96.2		% Rec.	8021/8015	07/06/13	5
TPH (GC/FID) High Fraction	28.	4.0	mg/kg	8015D/DRO	07/09/13	1
Surrogate recovery(%)						
o-Terphenyl	97.2		% Rec.	8015D/DRO	07/09/13	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: 07/10/13 16:23 Printed: 07/10/13 16:24



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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 10, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062813-HYRUP15-44C(PITS05) 22-24FT
 Collected By : Dustin Held
 Collection Date : 06/28/13 10:10

ESC Sample # : L644240-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	<10		col/g	9215B	07/01/13	1000
Nitrate	5.4	1.0	mg/kg	9056	07/05/13	1
Sulfate	BDL	50.	mg/kg	9056	07/05/13	1
Iron	13000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	96.1		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	64.8		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/10/13 16:23 Printed: 07/10/13 16:24

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L644240-01	WG670192	SAMP	Standard Plate Count	R2735820	T8
L644240-02	WG670192	SAMP	Standard Plate Count	R2735820	T8P1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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)."

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- 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
07/10/13 at 16:24:10

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L644240-01 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/10/13 16:23

Sample: L644240-02 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/10/13 16:23



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Chris Hines
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Tuesday July 30, 2013

Report Number: L647893


Samples Received: 06/29/13

Client Project: HYRUP 15-44C

Description: Hyrup 15-44C

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

Entire Report Reviewed By:


Jared Willis, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-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, IA Lab #364

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REPORT OF ANALYSIS

Chris Hines
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 30, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS04) 14-16FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 14:05

ESC Sample # : L647893-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/26/13	1
Chromium,Trivalent	11.	2.0	mg/kg	Calc.	07/24/13	1
ORP	25.		mV	2580 B-2011	07/26/13	1
pH	11.		su	9045D	07/29/13	1
Sodium Adsorption Ratio	26.			Calc.	07/26/13	1
Specific Conductance	3500		umhos/cm	9050AMod	07/25/13	1
Mercury	BDL	0.020	mg/kg	7471	07/24/13	1
Arsenic	4.3	1.0	mg/kg	6010B	07/24/13	1
Barium	680	0.25	mg/kg	6010B	07/24/13	1
Cadmium	BDL	0.25	mg/kg	6010B	07/24/13	1
Chromium	11.	0.50	mg/kg	6010B	07/24/13	1
Copper	34.	1.0	mg/kg	6010B	07/24/13	1
Lead	12.	0.25	mg/kg	6010B	07/24/13	1
Nickel	16.	1.0	mg/kg	6010B	07/24/13	1
Selenium	BDL	1.0	mg/kg	6010B	07/24/13	1
Silver	BDL	0.50	mg/kg	6010B	07/24/13	1
Zinc	69.	1.5	mg/kg	6010B	07/24/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Fluorene	0.012	0.0060	mg/kg	8270C-SIM	07/26/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Naphthalene	0.10	0.020	mg/kg	8270C-SIM	07/26/13	1
Phenanthrene	0.029	0.0060	mg/kg	8270C-SIM	07/26/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
1-Methylnaphthalene	0.12	0.020	mg/kg	8270C-SIM	07/26/13	1
2-Methylnaphthalene	0.22	0.020	mg/kg	8270C-SIM	07/26/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L647893-01 (PH) - 11@20.3c



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REPORT OF ANALYSIS

July 30, 2013

Chris Hines
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS04) 14-16FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 14:05

ESC Sample # : L647893-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/26/13	1
Surrogate Recovery						
Nitrobenzene-d5	98.9		% Rec.	8270C-SIM	07/26/13	1
2-Fluorobiphenyl	87.4		% Rec.	8270C-SIM	07/26/13	1
p-Terphenyl-d14	87.5		% Rec.	8270C-SIM	07/26/13	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: 07/30/13 09:56 Printed: 07/30/13 10:39
 L647893-01 (PH) - 11@20.3c



