

QtrQtr: NENE Sec: 22 Twp: 7S Rng: 93W

Legend

★ A22W Site Location



0 0.25 0.5 1 Miles

Rule Engineering, LLC
Solutions to Regulations for Industry



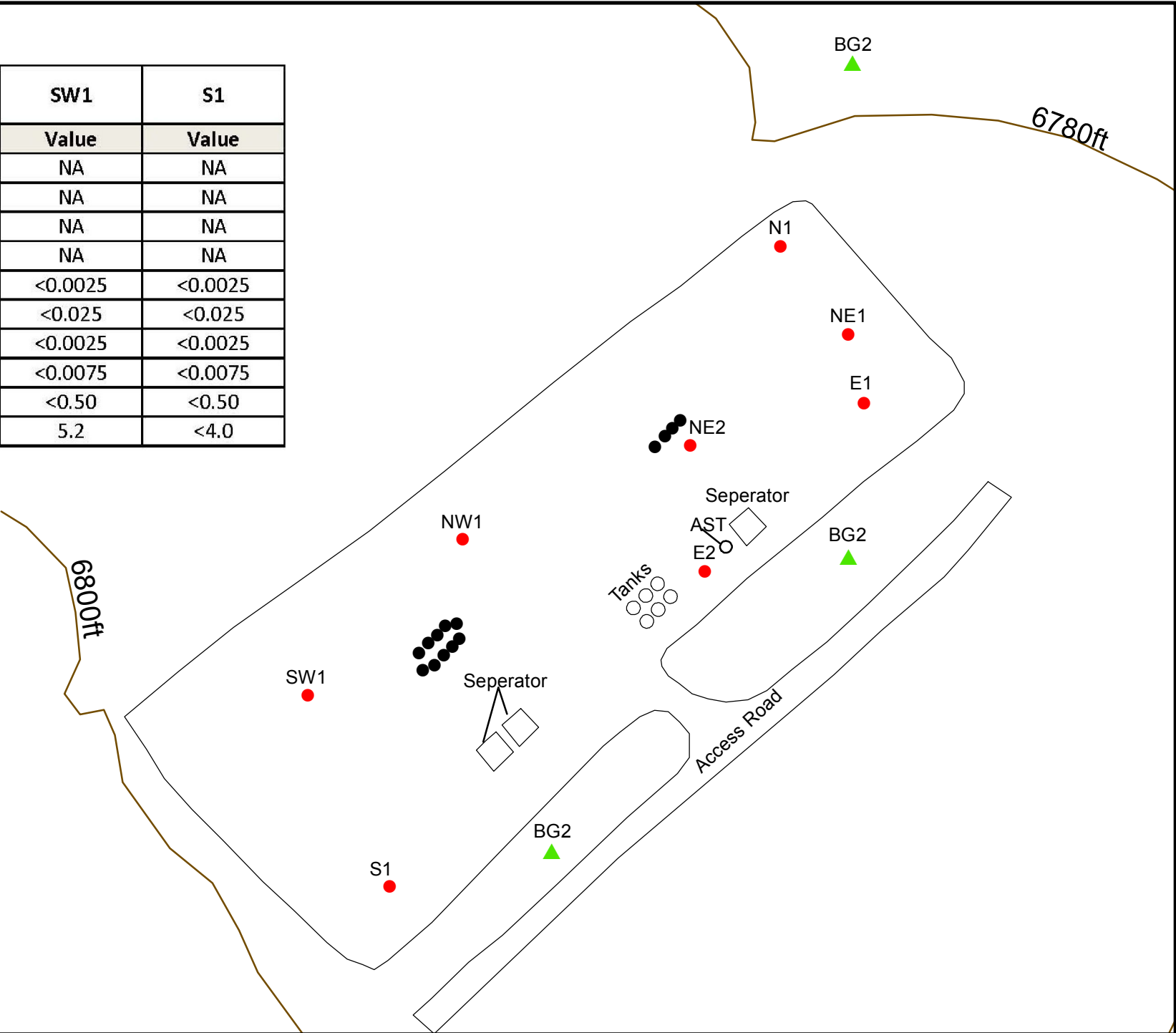
**A22W
Location Map**

DATE: 3/29/2012 JG FILE:

FIGURE: 1

Location ID		NE1	E1	E2	N1	SW1	S1
Parameter	Units	Value	Value	Value	Value	Value	Value
ORP	mV	NA	150	NA	150	NA	NA
pH	su	NA	8.7	NA	8.4	NA	NA
Sodium Adsorption Ratio	units	NA	6.5	NA	6.5	NA	NA
Arsenic	mg/kg	NA	13	NA	6.8	NA	NA
Benzene	mg/kg	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	mg/kg	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Total Xylene	mg/kg	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
GRO	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
DRO	mg/kg	<4.0	<4.0	<4.0	<4.0	5.2	<4.0

Note:
NA = Not Analyzed



Legend

- ▲ Background Sample
- Sample Location
- Wells
- Contour Line
- A22W Pad

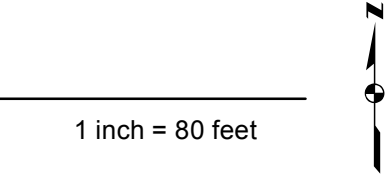


Table 1
Field Observations

Sample Id	Coordinates		Depth Collected (inches)	pH	Chloride (mg/kg)	Notes
A22W-SI-NE1-031512	39.43683	-107.75211	6-9	~7	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-E1-031512	39.43664	-107.75189	3-6	~7	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-E2-031512	39.43644	-107.75209	10-12	~6	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-N1-031512	39.43700	-107.75240	3-5	~7	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-SW1-031512	39.43618	-107.75340	5-7	~7	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-S1-031512	39.43581	-107.75303	3-5	~7	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-NE2-031512	39.43664	-107.75217	6-9	~8	<500	No odors, no staining, matrix: light brown silty sand
A22W-SI-NW1-031512	39.43654	-107.75290	9-11	~7	<500	No odors, no staining, matrix: black to light brown silty sand
A22W-SI-BG1-031512	39.43739	-107.75205	3-6	NA	NA	NA
A22W-SI-BG2-031512	39.43640	-107.75168	12-15	NA	NA	NA
A22W-SI-BG3-031512	39.43589	-107.75237	12-15	NA	NA	NA

