

**GROUNDWATER MONITORING REPORT AND
NO FURTHER ACTION REQUEST
DECEMBER 2008**

HERMAN L 32-16K WELL SITE

On October 31, 2008, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc. (Noble), at the Herman L 32-16K Tank Battery (Site). This sampling event constitutes the fourth post remediation monitoring event at this site. Site history and remediation activities were described in the preceding remediation and groundwater monitoring reports.

Groundwater level measurements were collected from the monitoring wells and are summarized in Table 1. The monitoring wells (MW01, MW02, and MW03) were installed surrounding the flowline excavation on January 11, 2008. A site map is presented on Figure 1.

Depth to groundwater, which ranged from 4.21 feet below top of casing (btoc) in MW03 to 4.66 feet btoc in MW02, 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.

Analytical results from the monitoring wells, presented in Table 1, indicate BTEX concentrations are below Colorado Groundwater Quality Standard (CGWQS) and laboratory detection limits for all samples. The laboratory analytical report is attached as an Appendix.

This is the fourth consecutive quarterly groundwater monitoring event with groundwater analytical results in compliance with CGWQS. Analytical results indicate that remediation/source removal activities were successful and neither soil nor groundwater impact exist at the Site. Based on this data, the groundwater exposure pathway is now closed.

LTE, on behalf of Noble, respectfully requests a No Further Action condition be granted for the Site.