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REPORT OF ANALYSIS

Chris Hines
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 30, 2013

Date Received : July 03, 2013
 Description : Hyrup 15-44C
 Sample ID : 070113-HYRUP15-44C(PITN01) 15-17FT
 Collected By : Dustin Held
 Collection Date : 07/01/13 13:25

ESC Sample # : L647893-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/26/13	1
Chromium,Trivalent	10.	2.0	mg/kg	Calc.	07/24/13	1
ORP	65.		mV	2580 B-2011	07/26/13	1
pH	9.3		su	9045D	07/29/13	1
Sodium Adsorption Ratio	63.			Calc.	07/26/13	1
Specific Conductance	2100		umhos/cm	9050AMod	07/25/13	1
Mercury	0.024	0.020	mg/kg	7471	07/25/13	1
Arsenic	5.8	1.0	mg/kg	6010B	07/24/13	1
Barium	6200	0.25	mg/kg	6010B	07/24/13	1
Cadmium	BDL	0.25	mg/kg	6010B	07/24/13	1
Chromium	10.	0.50	mg/kg	6010B	07/24/13	1
Copper	11.	1.0	mg/kg	6010B	07/24/13	1
Lead	4.7	0.25	mg/kg	6010B	07/24/13	1
Nickel	9.7	1.0	mg/kg	6010B	07/24/13	1
Selenium	BDL	1.0	mg/kg	6010B	07/24/13	1
Silver	BDL	0.50	mg/kg	6010B	07/24/13	1
Zinc	20.	1.5	mg/kg	6010B	07/24/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Naphthalene	0.023	0.020	mg/kg	8270C-SIM	07/26/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/26/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/26/13	1
2-Methylnaphthalene	0.021	0.020	mg/kg	8270C-SIM	07/26/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L647893-02 (PH) - 9.3@20.4c



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REPORT OF ANALYSIS

July 30, 2013

Chris Hines
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

Date Received : July 03, 2013
 Description : Hyrup 15-44C
 Sample ID : 070113-HYRUP15-44C(PITN01) 15-17FT
 Collected By : Dustin Held
 Collection Date : 07/01/13 13:25

ESC Sample # : L647893-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/26/13	1
Surrogate Recovery						
Nitrobenzene-d5	90.5		% Rec.	8270C-SIM	07/26/13	1
2-Fluorobiphenyl	83.2		% Rec.	8270C-SIM	07/26/13	1
p-Terphenyl-d14	75.4		% Rec.	8270C-SIM	07/26/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 Note:
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Reported: 07/30/13 09:56 Printed: 07/30/13 10:39
 L647893-02 (PH) - 9.3@20.4c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L647893-01	WG673432	SAMP	Anthracene	R2758721	Q
	WG673432	SAMP	Acenaphthene	R2758721	Q
	WG673432	SAMP	Acenaphthylene	R2758721	Q
	WG673432	SAMP	Benzo(a)anthracene	R2758721	Q
	WG673432	SAMP	Benzo(a)pyrene	R2758721	Q
	WG673432	SAMP	Benzo(b)fluoranthene	R2758721	Q
	WG673432	SAMP	Benzo(g,h,i)perylene	R2758721	Q
	WG673432	SAMP	Benzo(k)fluoranthene	R2758721	Q
	WG673432	SAMP	Chrysene	R2758721	Q
	WG673432	SAMP	Dibenz(a,h)anthracene	R2758721	Q
	WG673432	SAMP	Fluoranthene	R2758721	Q
	WG673432	SAMP	Fluorene	R2758721	Q
	WG673432	SAMP	Indeno(1,2,3-cd)pyrene	R2758721	Q
	WG673432	SAMP	Naphthalene	R2758721	Q
	WG673432	SAMP	Phenanthrene	R2758721	Q
	WG673432	SAMP	Pyrene	R2758721	Q
	WG673432	SAMP	1-Methylnaphthalene	R2758721	Q
	WG673432	SAMP	2-Methylnaphthalene	R2758721	Q
	WG673432	SAMP	2-Chloronaphthalene	R2758721	Q
	L647893-02	WG673432	SAMP	Anthracene	R2758721
WG673432		SAMP	Acenaphthene	R2758721	Q
WG673432		SAMP	Acenaphthylene	R2758721	Q
WG673432		SAMP	Benzo(a)anthracene	R2758721	Q
WG673432		SAMP	Benzo(a)pyrene	R2758721	Q
WG673432		SAMP	Benzo(b)fluoranthene	R2758721	Q
WG673432		SAMP	Benzo(g,h,i)perylene	R2758721	Q
WG673432		SAMP	Benzo(k)fluoranthene	R2758721	Q
WG673432		SAMP	Chrysene	R2758721	Q
WG673432		SAMP	Dibenz(a,h)anthracene	R2758721	Q
WG673432		SAMP	Fluoranthene	R2758721	Q
WG673432		SAMP	Fluorene	R2758721	Q
WG673432		SAMP	Indeno(1,2,3-cd)pyrene	R2758721	Q
WG673432		SAMP	Naphthalene	R2758721	Q
WG673432		SAMP	Phenanthrene	R2758721	Q
WG673432		SAMP	Pyrene	R2758721	Q
WG673432		SAMP	1-Methylnaphthalene	R2758721	Q
WG673432		SAMP	2-Methylnaphthalene	R2758721	Q
WG673432		SAMP	2-Chloronaphthalene	R2758721	Q

