



Encana Oil & Gas (USA) Inc.
370 17th Street, Suite 1700
Denver, CO 80202
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January 27, 2012

Mr. Bob Chesson
Department of Natural Resources
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203-2136

RE: **Quarterly Groundwater Monitoring Report**
Ione #4 Tank Battery
API 05-123-07455
NENE 2-T2N-R66W 6PM
40.171844, -104.738473
Weld County, Colorado

Dear Mr. Chesson:

Attached is the Quarterly Groundwater Monitoring Report for the Ione #4 Tank Battery. This report details the remediation activities conducted at the site. Please contact the Encana Oil & Gas Environmental Department at (303) 774-3962 if you have any questions or require additional information.

Sincerely,

Matthew Harrison
Environmental Coordinator
Encana Oil & Gas (USA) Inc.

Attachments:

Quarterly Groundwater Monitoring Report – Ione #4 Tank Battery



GROUNDWATER MONITORING REPORT JANUARY 2012

IONE #4 TANK BATTERY

On January 6, 2012, LT Environmental, Inc. (LTE), under the direction of Encana Oil & Gas (USA) Inc. (Encana), conducted groundwater monitoring at the Ione #4 (API 05-123-07455) Tank Battery (Site). The Site is located at 40.171844, -104.738473, and the legal description of the Site is NENE 2-T2N-R66W 6PM. This constitutes the second groundwater monitoring event at the Site. Site history has been described in preceding reports.

Monitoring wells SB01 through SB03 were installed on September 29, 2011, using a direct-push rig operated by High Plains Drilling of Denver, Colorado. The Site Map is presented as Figure 1. Groundwater level measurements were collected from the monitoring wells and are summarized in Table 1.

Depth to groundwater, which ranged from 10.81 feet below top of casing (btoc) in SB02 to 13.01 feet btoc in SB01, was used to calculate well-specific purge volumes. Calculated depth to groundwater below ground surface (bgs) ranged from 9.99 feet bgs in SB01 to 11.41 feet bgs in SB03. Following purging, samples were collected and then submitted to Summit Scientific of Golden, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency Method 8260B.

Groundwater analytical results, summarized in Table 1, indicate BTEX concentrations in monitoring well SB01 are in compliance with the Colorado Department of Public Health and Environment-Water Quality Control Commission Regulation 41 (WQCC Reg 41). Monitoring wells SB02 and SB03 exhibit BTEX concentrations that exceed WQCC Reg 41. Monitoring well SB02 exhibits a benzene concentration of 790 micrograms per liter ($\mu\text{g/L}$). Monitoring well SB03 exhibits an ethylbenzene concentration of 1,600 $\mu\text{g/L}$. The laboratory analytical report is attached.

The January 2012 groundwater monitoring event constitutes the second quarterly monitoring event at the Site. LTE recommends continued quarterly groundwater monitoring and natural attenuation at this Site until four consecutive quarters of groundwater samples exhibit concentrations in compliance with the WQCC Reg 41. The next scheduled sampling event is April 2012.

FIGURE



IMAGE COURTESY OF GOOGLE EARTH, 05/04/2011

LEGEND

- SOIL BORING
- ESTIMATED GROUNDWATER FLOW DIRECTION
- ABOVEGROUND STORAGE TANK (AST)
- PRODUCED WATER TANK
- SEPARATOR
- BERM

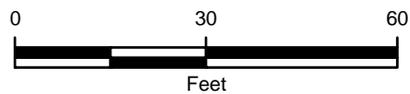


FIGURE 1
GROUNDWATER ANALYTICAL MAP
IONE #4 TANK BATTERY
WELD COUNTY, COLORADO

ENCANA OIL & GAS (USA) INC.



TABLE

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
 IONE #4 TANK BATTERY
 WELD COUNTY, COLORADO
 ENCANA OIL & GAS (USA) INC.