NA = Not Analyzed

Table 2
Summary of Analytical Results

Sample ID			A22W-SI-NE1-031512		A22W-SI-E1-031512		A22W-SI-E2-031512		A22W-SI-N1-031512		A22W-SI-SW1-031512		A22W-SI-S1-031512	
Parameter	Method	Units	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Chromium, Hexavalent	3060A/7196A	mg/kg	NA		<2.0		NA		<2.0		NA		NA	
Chromium, Trivalent	Calc.	mg/kg			14		NA		13		NA		NA	
ORP	2580	mV	NA		150	T8	NA		150	T8	NA		NA	
pH	9045D	su	NA		8.7		NA		8.4		NA		NA	
Specific Conductance	9050AMod	umhos/cm	NA		190		NA		690		NA		NA	
Sodium Adsorption Ratio	Calc.	units	NA		6.5		NA		6.5		NA		NA	
Mercury	7471	mg/kg	NA		<0.020		NA		<0.020		NA		NA	
Arsenic	6010B	mg/kg	NA		13		NA		6.8		NA		NA	
Barium	6010B	mg/kg	NA		270		NA		1300	V	NA		NA	
Cadmium	6010B	mg/kg	NA		0.46		NA		0.37		NA		NA	
Chromium	6010B	mg/kg	NA		14		NA		13		NA		NA	
Copper	6010B	mg/kg	NA		11		NA		9.9		NA		NA	
Lead	6010B	mg/kg	NA		8.8		NA		7.8		NA		NA	
Nickel	6010B	mg/kg	NA		9.2		NA		9.2		NA		NA	
Selenium	6010B	mg/kg	NA		<1.0		NA		<1.0		NA		NA	
Silver	6010B	mg/kg	NA		<0.50		NA		<0.50		NA		NA	
Zinc	6010B	mg/kg	NA		41		NA		32		NA		NA	
Benzene	8021/8015	mg/kg	<0.0025		<0.0025		<0.0025		<0.0025		<0.0025		<0.0025	
Toluene	8021/8015	mg/kg	<0.025		<0.025		<0.025		<0.025		<0.025		<0.025	
Ethylbenzene	8021/8015	mg/kg	<0.0025		<0.0025		<0.0025		<0.0025		<0.0025		<0.0025	
Total Xylene	8021/8015	mg/kg	<0.0075		<0.0075		<0.0075		<0.0075		<0.0075		<0.0075	
GRO	GRO	mg/kg	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	
DRO	3546/DRO	mg/kg	<4.0		<4.0		<4.0		<4.0		5.2		<4.0	
Anthracene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Acenaphthene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Acenaphthylene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Benzo(a)anthracene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Benzo(a)pyrene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Benzo(b)fluoranthene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Benzo(g,h,i)perylene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Benzo(k)fluoranthene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Chrysene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Dibenz(a,h)anthracene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Fluoranthene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Fluorene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Indeno(1,2,3-cd)pyrene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Naphthalene	8270C-SIM	mg/kg	NA		<0.0060		NA		0.0087		NA		NA	
Phenanthrene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
Pyrene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
1-Methylnaphthalene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	
2-Methylnaphthalene	8270C-SIM	mg/kg	NA		<0.0060		NA		0.015		NA		NA	
2-Chloronaphthalene	8270C-SIM	mg/kg	NA		<0.0060		NA		<0.0060		NA		NA	

Qualifiers:

T8

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

V

(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

NA = Not Analyzed



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

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

Report Summary

Monday March 26, 2012

Report Number: L565515

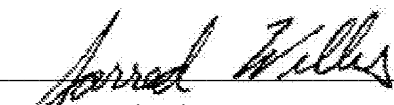
Samples Received: 03/16/12

Client Project: A22W SI

Description: A22W Site Investigation

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,
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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

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-NE1-031512 6-9 IN
Collected By : SRM
Collection Date : 03/15/12 12:30

ESC Sample # : L565515-01

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	03/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.2		% Rec.	8021/8015	03/18/12	5
a,a,a-Trifluorotoluene(PID)	99.9		% Rec.	8021/8015	03/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	86.2		% Rec.	3546/DRO	03/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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2717 County Road 215, Suite 100
Parachute, CO 81635

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-E1-031512 3-6 IN
Collected By : SRM
Collection Date : 03/15/12 12:15

ESC Sample # : L565515-02

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	03/21/12	1
Chromium, Trivalent	14.	2.0	mg/kg	Calc.	03/19/12	1
ORP	150		mV	2580	03/21/12	1
pH	8.7		su	9045D	03/20/12	1
Sodium Adsorption Ratio	6.5			Calc.	03/22/12	1
Specific Conductance	190		umhos/cm	9050AMod	03/22/12	1
Mercury	BDL	0.020	mg/kg	7471	03/20/12	1
Arsenic	13.	1.0	mg/kg	6010B	03/19/12	1
Barium	270	0.25	mg/kg	6010B	03/19/12	1
Cadmium	0.46	0.25	mg/kg	6010B	03/19/12	1
Chromium	14.	0.50	mg/kg	6010B	03/19/12	1
Copper	11.	1.0	mg/kg	6010B	03/19/12	1
Lead	8.8	0.25	mg/kg	6010B	03/19/12	1
Nickel	9.2	1.0	mg/kg	6010B	03/19/12	1
Selenium	BDL	1.0	mg/kg	6010B	03/19/12	1
Silver	BDL	0.50	mg/kg	6010B	03/19/12	1
Zinc	41.	1.5	mg/kg	6010B	03/19/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	03/18/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/18/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/18/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/18/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/18/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.5		% Rec.	8021/8015	03/18/12	5
a,a,a-Trifluorotoluene(PID)	99.8		% Rec.	8021/8015	03/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	89.2		% Rec.	3546/DRO	03/23/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L565515-02 (PH) - 8.7@23.2c



