

GROUNDWATER MONITORING REPORT

JANUARY 2009

STRONG 1, P-21-2, 7, 8, 9, 10J, 16, 1JI, 2JI, 7JI TANK BATTERY

On January 6, 2009, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc. (Noble) at the Strong 1, P-21-2, 7, 8, 9, 10J, 16, 1JI, 2JI, 7JI Tank Battery (Site). This sampling event constitutes the fifth post remediation monitoring event at the Site. Site history, remediation activities, and groundwater monitoring results have been described in preceding reports.

Groundwater level measurements were collected from the monitoring wells and are summarized in Table 1. Monitoring wells (MW01, MW02, MW03 and MW04) were installed surrounding the tank battery excavation on October 3, 2007. A Site Map is presented on Figure 1.

Depth to groundwater, which ranged from 8.28 feet below top of casing (btoc) in MW01 to 9.86 feet btoc in MW04, was used to calculate well-specific purge volumes. Following purging, groundwater samples were collected and preserved on ice. Samples were then submitted under strict chain of custody protocol to Origins Laboratory, Inc. of Denver, Colorado for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency Method 8260B.

Groundwater analytical results indicate BTEX concentrations at monitoring wells MW01, MW02, and MW04 did not exceed the Colorado Groundwater Quality Standards (CGWQS) or the laboratory method detection limits. Monitoring well MW03 exhibited benzene, ethylbenzene, and total xylenes above laboratory method detection limits, but below the CGWQS. Analytical results are summarized in Table 1. The laboratory analytical report is attached as an Appendix.

LTE will continue to conduct quarterly groundwater monitoring events with the goal of observing four consecutive quarters of analytical results in compliance with applicable regulatory standards. The next quarterly groundwater sampling event is scheduled for April 2009.



TABLE



TABLE 1

**GROUNDWATER ANALYTICAL DATA
STRONG 1, P-21-2, 7, 8, 9, 10J, 16, 1JI, 2JI, 7JI TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

MONITORING WELL	DATE	DEPTH TO	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
		WATER (feet btoc)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW01	1/18/2008	8.19	<1.0	<1.0	<1.0	<2.0
	4/17/2008	9.37	<1.0	<1.0	<1.0	<2.0
	7/18/2008	8.11	<1.0	<1.0	<1.0	<3.0
	10/31/2008	7.06	<1.0	<1.0	<1.0	<3.0
	1/6/2009	8.28	<1.0	<1.0	<1.0	<3.0
MW02	1/18/2008	8.50	<1.0	<1.0	<1.0	<2.0
	4/17/2008	9.61	<1.0	<1.0	<1.0	<2.0
	7/18/2008	8.29	<1.0	<1.0	<1.0	<3.0
	10/31/2008	7.40	<1.0	<1.0	<1.0	<3.0
	1/6/2009	8.53	<1.0	<1.0	<1.0	<3.0
MW03	1/18/2008	8.95	<1.0	<1.0	29.3	65.52
	4/17/2008	10.12	<1.0	5.55	<1.0	37.8
	7/18/2008	8.70	181	<1.0	5.54	13.8
	10/31/2008	7.98	5.44	1.29	9.24	35.91
	1/6/2009	9.02	2.59	<1.0	6.71	21.36
MW04	1/18/2008	9.90	<1.0	<1.0	<1.0	<2.0
	4/17/2008	11.13	34.5	5.81	<1.0	18.87
	7/18/2008	9.50	6.94	<1.0	<1.0	<3.0
	10/31/2008	9.04	<1.0	<1.0	<1.0	2.10
	1/6/2009	9.86	<1.0	<1.0	<1.0	<3.0
CGWQS			5.0	1,000	700	1,400

NOTES:

btoc - below top of casing

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

Bold indicates concentration exceeds the CGWQS Standard

CGWQS - Colorado Groundwater Quality Standards

ug/L - micrograms per liter

< Indicates result is less than the stated laboratory method detection limit



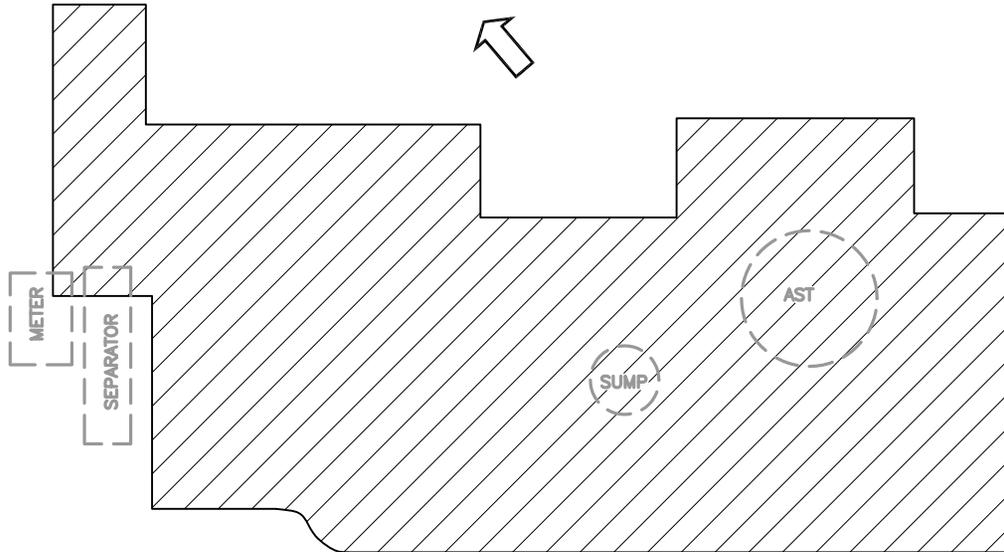
FIGURE



MW04

MW03

MW02



MW01

LEGEND

MW01  MONITORING WELL LOCATION

 EXCAVATION AREA

 ESTIMATED GROUNDWATER FLOW DIRECTION

SOURCE:
LTE SKETCH

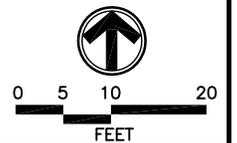


FIGURE 1
MONITORING WELL LOCATION MAP
 STRONG 1, P21-2, 7, 8, 9, 10J, 16, 1JI, 2JI, 7JI
 TANK BATTERY
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.