Sample ID	Date	Depth to Water (feet btoc)	Well Stick-Up Height (feet)	Calculated Depth to Water	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB01	10/6/2011	12.60	NM	NM	<1.0	<1.0	<1.0	<1.0
	1/6/2012	13.01	3.02	9.99	<1.0	<1.0	<1.0	<1.0
SB02	10/6/2011	10.81	NM	NM	980	7.5	220	16,000
	1/6/2012	10.81	0.00	10.81	790	7.7	660	9,500
SB03	10/6/2011	11.69	NM	NM	<1.0	13	67	7,700
	1/6/2012	12.36	0.95	11.41	1.2	3.8	1,600	6,000
CDPHE WQCC Reg 41					5	560	700	10,000

NOTES:

btoc - below top of casing

bgs - below ground surface

µg/L - micrograms per liter

NM - not measured

< - indicates result is less than stated laboratory reporting limit

BOLD - indicates result exceeds the applicable standard

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment - Water Quality

Control Commission Regulation 41 covering Basic Standards for Ground Water

ATTACHMENT

LABORATORY ANALYTICAL REPORT

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 10, 2012

Daniel Burns
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: ENC - Ione #4

Enclosed are the results of analyses for samples received by Summit Scientific on 01/06/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
01/10/12 18:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IONE 4 SB01	R201029-01	Water	01/06/12 13:15	01/06/12 17:00
IONE 4 SB02	R201029-02	Water	01/06/12 13:00	01/06/12 17:00
IONE 4 SB03	R201029-03	Water	01/06/12 13:25	01/06/12 17:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 01/10/12 18:47

IONE 4 SB01
R201029-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2010708	01/07/12	01/09/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **01/06/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.3 %	57.9-139		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		94.6 %	80.8-120		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 01/10/12 18:47

IONE 4 SB02
R201029-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/12 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	790	100	ug/l	100	2010708	01/07/12	01/10/12	EPA 8260B	
Toluene	7.7	1.0	"	1	"	"	"	"	
Ethylbenzene	660	100	"	100	"	"	"	"	
Xylenes (total)	9500	100	"	"	"	"	"	"	

Date Sampled: **01/06/12 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.6 %	57.9-139		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.4 %	80.8-120		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
 Project Manager: Daniel Burns

Reported:
 01/10/12 18:47

IONE 4 SB03
R201029-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/12 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.2	1.0	ug/l	1	2010708	01/07/12	01/10/12	EPA 8260B	
Toluene	3.8	1.0	"	"	"	"	"	"	
Ethylbenzene	1600	100	"	100	"	"	01/10/12	"	
Xylenes (total)	6000	100	"	"	"	"	01/10/12	"	

Date Sampled: **01/06/12 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.2 %	57.9-139		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	83.1-115		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		94.7 %	80.8-120		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
01/10/12 18:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD		Notes
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch 2010708 - EPA 5030 Water MS

Blank (2010708-BLK1)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.2	94.7	57.9-139					
Surrogate: Toluene-d8	13.5		"	13.3	101	83.1-115					
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3	94.4	80.8-120					

Blank (2010708-BLK2)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.2	92.8	57.9-139					
Surrogate: Toluene-d8	13.6		"	13.3	102	83.1-115					
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3	94.7	80.8-120					

LCS (2010708-BS1)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	30.2	1.0	ug/l	33.3	90.7	60.1-131			10.9		
Toluene	31.6	1.0	"	33.3	94.9	65.9-127			11.3		
Ethylbenzene	30.7	1.0	"	33.3	92.1	65.1-129			20		
m,p-Xylene	58.4	2.0	"	66.7	87.6	66.8-127			20		
o-Xylene	29.8	1.0	"	33.3	89.3	61.2-120			20		
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.2	99.3	57.9-139					
Surrogate: Toluene-d8	13.8		"	13.3	103	83.1-115					
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3	96.0	80.8-120					

LCS (2010708-BS2)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	30.1	1.0	ug/l	33.3	90.3	60.1-131			10.9		
Toluene	31.7	1.0	"	33.3	95.0	65.9-127			11.3		
Ethylbenzene	30.7	1.0	"	33.3	92.1	65.1-129			20		
m,p-Xylene	58.4	2.0	"	66.7	87.6	66.8-127			20		
o-Xylene	29.6	1.0	"	33.3	89.0	61.2-120			20		
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2	98.2	57.9-139					
Surrogate: Toluene-d8	13.8		"	13.3	104	83.1-115					
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3	95.1	80.8-120					

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Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
01/10/12 18:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 2010708 - EPA 5030 Water MS