FIGURE



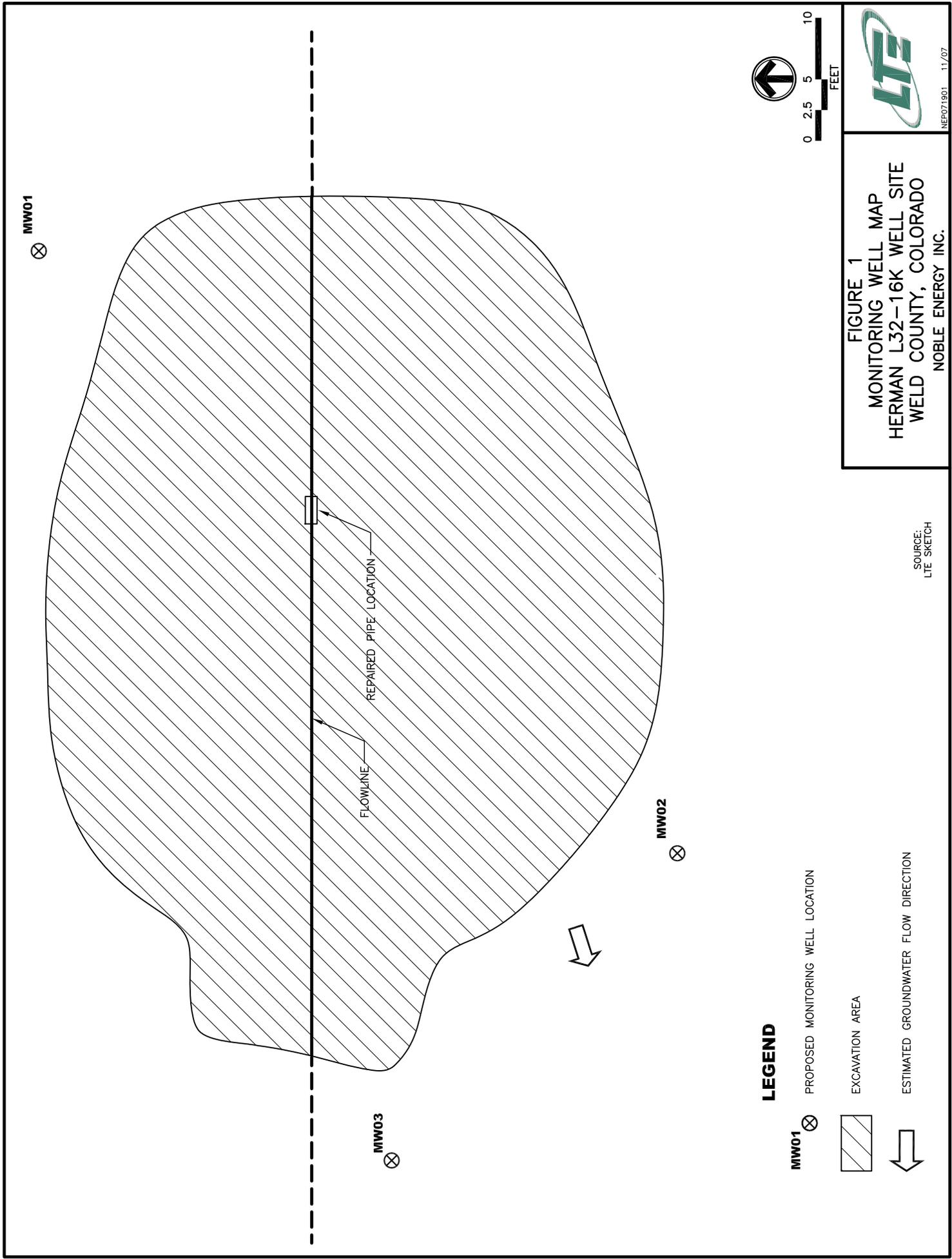


FIGURE 1
MONITORING WELL MAP
HERMAN L32-16K WELL SITE
WELD COUNTY, COLORADO
NOBLE ENERGY INC.

SOURCE:
 LTE SKETCH



LEGEND

- MW01 ⊗ PROPOSED MONITORING WELL LOCATION
-  EXCAVATION AREA
-  ESTIMATED GROUNDWATER FLOW DIRECTION

TABLE



TABLE 1

**GROUNDWATER ANALYTICAL DATA
HERMAN L 32-16K TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

MONITORING WELL	DATE	DEPTH TO				
		WATER (feet btoc)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (ug/L)
MW01	1/18/2008	4.65	<1.0	<1.0	<1.0	<2.0
	4/17/2008	4.77	<1.0	<1.0	<1.0	<2.0
	7/18/2008	4.64	<1.0	<1.0	<1.0	<3.0
	10/31/2008	4.25	<1.0	<1.0	<1.0	<3.0
MW02	1/18/2008	4.95	<1.0	<1.0	<1.0	<2.0
	4/17/2008	5.01	<1.0	<1.0	<1.0	<2.0
	7/18/2008	4.90	<1.0	<1.0	<1.0	<3.0
	10/31/2008	4.66	<1.0	<1.0	<1.0	<3.0
MW03	1/18/2008	5.87	<1.0	<1.0	<1.0	<2.0
	4/17/2008	5.00	<1.0	<1.0	<1.0	<2.0
	7/18/2008	4.77	<1.0	<1.0	<1.0	<3.0
	10/31/2008	4.21	<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 analyzed by EPA Method 8260B

ug/L - micrograms per liter

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

CGWQS - Colorado Groundwater Quality Standards



APPENDIX
ANALYTICAL REPORT





4640 Pecos Street | Unit C | Denver, Colorado 80211
303.433.1322 Phone 303.265.9645 Fax

November 04, 2008

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

Brian Dodek
Project Number: NEP0719
Project: Herman L32-16K

Attached are the analytical results for Herman L32-16K received by Origins Laboratory, Inc. 10/31/2008 3:45:00PM. 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.
4600 West 60th Avenue
Arvada CO 80003

Brian Dodek
Project Number: NEP0719
Project: Herman L32-16K

CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
MW01	X810106-01	Water	10/31/2008 1:06:00PM	10/31/2008 15:45
MW02	X810106-02	Water	10/31/2008 12:54:00PM	10/31/2008 15:45
MW03	X810106-03	Water	10/31/2008 12:41:00PM	10/31/2008 15:45

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



LT Environmental, Inc.
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Brian Dodek
 Project Number: NEP0719
 Project: Herman L32-16K

X810106
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originslaboratory.com

