



GROUNDWATER MONITORING REPORT MAY 2009

RICE #1

On May 13, 2009, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc. (Noble) at the Rice #1 Tank Battery (Site). This sampling event constitutes the third 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, and MW03) were installed surrounding the tank battery excavation on October 29, 2008. A Site Map is presented on Figure 1.

Depth to groundwater, which ranged from 12.28 feet below top of casing (btoc) in MW01 to 14.98 feet btoc in MW03, 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 MW03 were in compliance with the Colorado Department of Public Health and Environment Water Quality Control Commission Regulation 41 (WQCC Reg 41). 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 WQCC Reg 41. The next quarterly groundwater sampling event is scheduled for August 2009.



TABLE



TABLE 1

**GROUNDWATER ANALYTICAL DATA
RICE #1 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

MONITORING		DEPTH TO				
WELL	DATE	WATER (feet btoc)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (ug/L)
MW01	11/5/2008	11.48	<1.0	<1.0	2.96	8.92
	2/6/2009	13.55	<1.0	<1.0	3.59	4.58
	5/13/2009	12.28	<1.0	<1.0	<1.0	<3.0
MW02	11/5/2008	12.03	<1.0	<1.0	5.79	52.27
	2/6/2009	13.95	<1.0	<1.0	12.6	16.1
	5/13/2009	13.38	<1.0	<1.0	8.81	12.7
MW03	11/5/2008			Well Dry		
	2/6/2009	14.05	4.06	1.74	1.63	15.12
	5/13/2009	14.98	1.81	<1.0	<1.0	2.89
CDPHE WQCC Reg 41			5.0	560	700	1,400

NOTES:

btoc - below top of casing

ug/L - micrograms per liter

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

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment - Water Quality Control
Commission Regulation 41 covering Basic Standards for Groundwater

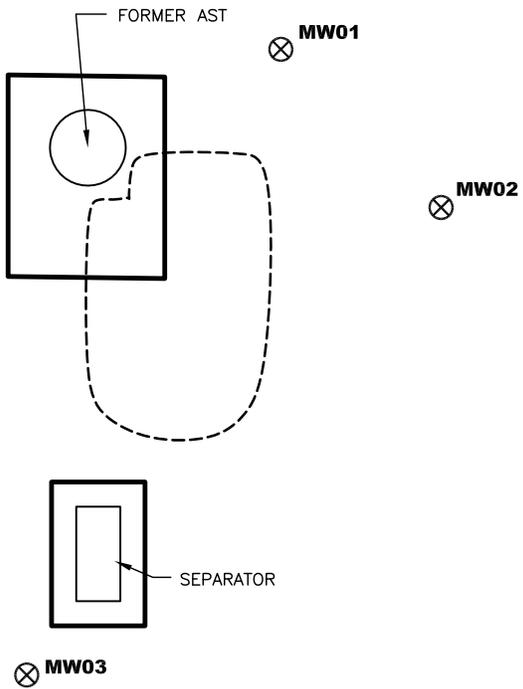
Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B



FIGURE



COUNTY ROAD 13



LEGEND

- MW01 ⊗ MONITORING WELL LOCATION
- M METER HOUSE
- BERM
- - - - - EXTENT OF EXCAVATION
- ➔ ESTIMATED GROUNDWATER FLOW DIRECTION
- AST ABOVEGROUND STORAGE TANK

SOURCE:
GOOGLEMAP.COM

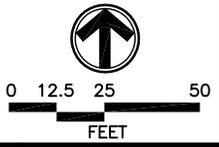


FIGURE 1
SITE MAP
RICE #1 TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



APPENDIX
ANALYTICAL REPORT





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

May 19, 2009

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

Brian Dodek
Project Number: NEP0834
Project: Noble - Rice 1

Attached are the analytical results for Noble - Rice 1 received by Origins Laboratory, Inc. 5/13/2009 1:33:00PM. 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".