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Fax (615) 758-5859

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2717 County Road 215, Suite 100
Parachute, CO 81635

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-E1-031512 3-6 IN
Collected By : SRM
Collection Date : 03/15/12 12:15

ESC Sample # : L565515-02

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Surrogate Recovery						
Nitrobenzene-d5	84.4		% Rec.	8270C-SIM	03/22/12	1
2-Fluorobiphenyl	82.9		% Rec.	8270C-SIM	03/22/12	1
p-Terphenyl-d14	80.2		% Rec.	8270C-SIM	03/22/12	1

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Det. Limit - Practical Quantitation Limit(PQL)

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Chris Hines / Matt Kasten
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Parachute, CO 81635

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-E2-031512 10-12 IN
Collected By : SRM
Collection Date : 03/15/12 12:00

ESC Sample # : L565515-03

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	03/21/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/21/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/21/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/21/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/21/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	03/21/12	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	03/21/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	90.4		% Rec.	3546/DRO	03/23/12	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

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-N1-031512 3-5 IN
Collected By : SRM
Collection Date : 03/15/12 12:45

ESC Sample # : L565515-04

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	03/21/12	1
Chromium, Trivalent	13.	2.0	mg/kg	Calc.	03/19/12	1
ORP	150		mV	2580	03/21/12	1
pH	8.4		su	9045D	03/20/12	1
Sodium Adsorption Ratio	12.			Calc.	03/22/12	1
Specific Conductance	690		umhos/cm	9050AMod	03/22/12	1
Mercury	BDL	0.020	mg/kg	7471	03/20/12	1
Arsenic	6.8	1.0	mg/kg	6010B	03/19/12	1
Barium	1300	0.25	mg/kg	6010B	03/19/12	1
Cadmium	0.37	0.25	mg/kg	6010B	03/19/12	1
Chromium	13.	0.50	mg/kg	6010B	03/19/12	1
Copper	9.9	1.0	mg/kg	6010B	03/19/12	1
Lead	7.8	0.25	mg/kg	6010B	03/19/12	1
Nickel	9.2	1.0	mg/kg	6010B	03/19/12	1
Selenium	BDL	1.0	mg/kg	6010B	03/19/12	1
Silver	BDL	0.50	mg/kg	6010B	03/19/12	1
Zinc	32.	1.5	mg/kg	6010B	03/19/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	03/22/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/22/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/22/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/22/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/22/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	03/22/12	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	03/22/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	86.5		% Rec.	3546/DRO	03/23/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L565515-04 (PH) - 8.4@23.1c



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
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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

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-N1-031512 3-5 IN
Collected By : SRM
Collection Date : 03/15/12 12:45

ESC Sample # : L565515-04

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Naphthalene	0.0087	0.0060	mg/kg	8270C-SIM	03/22/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
2-Methylnaphthalene	0.015	0.0060	mg/kg	8270C-SIM	03/22/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	03/22/12	1
Surrogate Recovery						
Nitrobenzene-d5	90.5		% Rec.	8270C-SIM	03/22/12	1
2-Fluorobiphenyl	87.3		% Rec.	8270C-SIM	03/22/12	1
p-Terphenyl-d14	65.3		% Rec.	8270C-SIM	03/22/12	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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L565515-04 (PH) - 8.4@23.1c



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

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-SW1-031512 5-7 FT
Collected By : SRM
Collection Date : 03/15/12 13:10

ESC Sample # : L565515-05

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	03/21/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/21/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/21/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/21/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/21/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8021/8015	03/21/12	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	03/21/12	5
TPH (GC/FID) High Fraction	5.2	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	79.5		% Rec.	3546/DRO	03/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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1-800-767-5859
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REPORT OF ANALYSIS

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

March 26, 2012

Date Received : March 16, 2012
Description : A22W Site Investigation
Sample ID : A22W-SI-S1-031512 3-5 IN
Collected By : SRM
Collection Date : 03/15/12 13:20

ESC Sample # : L565515-06

Site ID : A22W

Project # : A22W SI

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	03/22/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/22/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/22/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/22/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/22/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	8021/8015	03/22/12	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	03/22/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/23/12	1
Surrogate recovery(%)						
o-Terphenyl	79.8		% Rec.	3546/DRO	03/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 03/26/12 14:29 Printed: 03/26/12 14:29

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L565515-02	WG583780	SAMP	ORP	R2082953	T8
L565515-04	WG583456	SAMP	Barium	R2080473	V
	WG583780	SAMP	ORP	R2082953	T8

Attachment B
Explanation of QC Qualifier Codes

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

Received 5/14/2012 Rifle COGCC

Summary of Remarks For Samples Printed
03/26/12 at 14:29:59

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.

Sample: L565515-01 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.
Sample: L565515-02 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.
Sample: L565515-03 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.
Sample: L565515-04 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.
Sample: L565515-05 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.
Sample: L565515-06 Account: ENCANACO Received: 03/16/12 09:00 Due Date: 03/23/12 00:00 RPT Date: 03/26/12 14:29
Refer to 03-0034 for HOLD.