Client: LT E
 Address: 4600 W 60th Ave
Arvada, CO 80003
 Telephone Number: DNF/LE
 E-Mail Address:
 Project Manager: BDD
 Project Name: Herman L32-16k
 Project Number: NEP0719
 Samples Collected by: TEJ

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other - HCF	Soil	Groundwater	Air - Summa Canister #			Other
MW01	10/3/08	13:06	3	X	X	X	X	X	X	X	X		1
MW02	10/3/08	17:54	1	X	X	X	X	X	X	X	X		2
MW03	10/3/08	12:41	1	X	X	X	X	X	X	X	X		3
													4
													5
													6
													7
													8
													9
													10
Relinquished by: <u>TEJ</u>	Date: <u>10/3/08</u>	Time: <u>15:45</u>	Received by: <u>[Signature]</u>	Date: <u>10/3/08</u>	Time: <u>15:45</u>	Temperature: <u>40</u>	Uppercase: <u>40</u>	Lowercase: <u>40</u>					
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Turn Around Time:							
						Same Day	24 hr						
						48 hr	72 hr						
						Standard							

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Origins Laboratory, Inc.

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Brian Dodek
Project Number: NEP0719
Project: Herman L32-16K

MW01
X810106-01 (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	8K03001	11/03/2008	11/03/2008
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>108 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>89.5 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>	<i>83-123</i>			"	"	"

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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MW02
X810106-02 (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	8K03001	11/03/2008	11/04/2008	
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>89.2 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>89.2 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>111 %</i>	<i>83-123</i>			"	"	"

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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 Project: Herman L32-16K

MW03
X810106-03 (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	8K03001	11/03/2008	11/04/2008	
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>107 %</i>	<i>70.3-123</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>89.6 %</i>	<i>75.9-123</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>83-123</i>			"	"	"

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Noelle E Doyle, Laboratory Manager



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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
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Batch 8K03001 – EPA 5030B

Blank (8K03001-BLK1)

Prepared: 11/03/2008 Analyzed: 11/03/2008

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	"							

Surrogate: 1,2-Dichloroethane-d4	67.0		ug/L	62.5		107	70.3-123			
Surrogate: Toluene-d8	55.9		"	62.5		89.4	75.9-123			
Surrogate: 4-Bromofluorobenzene	67.2		"	62.5		107	83-123			

LCS (8K03001-BS1)

Prepared: 11/03/2008 Analyzed: 11/03/2008

Benzene	0.05	0.001	mg/L	0.0500		101	64.2-124			
Toluene	0.05	0.001	"	0.0500		94.5	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	68.4		ug/L	62.5		109	70.3-123			
Surrogate: Toluene-d8	55.0		"	62.5		88.0	75.9-123			
Surrogate: 4-Bromofluorobenzene	65.6		"	62.5		105	83-123			

Matrix Spike (8K03001-MS1)

Source: X810104-02

Prepared: 11/03/2008 Analyzed: 11/03/2008

Benzene	0.05	0.001	mg/L	0.0500	ND	102	64.2-124			
Toluene	0.05	0.001	"	0.0500	0.0007	96.0	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	68.0		ug/L	62.5		109	70.3-123			
Surrogate: Toluene-d8	56.2		"	62.5		90.0	75.9-123			
Surrogate: 4-Bromofluorobenzene	66.8		"	62.5		107	83-123			

Matrix Spike Dup (8K03001-MSD1)

Source: X810104-02

Prepared: 11/03/2008 Analyzed: 11/03/2008

Benzene	0.05	0.001	mg/L	0.0500	ND	100	64.2-124	1.49	25	
Toluene	0.05	0.001	"	0.0500	0.0007	93.7	63.9-119	2.43	25	
Surrogate: 1,2-Dichloroethane-d4	68.5		ug/L	62.5		110	70.3-123			
Surrogate: Toluene-d8	56.2		"	62.5		89.9	75.9-123			
Surrogate: 4-Bromofluorobenzene	66.1		"	62.5		106	83-123			

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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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