NEP072203

APPENDIX
ANALYTICAL REPORT





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303.433.1322 Phone 303.265.9645 Fax

January 09, 2009

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

Brian Dodek
Project Number: NEP0722
Project: Noble - Strong 1,P-21...

Attached are the analytical results for Noble - Strong 1,P-21... received by Origins Laboratory, Inc. 1/6/2009 4:01:00PM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle".

Laboratory Manager
Noelle E Doyle

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

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LT Environmental, Inc.
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Brian Dodek
Project Number: NEP0722
Project: Noble - Strong 1,P-21...

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW01	X901010-01	Water	1/6/2009 11:00:00AM	01/06/2009 16:01
MW02	X901010-02	Water	1/6/2009 11:05:00AM	01/06/2009 16:01
MW03	X901010-03	Water	1/6/2009 11:10:00AM	01/06/2009 16:01
MW04	X901010-04	Water	1/6/2009 11:15:00AM	01/06/2009 16:01

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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LT Environmental, Inc.
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MW01
X901010-01 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9A07001	01/07/2009	01/08/2009	
Toluene	ND	0.00100	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	
o-Xylene	ND	0.00100	"	"	"	"	"	
m,p-Xylene	ND	0.00200	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.5 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>83-123</i>			"	"	"

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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 Project: Noble – Strong 1,P-21...

MW02
X901010-02 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9A07001	01/07/2009	01/08/2009	
Toluene	ND	0.00100	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	
o-Xylene	ND	0.00100	"	"	"	"	"	
m,p-Xylene	ND	0.00200	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.9 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>83-123</i>			"	"	"

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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LT Environmental, Inc.
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Brian Dodek
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 Project: Noble – Strong 1,P-21...

MW03
X901010-03 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	0.00259	0.00100	mg/L	1	9A07001	01/07/2009	01/08/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	0.00671	0.00100	"	"	"	"	"
o-Xylene	0.00216	0.00100	"	"	"	"	"
m,p-Xylene	0.0192	0.00200	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>91.7 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.8 %</i>	<i>83-123</i>			"	"	"

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MW04
X901010-04 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9A07001	01/07/2009	01/08/2009	
Toluene	ND	0.00100	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	
o-Xylene	ND	0.00100	"	"	"	"	"	
m,p-Xylene	ND	0.00200	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %	70.3-123			"	"	"
<i>Surrogate: Toluene-d8</i>	103 %	75.9-123			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	106 %	83-123			"	"	"

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Volatile Organic Compounds by EPA Method 8260B – Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9A07001 – EPA 5030B										
Blank (9A07001–BLK1)										
					Prepared: 01/07/2009 Analyzed: 01/08/2009					
Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
o-Xylene	ND	0.001	"							
m,p-Xylene	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	61.5		ug/L	62.5		98.4	70.3-123			
<i>Surrogate: Toluene-d8</i>	62.6		"	62.5		100	75.9-123			
<i>Surrogate: 4-Bromofluorobenzene</i>	67.5		"	62.5		108	83-123			
LCS (9A07001–BS1)										
					Prepared: 01/07/2009 Analyzed: 01/08/2009					
Benzene	0.04	0.001	mg/L	0.0500		84.1	64.2-124			
Toluene	0.04	0.001	"	0.0500		81.9	63.9-119			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	60.4		ug/L	62.5		96.7	70.3-123			
<i>Surrogate: Toluene-d8</i>	62.6		"	62.5		100	75.9-123			
<i>Surrogate: 4-Bromofluorobenzene</i>	63.4		"	62.5		101	83-123			
Matrix Spike (9A07001–MS1)										
					Source: X901009-01		Prepared: 01/07/2009 Analyzed: 01/08/2009			
Benzene	0.05	0.001	mg/L	0.0500	ND	90.4	64.2-124			
Toluene	0.04	0.001	"	0.0500	ND	78.4	63.9-119			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	62.4		ug/L	62.5		99.8	70.3-123			
<i>Surrogate: Toluene-d8</i>	64.6		"	62.5		103	75.9-123			
<i>Surrogate: 4-Bromofluorobenzene</i>	60.5		"	62.5		96.8	83-123			
Matrix Spike Dup (9A07001–MSD1)										
					Source: X901009-01		Prepared: 01/07/2009 Analyzed: 01/08/2009			
Benzene	0.04	0.001	mg/L	0.0500	ND	88.5	64.2-124	2.10	25	
Toluene	0.04	0.001	"	0.0500	ND	76.6	63.9-119	2.30	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	63.2		ug/L	62.5		101	70.3-123			
<i>Surrogate: Toluene-d8</i>	58.8		"	62.5		94.1	75.9-123			
<i>Surrogate: 4-Bromofluorobenzene</i>	61.4		"	62.5		98.2	83-123			

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

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