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L565515

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Fax (615) 758-5859

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March 26, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Arsenic	< 1	mg/kg			WG583456	03/19/12 08:40
Barium	< .25	mg/kg			WG583456	03/19/12 08:40
Cadmium	< .25	mg/kg			WG583456	03/19/12 08:40
Chromium	< .5	mg/kg			WG583456	03/19/12 08:40
Copper	< 1	mg/kg			WG583456	03/19/12 08:40
Lead	< .25	mg/kg			WG583456	03/19/12 08:40
Nickel	< 1	mg/kg			WG583456	03/19/12 08:40
Selenium	< 1	mg/kg			WG583456	03/19/12 08:40
Silver	< .5	mg/kg			WG583456	03/19/12 08:40
Zinc	< 1.5	mg/kg			WG583456	03/19/12 08:40
Mercury	< .02	mg/kg			WG583533	03/20/12 10:23
Mercury	< .02	mg/kg			WG583534	03/20/12 09:01
pH	8.60	su			WG583624	03/20/12 14:18
Chromium, Hexavalent	< 2	mg/kg			WG583626	03/21/12 14:47
Benzene	< .0005	mg/kg			WG583316	03/17/12 23:01
Ethylbenzene	< .0005	mg/kg			WG583316	03/17/12 23:01
Toluene	< .005	mg/kg			WG583316	03/17/12 23:01
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG583316	03/17/12 23:01
Total Xylene	< .0015	mg/kg			WG583316	03/17/12 23:01
a,a,a-Trifluorotoluene(FID)		% Rec.	97.02	59-128	WG583316	03/17/12 23:01
a,a,a-Trifluorotoluene(PID)		% Rec.	100.9	54-144	WG583316	03/17/12 23:01
Benzene	< .0005	mg/kg			WG583911	03/21/12 16:38
Ethylbenzene	< .0005	mg/kg			WG583911	03/21/12 16:38
Toluene	< .005	mg/kg			WG583911	03/21/12 16:38
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG583911	03/21/12 16:38
Total Xylene	< .0015	mg/kg			WG583911	03/21/12 16:38
a,a,a-Trifluorotoluene(FID)		% Rec.	97.65	59-128	WG583911	03/21/12 16:38
a,a,a-Trifluorotoluene(PID)		% Rec.	104.3	54-144	WG583911	03/21/12 16:38
Specific Conductance	1.10	umhos/cm			WG583995	03/22/12 13:15
TPH (GC/FID) High Fraction	< 4	ppm			WG584225	03/23/12 10:36
o-Terphenyl		% Rec.	78.79	50-150	WG584225	03/23/12 10:36
1-Methylnaphthalene	< .006	mg/kg			WG583348	03/21/12 23:16
2-Chloronaphthalene	< .006	mg/kg			WG583348	03/21/12 23:16
2-Methylnaphthalene	< .006	mg/kg			WG583348	03/21/12 23:16
Acenaphthene	< .006	mg/kg			WG583348	03/21/12 23:16
Acenaphthylene	< .006	mg/kg			WG583348	03/21/12 23:16
Anthracene	< .006	mg/kg			WG583348	03/21/12 23:16
Benzo(a)anthracene	< .006	mg/kg			WG583348	03/21/12 23:16
Benzo(a)pyrene	< .006	mg/kg			WG583348	03/21/12 23:16
Benzo(b)fluoranthene	< .006	mg/kg			WG583348	03/21/12 23:16
Benzo(g,h,i)perylene	< .006	mg/kg			WG583348	03/21/12 23:16

* 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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Parachute, CO 81635

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L565515

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

March 26, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzo(k)fluoranthene	< .006	mg/kg			WG583348	03/21/12 23:16
Chrysene	< .006	mg/kg			WG583348	03/21/12 23:16
Dibenz(a,h)anthracene	< .006	mg/kg			WG583348	03/21/12 23:16
Fluoranthene	< .006	mg/kg			WG583348	03/21/12 23:16
Fluorene	< .006	mg/kg			WG583348	03/21/12 23:16
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG583348	03/21/12 23:16
Naphthalene	< .006	mg/kg			WG583348	03/21/12 23:16
Phenanthrene	< .006	mg/kg			WG583348	03/21/12 23:16
Pyrene	< .006	mg/kg			WG583348	03/21/12 23:16
2-Fluorobiphenyl		% Rec.	105.4	34-129	WG583348	03/21/12 23:16
Nitrobenzene-d5		% Rec.	105.4	14-141	WG583348	03/21/12 23:16
p-Terphenyl-d14		% Rec.	118.1	25-139	WG583348	03/21/12 23:16
TPH (GC/FID) High Fraction	< 4	ppm			WG584224	03/23/12 17:13
o-Terphenyl		% Rec.	82.67	50-150	WG584224	03/23/12 17:13

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	6.60	6.80	2.38	20	L565515-04	WG583456
Barium	mg/kg	1600	1300	19.4	20	L565515-04	WG583456
Cadmium	mg/kg	0.360	0.370	2.19	20	L565515-04	WG583456
Chromium	mg/kg	12.0	13.0	11.4	20	L565515-04	WG583456
Copper	mg/kg	11.0	9.90	12.3	20	L565515-04	WG583456
Lead	mg/kg	8.30	7.80	6.33	20	L565515-04	WG583456
Nickel	mg/kg	8.40	9.20	9.09	20	L565515-04	WG583456
Selenium	mg/kg	0	0	0	20	L565515-04	WG583456
Silver	mg/kg	0	0	0	20	L565515-04	WG583456
Zinc	mg/kg	32.0	32.0	0.627	20	L565515-04	WG583456
Mercury	mg/kg	0.410	0.430	5.01	20	L565492-03	WG583533
Mercury	mg/kg	0	0	0	20	L565558-14	WG583534
pH	su	7.90	7.90	0	1	L565293-06	WG583624
ORP	mV	100.	110.	5.61	20	L565693-01	WG583780
ORP	mV	220.	210.	2.35	20	L565694-02	WG583780
Chromium,Hexavalent	mg/kg	0	0	0	20	L565293-06	WG583626
Chromium,Hexavalent	mg/kg	0	0	0	20	L564598-01	WG583626
Specific Conductance	umhos/cm	3600	4400	21.4*	20	L565772-05	WG583995

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Arsenic	mg/kg	92.6	87.4	94.4	82.9-117	WG583456
Barium	mg/kg	169	166.	98.2	82.8-117	WG583456
Cadmium	mg/kg	61.8	57.5	93.0	83.3-117	WG583456
Chromium	mg/kg	71.3	71.7	101.	81.8-118	WG583456
Copper	mg/kg	81.2	77.6	95.6	83.9-116	WG583456

* Performance of this Analyte is outside of established criteria.