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
Q	(ESC) Sample held beyond the accepted holding time.

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
07/30/13 at 10:39:28

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L647893-01 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/29/13 00:00 RPT Date: 07/30/13 09:56
Relogged from L644242-05 Run PAHSIM OOH per client instruction 7/23/13 TAH
Sample: L647893-02 Account: ENCANACO Received: 07/03/13 09:30 Due Date: 07/29/13 00:00 RPT Date: 07/30/13 09:56
Relogged from L644758-01 Run PAHSIM OOH per client instruction 7/23/13 TAH



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Est. 1970

Chris McKisson / Rob Fishburn (LT Env)
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Tuesday July 09, 2013

Report Number: L644242


Samples Received: 06/29/13

Client Project: HYRUP 15-44C

Description: Hyrup 15-44C

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

Entire Report Reviewed By:


Jared Willis, ESC Representative

Laboratory Certification Numbers

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

Chris McKisson / Rob Fishburn (LT E
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS01) 9-11FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 09:15

ESC Sample # : L644242-01
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	2400		col/g	9215B	07/01/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/05/13	1
Sulfate	6200	500	mg/kg	9056	07/08/13	10
Iron	15000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	97.0		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	25.	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	62.7		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS02) 9-11FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 10:50

ESC Sample # : L644242-02
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	19000		col/g	9215B	07/01/13	10000
Nitrate	BDL	1.0	mg/kg	9056	07/05/13	1
Sulfate	4400	500	mg/kg	9056	07/08/13	10
Iron	13000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.6		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	96.2		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	15.	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	64.1		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS02) 19-21FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 11:10

ESC Sample # : L644242-03
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	3700		col/g	9215B	07/01/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/05/13	1
Sulfate	4600	500	mg/kg	9056	07/08/13	10
Iron	17000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	96.6		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	15.	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	62.1		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS03) 14-16FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 12:35