LCS Dup (2010708-BSD1)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	31.4	1.0	ug/l	33.3		94.1	60.1-131	3.73	10.9	
Toluene	33.4	1.0	"	33.3		100	65.9-127	5.41	11.3	
Ethylbenzene	33.0	1.0	"	33.3		98.9	65.1-129	7.16	20	
m,p-Xylene	61.9	2.0	"	66.7		92.9	66.8-127	5.92	20	
o-Xylene	31.9	1.0	"	33.3		95.7	61.2-120	6.97	20	
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.2		99.7	57.9-139			
Surrogate: Toluene-d8	13.7		"	13.3		103	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	80.8-120			

LCS Dup (2010708-BSD2)

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	31.0	1.0	ug/l	33.3		93.0	60.1-131	2.95	10.9	
Toluene	33.0	1.0	"	33.3		98.9	65.9-127	4.05	11.3	
Ethylbenzene	32.2	1.0	"	33.3		96.8	65.1-129	4.89	20	
m,p-Xylene	61.3	2.0	"	66.7		92.0	66.8-127	4.95	20	
o-Xylene	31.5	1.0	"	33.3		94.4	61.2-120	5.96	20	
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		98.6	57.9-139			
Surrogate: Toluene-d8	13.5		"	13.3		101	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.2	80.8-120			

Matrix Spike (2010708-MS1)

Source: R201028-01

Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	31.4	1.0	ug/l	33.3	ND	94.3	52.7-130		19.3	
Toluene	33.6	1.0	"	33.3	ND	101	57-127		18.7	
Ethylbenzene	32.5	1.0	"	33.3	ND	97.5	59.2-127		20	
m,p-Xylene	61.9	2.0	"	66.7	ND	92.9	53.2-132		20	
o-Xylene	31.3	1.0	"	33.3	ND	94.0	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	57.9-139			
Surrogate: Toluene-d8	13.8		"	13.3		104	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2	80.8-120			

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
01/10/12 18:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 2010708 - EPA 5030 Water MS

Matrix Spike (2010708-MS2)

Source: R201029-01 Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	29.1	1.0	ug/l	33.3	ND	87.4	52.7-130		19.3	
Toluene	30.8	1.0	"	33.3	ND	92.4	57-127		18.7	
Ethylbenzene	31.5	1.0	"	33.3	ND	94.4	59.2-127		20	
m,p-Xylene	60.6	2.0	"	66.7	ND	90.9	53.2-132		20	
o-Xylene	30.8	1.0	"	33.3	ND	92.4	56.3-117		20	
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.2		102	57.9-139			
Surrogate: Toluene-d8	13.5		"	13.3		101	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	80.8-120			

Matrix Spike Dup (2010708-MSD1)

Source: R201028-01 Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	29.9	1.0	ug/l	33.3	ND	89.6	52.7-130	5.09	19.3	
Toluene	31.9	1.0	"	33.3	ND	95.7	57-127	5.31	18.7	
Ethylbenzene	31.4	1.0	"	33.3	ND	94.1	59.2-127	3.57	20	
m,p-Xylene	60.0	2.0	"	66.7	ND	90.0	53.2-132	3.10	20	
o-Xylene	30.7	1.0	"	33.3	ND	92.2	56.3-117	1.93	20	
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	57.9-139			
Surrogate: Toluene-d8	13.8		"	13.3		103	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.3	80.8-120			

Matrix Spike Dup (2010708-MSD2)

Source: R201029-01 Prepared: 01/07/12 Analyzed: 01/09/12

Benzene	29.6	1.0	ug/l	33.3	ND	88.8	52.7-130	1.60	19.3	
Toluene	31.2	1.0	"	33.3	ND	93.5	57-127	1.19	18.7	
Ethylbenzene	31.7	1.0	"	33.3	ND	95.2	59.2-127	0.759	20	
m,p-Xylene	60.9	2.0	"	66.7	ND	91.4	53.2-132	0.593	20	
o-Xylene	31.2	1.0	"	33.3	ND	93.6	56.3-117	1.26	20	
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.2		102	57.9-139			
Surrogate: Toluene-d8	13.6		"	13.3		102	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.1	80.8-120			

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: ENC - Ione #4

Project Number: 0334-11049
Project Manager: Daniel Burns

Reported:
01/10/12 18:47

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

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