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
Lead	mg/kg	92.4	89.1	96.4	83.3-117	WG583456
Nickel	mg/kg	59.1	53.9	91.2	83.8-116	WG583456
Selenium	mg/kg	89.5	86.5	96.6	79-121	WG583456
Silver	mg/kg	34.4	29.4	85.5	66.3-134	WG583456
Zinc	mg/kg	141	136.	96.5	80.9-119	WG583456
Mercury	mg/kg	3.77	3.54	93.9	71.6-128	WG583533
Mercury	mg/kg	3.77	3.01	79.8	71.6-128	WG583534
pH	su	7.98	8.00	100.	98-101	WG583624
ORP	mV	228	229.	100.	95.6-104.	WG583780
Chromium, Hexavalent	mg/kg	203	147.	72.4	50-150	WG583626
Benzene	mg/kg	.05	0.0490	97.9	76-113	WG583316
Ethylbenzene	mg/kg	.05	0.0498	99.7	78-115	WG583316
Toluene	mg/kg	.05	0.0488	97.6	76-114	WG583316
Total Xylene	mg/kg	.15	0.150	100.	81-118	WG583316
a,a,a-Trifluorotoluene (PID)				98.21	54-144	WG583316
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.70	104.	67-135	WG583316
a,a,a-Trifluorotoluene (FID)				103.0	59-128	WG583316
Benzene	mg/kg	.05	0.0482	96.4	76-113	WG583911
Ethylbenzene	mg/kg	.05	0.0510	102.	78-115	WG583911
Toluene	mg/kg	.05	0.0512	102.	76-114	WG583911
Total Xylene	mg/kg	.15	0.156	104.	81-118	WG583911
a,a,a-Trifluorotoluene (PID)				106.9	54-144	WG583911
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.20	113.	67-135	WG583911
a,a,a-Trifluorotoluene (FID)				103.4	59-128	WG583911
Specific Conductance	umhos/cm	350	340.	97.1	85-115	WG583995
TPH (GC/FID) High Fraction	ppm	60	46.4	77.3	50-150	WG584225
o-Terphenyl				86.87	50-150	WG584225
1-Methylnaphthalene	mg/kg	.033	0.0294	89.0	48-113	WG583348
2-Chloronaphthalene	mg/kg	.033	0.0313	94.9	51-114	WG583348
2-Methylnaphthalene	mg/kg	.033	0.0299	90.7	44-109	WG583348
Acenaphthene	mg/kg	.033	0.0278	84.4	52-108	WG583348
Acenaphthylene	mg/kg	.033	0.0316	95.7	51-110	WG583348
Anthracene	mg/kg	.033	0.0307	92.9	58-120	WG583348
Benzo(a)anthracene	mg/kg	.033	0.0364	110.*	54-110	WG583348
Benzo(a)pyrene	mg/kg	.033	0.0345	105.	56-118	WG583348
Benzo(b)fluoranthene	mg/kg	.033	0.0345	105.	55-114	WG583348
Benzo(g,h,i)perylene	mg/kg	.033	0.0369	112.	48-130	WG583348
Benzo(k)fluoranthene	mg/kg	.033	0.0356	108.	55-122	WG583348
Chrysene	mg/kg	.033	0.0353	107.	57-118	WG583348

* Performance of this Analyte is outside of established criteria.

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March 26, 2012

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Dibenz(a,h)anthracene	mg/kg	.033		0.0344	104.	53-122	WG583348
Fluoranthene	mg/kg	.033		0.0304	92.0	58-118	WG583348
Fluorene	mg/kg	.033		0.0320	96.9	54-109	WG583348
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0355	108.	51-125	WG583348
Naphthalene	mg/kg	.033		0.0272	82.4	45-105	WG583348
Phenanthrene	mg/kg	.033		0.0288	87.4	53-114	WG583348
Pyrene	mg/kg	.033		0.0356	108.	53-121	WG583348
2-Fluorobiphenyl					94.56	34-129	WG583348
Nitrobenzene-d5					88.48	14-141	WG583348
p-Terphenyl-d14					107.7	25-139	WG583348
TPH (GC/FID) High Fraction	ppm	60		48.2	80.3	50-150	WG584224
o-Terphenyl					94.94	50-150	WG584224

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	8.00	8.00	100.	98-101	0	20	WG583624
ORP	mV	232.	229.	102.	95.6-104.	1.30	20	WG583780
Chromium, Hexavalent	mg/kg	155.	147.	76.0	50-150	5.30	20	WG583626
Benzene	mg/kg	0.0477	0.0490	95.0	76-113	2.66	20	WG583316
Ethylbenzene	mg/kg	0.0487	0.0498	97.0	78-115	2.35	20	WG583316
Toluene	mg/kg	0.0474	0.0488	95.0	76-114	2.85	20	WG583316
Total Xylene	mg/kg	0.147	0.150	98.0	81-118	2.29	20	WG583316
a,a,a-Trifluorotoluene(PID)				98.20	54-144			WG583316
TPH (GC/FID) Low Fraction	mg/kg	6.02	5.70	109.	67-135	5.54	20	WG583316
a,a,a-Trifluorotoluene(FID)				103.8	59-128			WG583316
Benzene	mg/kg	0.0421	0.0482	84.0	76-113	13.5	20	WG583911
Ethylbenzene	mg/kg	0.0451	0.0510	90.0	78-115	12.3	20	WG583911
Toluene	mg/kg	0.0453	0.0512	91.0	76-114	12.2	20	WG583911
Total Xylene	mg/kg	0.137	0.156	92.0	81-118	12.7	20	WG583911
a,a,a-Trifluorotoluene(PID)				104.1	54-144			WG583911
TPH (GC/FID) Low Fraction	mg/kg	6.26	6.20	114.	67-135	0.930	20	WG583911
a,a,a-Trifluorotoluene(FID)				103.8	59-128			WG583911
Specific Conductance	umhos/	350.	340.	100.	85-115	2.90	20	WG583995
TPH (GC/FID) High Fraction	ppm	43.8	46.4	73.0	50-150	5.78	25	WG584225
o-Terphenyl				82.45	50-150			WG584225
1-Methylnaphthalene	mg/kg	0.0282	0.0294	86.0	48-113	4.00	24	WG583348
2-Chloronaphthalene	mg/kg	0.0302	0.0313	91.0	51-114	3.73	24	WG583348
2-Methylnaphthalene	mg/kg	0.0294	0.0299	89.0	44-109	1.74	24	WG583348
Acenaphthene	mg/kg	0.0252	0.0278	76.0	52-108	9.92	22	WG583348
Acenaphthylene	mg/kg	0.0288	0.0316	87.0	51-110	9.32	21	WG583348
Anthracene	mg/kg	0.0297	0.0307	90.0	58-120	3.21	20	WG583348
Benzo(a)anthracene	mg/kg	0.0340	0.0364	103.	54-110	6.84	22	WG583348