ESC Sample # : L644242-04
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	2200		col/g	9215B	07/01/13	1000
Nitrate	1.8	1.0	mg/kg	9056	07/05/13	1
Sulfate	6600	500	mg/kg	9056	07/08/13	10
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/03/13	1
Chromium,Trivalent	20.	2.0	mg/kg	Calc.	07/05/13	1
ORP	170		mV	2580 B-2011	07/03/13	1
pH	8.3		su	9045D	07/05/13	1
Sodium Adsorption Ratio	44.			Calc.	07/03/13	1
Specific Conductance	6400		umhos/cm	9050AMod	07/02/13	1
Mercury	BDL	0.020	mg/kg	7471	07/03/13	1
Arsenic	13.	1.0	mg/kg	6010B	07/05/13	1
Barium	230	0.25	mg/kg	6010B	07/05/13	1
Cadmium	BDL	0.25	mg/kg	6010B	07/05/13	1
Chromium	20.	0.50	mg/kg	6010B	07/05/13	1
Copper	17.	1.0	mg/kg	6010B	07/05/13	1
Iron	15000	5.0	mg/kg	6010B	07/05/13	1
Lead	9.8	0.25	mg/kg	6010B	07/05/13	1
Nickel	19.	1.0	mg/kg	6010B	07/05/13	1
Selenium	BDL	1.0	mg/kg	6010B	07/05/13	1
Silver	BDL	0.50	mg/kg	6010B	07/05/13	1
Zinc	42.	1.5	mg/kg	6010B	07/05/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	96.4		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	70.1		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L644242-04 (PH) - 8.3@21.5c



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REPORT OF ANALYSIS

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS03) 14-16FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 12:35

ESC Sample # : L644242-04
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	07/05/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/05/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/05/13	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/05/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/05/13	1
Surrogate Recovery						
Nitrobenzene-d5	83.2		% Rec.	8270C-SIM	07/05/13	1
2-Fluorobiphenyl	81.9		% Rec.	8270C-SIM	07/05/13	1
p-Terphenyl-d14	62.9		% Rec.	8270C-SIM	07/05/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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 L644242-04 (PH) - 8.3@21.5c



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REPORT OF ANALYSIS

Chris McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS04) 14-16FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 14:05

ESC Sample # : L644242-05
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	42.		col/g	9215B	07/01/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/05/13	1
Sulfate	1200	100	mg/kg	9056	07/08/13	2
Iron	9100	5.0	mg/kg	6010B	07/07/13	1
Benzene	0.016	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	0.0087	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.6		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	95.9		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	65.5		% Rec.	8015D/DRO	07/08/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITS04) 19-21FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 14:20

ESC Sample # : L644242-06
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	240		col/g	9215B	07/01/13	1000
Nitrate	BDL	1.0	mg/kg	9056	07/05/13	1
Sulfate	2200	250	mg/kg	9056	07/08/13	5
Iron	18000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	95.4		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	40.	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	54.8		% Rec.	8015D/DRO	07/08/13	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 McKisson / Rob Fishburn (LT E)
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

July 09, 2013

Date Received : June 29, 2013
 Description : Hyrup 15-44C
 Sample ID : 062713-HYRUP15-44C(PITE01) 19-21FT
 Collected By : Dustin Held
 Collection Date : 06/27/13 16:20

ESC Sample # : L644242-07
 Site ID : HYRUP 15-44C
 Project # : HYRUP 15-44C

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Standard Plate Count	200		col/g	9215B	07/01/13	1000
Nitrate	3.7	1.0	mg/kg	9056	07/05/13	1
Sulfate	1500	250	mg/kg	9056	07/08/13	5
Iron	18000	5.0	mg/kg	6010B	07/07/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/03/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/03/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/03/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/03/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	07/03/13	5
a,a,a-Trifluorotoluene(PID)	97.4		% Rec.	8021/8015	07/03/13	5
TPH (GC/FID) High Fraction	11.	4.0	mg/kg	8015D/DRO	07/08/13	1
Surrogate recovery(%)						
o-Terphenyl	54.1		% Rec.	8015D/DRO	07/08/13	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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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L644242-01	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-02	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-03	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-04	WG670252	SAMP	p-Terphenyl-d14	R2734942	J2
	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-05	WG670776	SAMP	Sulfate	R2737900	J3
	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-06	WG670190	SAMP	Standard Plate Count	R2735809	T8
L644242-07	WG670190	SAMP	Standard Plate Count	R2735809	T8

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

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
07/09/13 at 15:40:26

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L644242-01 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-02 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-03 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-04 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-05 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-06 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39
Sample: L644242-07 Account: ENCANACO Received: 06/29/13 09:00 Due Date: 07/08/13 00:00 RPT Date: 07/09/13 15:39