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Parachute, CO 81635

Quality Assurance Report
Level II

L565515

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

March 26, 2012

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzo(a)pyrene	mg/kg	0.0331	0.0345	100.		56-118	4.27	21	WG583348
Benzo(b)fluoranthene	mg/kg	0.0331	0.0345	100.		55-114	4.07	20	WG583348
Benzo(g,h,i)perylene	mg/kg	0.0344	0.0369	104.		48-130	6.90	20	WG583348
Benzo(k)fluoranthene	mg/kg	0.0341	0.0356	103.		55-122	4.22	25	WG583348
Chrysene	mg/kg	0.0335	0.0353	102.		57-118	5.20	20	WG583348
Dibenz(a,h)anthracene	mg/kg	0.0323	0.0344	98.0		53-122	6.22	20	WG583348
Fluoranthene	mg/kg	0.0309	0.0304	94.0		58-118	1.76	20	WG583348
Fluorene	mg/kg	0.0296	0.0320	90.0		54-109	7.89	20	WG583348
Indeno(1,2,3-cd)pyrene	mg/kg	0.0335	0.0355	102.		51-125	5.68	21	WG583348
Naphthalene	mg/kg	0.0269	0.0272	81.0		45-105	1.07	24	WG583348
Phenanthrene	mg/kg	0.0294	0.0288	89.0		53-114	1.96	20	WG583348
Pyrene	mg/kg	0.0332	0.0356	101.		53-121	6.96	20	WG583348
2-Fluorobiphenyl				87.56		34-129			WG583348
Nitrobenzene-d5				88.65		14-141			WG583348
p-Terphenyl-d14				102.2		25-139			WG583348
TPH (GC/FID) High Fraction	ppm	46.4	48.2	77.0		50-150	3.69	25	WG584224
o-Terphenyl				88.11		50-150			WG584224

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Arsenic	mg/kg	53.0	6.80	50	92.4	75-125	L565515-04	WG583456
Barium	mg/kg	1450	1300	50	300.*	75-125	L565515-04	WG583456
Cadmium	mg/kg	44.1	0.370	50	87.5	75-125	L565515-04	WG583456
Chromium	mg/kg	60.5	13.0	50	95.0	75-125	L565515-04	WG583456
Copper	mg/kg	60.0	9.90	50	100.	75-125	L565515-04	WG583456
Lead	mg/kg	55.4	7.80	50	95.2	75-125	L565515-04	WG583456
Nickel	mg/kg	52.6	9.20	50	86.8	75-125	L565515-04	WG583456
Selenium	mg/kg	44.7	0	50	89.4	75-125	L565515-04	WG583456
Silver	mg/kg	43.1	0	50	86.2	75-125	L565515-04	WG583456
Zinc	mg/kg	79.0	32.0	50	94.0	75-125	L565515-04	WG583456
Mercury	mg/kg	0.718	0.430	.125	115.	70-130	L565492-03	WG583533
Mercury	mg/kg	0.244	0	.25	97.6	70-130	L565558-14	WG583534
Chromium, Hexavalent	mg/kg	0.760	0	20	3.80*	50-150	L565293-08	WG583626
Benzene	mg/kg	0.675	0.720	.05	0*	32-137	L565505-06	WG583316
Ethylbenzene	mg/kg	1.09	1.30	.05	0*	10-150	L565505-06	WG583316
Toluene	mg/kg	1.66	0.220	.05	576.*	20-142	L565505-06	WG583316
Total Xylene	mg/kg	2.98	2.70	.15	37.6	16-141	L565505-06	WG583316
a,a,a-Trifluorotoluene(PID)					109.8	54-144		WG583316
TPH (GC/FID) Low Fraction	mg/kg	39.0	32.4	5.5	24.2*	55-109	L565505-06	WG583316
a,a,a-Trifluorotoluene(FID)					114.4	59-128		WG583316
Benzene	mg/kg	0.187	0	.05	74.9	32-137	L565515-05	WG583911
Ethylbenzene	mg/kg	0.196	0	.05	78.4	10-150	L565515-05	WG583911
Toluene	mg/kg	0.201	0	.05	80.4	20-142	L565515-05	WG583911
Total Xylene	mg/kg	0.595	0	.15	79.3	16-141	L565515-05	WG583911
a,a,a-Trifluorotoluene(PID)					102.4	54-144		WG583911
TPH (GC/FID) Low Fraction	mg/kg	25.7	0	5.5	93.5	55-109	L565515-05	WG583911

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
a,a,a-Trifluorotoluene(FID)					102.0	59-128		
1-Methylnaphthalene	mg/kg	0.0326	0	.033	98.9	25-155	L565435-21	WG583348
2-Chloronaphthalene	mg/kg	0.0349	0	.033	106.	31-153	L565435-21	WG583348
2-Methylnaphthalene	mg/kg	0.0339	0	.033	103.	22-172	L565435-21	WG583348
Acenaphthene	mg/kg	0.0293	0	.033	88.8	43-133	L565435-21	WG583348
Acenaphthylene	mg/kg	0.0333	0	.033	101.	42-146	L565435-21	WG583348
Anthracene	mg/kg	0.0336	0	.033	102.	38-153	L565435-21	WG583348
Benzo(a)anthracene	mg/kg	0.0363	0	.033	110.	31-142	L565435-21	WG583348
Benzo(a)pyrene	mg/kg	0.0347	0	.033	105.	26-152	L565435-21	WG583348
Benzo(b)fluoranthene	mg/kg	0.0343	0	.033	104.	10-188	L565435-21	WG583348
Benzo(g,h,i)perylene	mg/kg	0.0383	0	.033	116.	10-176	L565435-21	WG583348
Benzo(k)fluoranthene	mg/kg	0.0343	0	.033	104.	22-163	L565435-21	WG583348
Chrysene	mg/kg	0.0357	0	.033	108.	26-146	L565435-21	WG583348
Dibenz(a,h)anthracene	mg/kg	0.0358	0	.033	108.	10-160	L565435-21	WG583348
Fluoranthene	mg/kg	0.0331	0	.033	100.	23-160	L565435-21	WG583348
Fluorene	mg/kg	0.0329	0	.033	99.8	44-143	L565435-21	WG583348
Indeno(1,2,3-cd)pyrene	mg/kg	0.0377	0	.033	114.	10-157	L565435-21	WG583348
Naphthalene	mg/kg	0.0313	0	.033	95.0	22-156	L565435-21	WG583348
Phenanthrene	mg/kg	0.0317	0	.033	96.1	23-164	L565435-21	WG583348
Pyrene	mg/kg	0.0357	0	.033	108.	12-170	L565435-21	WG583348
2-Fluorobiphenyl					101.9	34-129		WG583348
Nitrobenzene-d5					100.7	14-141		WG583348
p-Terphenyl-d14					102.2	25-139		WG583348
TPH (GC/FID) High Fraction	ppm	41.5	0	60	69.2	50-150	L565488-04	WG584224
o-Terphenyl					82.10	50-150		WG584224

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	55.6	53.0	97.6	75-125	4.79	20	L565515-04	WG583456
Barium	mg/kg	1710	1450	820.*	75-125	16.5	20	L565515-04	WG583456
Cadmium	mg/kg	46.4	44.1	92.1	75-125	5.08	20	L565515-04	WG583456
Chromium	mg/kg	61.3	60.5	96.6	75-125	1.31	20	L565515-04	WG583456
Copper	mg/kg	56.6	60.0	93.4	75-125	5.83	20	L565515-04	WG583456
Lead	mg/kg	58.0	55.4	100.	75-125	4.59	20	L565515-04	WG583456
Nickel	mg/kg	53.2	52.6	88.0	75-125	1.13	20	L565515-04	WG583456
Selenium	mg/kg	46.7	44.7	93.4	75-125	4.38	20	L565515-04	WG583456
Silver	mg/kg	44.3	43.1	88.6	75-125	2.75	20	L565515-04	WG583456
Zinc	mg/kg	79.9	79.0	95.8	75-125	1.13	20	L565515-04	WG583456
Mercury	mg/kg	0.683	0.718	101.	70-130	5.00	20	L565492-03	WG583533
Mercury	mg/kg	0.279	0.244	112.	70-130	13.4	20	L565558-14	WG583534
Chromium, Hexavalent	mg/kg	0.960	0.760	4.80*	50-150	23.3*	20	L565293-08	WG583626
Benzene	mg/kg	0.544	0.675	0*	32-137	21.5	39	L565505-06	WG583316
Ethylbenzene	mg/kg	1.02	1.09	0*	10-150	6.07	44	L565505-06	WG583316
Toluene	mg/kg	0.242	1.66	8.64*	20-142	149.*	42	L565505-06	WG583316
Total Xylene	mg/kg	2.22	2.98	0*	16-141	29.1	46	L565505-06	WG583316
a,a,a-Trifluorotoluene(PID)				105.1	54-144				WG583316
TPH (GC/FID) Low Fraction	mg/kg	41.2	39.0	32.1*	55-109	5.40	20	L565505-06	WG583316
a,a,a-Trifluorotoluene(FID)				115.6	59-128				WG583316

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Tax I.D. 62-0814289

Est. 1970

March 26, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.201	0.187	80.3	32-137	6.90	39	L565515-05	WG583911	
Ethylbenzene	mg/kg	0.204	0.196	81.7	10-150	4.05	44	L565515-05	WG583911	
Toluene	mg/kg	0.212	0.201	84.8	20-142	5.31	42	L565515-05	WG583911	
Total Xylene	mg/kg	0.621	0.595	82.8	16-141	4.34	46	L565515-05	WG583911	
a,a,a-Trifluorotoluene(PID)				103.4	54-144					WG583911
TPH (GC/FID) Low Fraction	mg/kg	25.6	25.7	93.1	55-109	0.460	20	L565515-05	WG583911	
a,a,a-Trifluorotoluene(FID)				101.8	59-128					WG583911
1-Methylnaphthalene	mg/kg	0.0326	0.0326	98.8	25-155	0.118	27	L565435-21	WG583348	
2-Chloronaphthalene	mg/kg	0.0345	0.0349	105.	31-153	1.15	22	L565435-21	WG583348	
2-Methylnaphthalene	mg/kg	0.0334	0.0339	101.	22-172	1.52	29	L565435-21	WG583348	
Acenaphthene	mg/kg	0.0296	0.0293	89.6	43-133	0.910	26	L565435-21	WG583348	
Acenaphthylene	mg/kg	0.0337	0.0333	102.	42-146	1.25	22	L565435-21	WG583348	
Anthracene	mg/kg	0.0330	0.0336	100.	38-153	1.83	27	L565435-21	WG583348	
Benzo(a)anthracene	mg/kg	0.0364	0.0363	110.	31-142	0.354	31	L565435-21	WG583348	
Benzo(a)pyrene	mg/kg	0.0338	0.0347	102.	26-152	2.48	32	L565435-21	WG583348	
Benzo(b)fluoranthene	mg/kg	0.0335	0.0343	102.	10-188	2.34	33	L565435-21	WG583348	
Benzo(g,h,i)perylene	mg/kg	0.0356	0.0383	108.	10-176	7.43	30	L565435-21	WG583348	
Benzo(k)fluoranthene	mg/kg	0.0337	0.0343	102.	22-163	1.88	29	L565435-21	WG583348	
Chrysene	mg/kg	0.0355	0.0357	108.	26-146	0.525	30	L565435-21	WG583348	
Dibenz(a,h)anthracene	mg/kg	0.0340	0.0358	103.	10-160	5.12	39	L565435-21	WG583348	
Fluoranthene	mg/kg	0.0325	0.0331	98.6	23-160	1.86	22	L565435-21	WG583348	
Fluorene	mg/kg	0.0330	0.0329	100.	44-143	0.194	23	L565435-21	WG583348	
Indeno(1,2,3-cd)pyrene	mg/kg	0.0352	0.0377	106.	10-157	6.90	40	L565435-21	WG583348	
Naphthalene	mg/kg	0.0303	0.0313	91.9	22-156	3.29	27	L565435-21	WG583348	
Phenanthrene	mg/kg	0.0316	0.0317	95.7	23-164	0.479	25	L565435-21	WG583348	
Pyrene	mg/kg	0.0358	0.0357	109.	12-170	0.395	24	L565435-21	WG583348	
2-Fluorobiphenyl				102.5	34-129					WG583348
Nitrobenzene-d5				102.5	14-141					WG583348
p-Terphenyl-d14				105.0	25-139					WG583348
TPH (GC/FID) High Fraction	ppm	45.7	41.5	76.2	50-150	9.63	25	L565488-04	WG584224	
o-Terphenyl				89.64	50-150					WG584224

Batch number /Run number / Sample number cross reference

WG583456: R2080473: L565515-02 04
WG583534: R2081174: L565515-04
WG583533: R2081175: L565515-02
WG583624: R2081496: L565515-02 04
WG583780: R2082953: L565515-02 04
WG583626: R2083133: L565515-02 04
WG583316: R2083435: L565515-01 02
WG583911: R2083533: L565515-03 04 05 06
WG583995: R2084833: L565515-02 04
WG583769: R2085896: L565515-02 04
WG584225: R2086233: L565515-06
WG583348: R2086854: L565515-02 04
WG584224: R2088655: L565515-01 02 03 04 05

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

Encana Oil & Gas (USA)
2717 CR 215, Ste. 100
Parachute, CO 81635
ENCANACO
ENCANACO-RULEENG

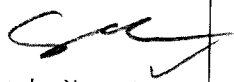
Billing Information: Received 5/14/2012 Rifle CO GCC Analysis/Container/Preservative

Chris Hines
2717 County Road 215, Suite 100
Parachute, CO 81635
970-285-2653

Report to: Chris Hines
Email to: christopher.hines@encana.com

Project Description: A22W Site Investigation
City/State Collected: CO
Phone: 970-285-2653
FAX: 970-285-2653
Client Project #: A22W SI
ESC Key: ENCANACO-RULEENG

Collected by: SRM
Site/Facility ID#: A22W
P.O.#:

Collected by (signature): 
Immediately Packed on Ice N Y
Rush? (Lab MUST Be Notified)
Same Day.....200%
Next Day.....100%
Two Day.....50%
Three Day.....25%
Date Results Needed:
Email? ☐ No ☒ Yes
FAX? ☐ No ☐ Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEXGRO / DRO - 8021/8015	SV8270PAHSIM - 8270SIM	SPCON - 9050AMod	SAR - Calc.	RCRA8 Metals + Cu, Ni, and Zn - 6010/7470	CR6SS - 3060A/7196	CR3 - Calc.	Remarks/Contaminant	Sample # (lab only)
A22W-SI-NE1-031512	Grab	SS	6"-9"	3/15/12	1230	3	x							LS65515	01
A22W-SI-E1-031512	Grab	SS	3"-6"	3/15/12	1215	3	x	X	X	✓	X	X	X	02	
A22W-SI-NE2-031512	Grab	SS	6"-9"	3/15/12	1130	3									
A22W-SI-E2-031512	Grab	SS	10"-12"	3/15/12	1200	3	X							03	
A22W-SI-N1-031512	Grab	SS	3"-5"	3/15/12	1245	3	X	X	X	✓	X	X	X	04	
A22W-SI-NW1-031512	Grab	SS	9"-11"	3/15/12	1300	3									
A22W-SI-SW1-031512	Grab	SS	5"-7"	3/15/12	1310	3	X							05	
A22W-SI-S1-031512	Grab	SS	3"-5"	3/15/12	1320	3	X							06	
A22W-SI-BG1-031512	Grab	SS	3"-6"	3/15/12	1325	2									

03-0034

Chain of Custody
Page 1 of 2



12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

G122

CoCode ENCANACO (lab use only)

Template/Prelogin


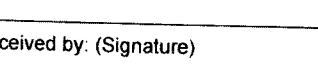
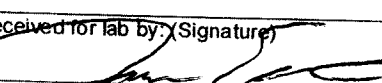
Shipped Via: T70530

Remarks/Contaminant Sample # (lab only)

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

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature) 	Date: 3/15/12	Time:	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 24°C	Bottles Received: 30-402
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 3-16-12	Time: 09:00
				CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked: NCF:

[illegible]

Flow	Other
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

Relinquished by: (Signature)	Date: 3/15/12	Time: 1600	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 24°C	Bottles Received: 30-402
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3-16-12	Time: 09:00
				CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked: <input type="checkbox"/> NCF: <input type="checkbox"/>