Noelle E Doyle
Laboratory Manager

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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Denver, Colorado 80211
303.433.1322 | Laboratory
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LT Environmental, Inc.
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Arvada CO 80003

Brian Dodek
Project Number: NEP0834
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CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW01	X905050-01	Water	5/13/2009 12:10:00PM	05/13/2009 13:33
MW02	X905050-02	Water	5/13/2009 12:15:00PM	05/13/2009 13:33
MW03	X905050-03	Water	5/13/2009 12:20:00PM	05/13/2009 13:33

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

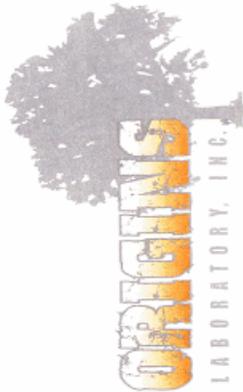


LT Environmental, Inc.
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 Arvada CO 80003

Brian Dodek
 Project Number: NEP0834
 Project: Noble - Rice 1

X905050

page ___ of ___



originslaboratory.com

Client: LTE
 Address: _____
 Telephone Number: ON FILE
 E-Mail Address: _____

Project Manager: BDD
 Project Name: Rice #1
 Project Number: NEP0834
 Samples Collected by: TED

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis		Sample Instructions				
				Unpreserved	HCl	HNO ₃	Other - ICE	Groundwater	Soil	Air - Summa Canister #	Other -						
MW01	5/13/09	12:10	3														
MW02		12:15	1														
MW03		12:20	1														
																	
Relinquished by: <u>SED</u>	Date: <u>5/13/09</u>	Time: <u>1333</u>	Received by: <u>[Signature]</u>		Date: <u>5/13/09</u>	Time: <u>1333</u>	Temperature Upon Receipt:										
Relinquished by:	Date:	Time:	Received by:		Date:	Time:	Turn Around Time:										
							Same Day										
							48-hr										
							Standard										
							72-hr										

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MW01
X905050-01 (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	9E15003	05/15/2009	05/19/2009	
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>109 %</i>	<i>70.3-128</i>			"	"	"
<i>Surrogate: Toluene-d8</i>	<i>93.8 %</i>	<i>78.8-125</i>			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.6 %</i>	<i>75.5-131</i>			"	"	"

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MW02
X905050-02 (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	9E15003	05/15/2009	05/19/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	0.00881	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	0.0127	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	112 %	70.3-128			"	"	"
Surrogate: Toluene-d8	95.8 %	78.8-125			"	"	"
Surrogate: 4-Bromofluorobenzene	99.1 %	75.5-131			"	"	"

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MW03
X905050-03 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	0.00181	0.00100	mg/L	1	9E15003	05/15/2009	05/19/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	0.00289	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	114 %	70.3-128			"	"	"
Surrogate: Toluene-d8	96.9 %	78.8-125			"	"	"
Surrogate: 4-Bromofluorobenzene	99.1 %	75.5-131			"	"	"

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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 9E15003 – EPA 5030B

Blank (9E15003-BLK1)

Prepared: 05/15/2009 Analyzed: 05/18/2009

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	"							

Surrogate: 1,2-Dichloroethane-d4	63.8		ug/L	62.5		102	70.3-128			
Surrogate: Toluene-d8	62.4		"	62.5		99.8	78.8-125			
Surrogate: 4-Bromofluorobenzene	65.0		"	62.5		104	75.5-131			

LCS (9E15003-BS1)

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.06	0.001	mg/L	0.0500		110	64.2-124			
Toluene	0.05	0.001	"	0.0500		108	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	64.6		ug/L	62.5		103	70.3-128			
Surrogate: Toluene-d8	64.2		"	62.5		103	78.8-125			
Surrogate: 4-Bromofluorobenzene	60.4		"	62.5		96.7	75.5-131			

Matrix Spike (9E15003-MS1)

Source: X905049-02

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	112	64.2-124			
Toluene	0.05	0.001	"	0.0500	ND	110	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	64.2		ug/L	62.5		103	70.3-128			
Surrogate: Toluene-d8	64.1		"	62.5		103	78.8-125			
Surrogate: 4-Bromofluorobenzene	61.4		"	62.5		98.3	75.5-131			

Matrix Spike Dup (9E15003-MSD1)

Source: X905049-02

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.05	0.001	mg/L	0.0500	ND	106	64.2-124	5.47	25	
Toluene	0.05	0.001	"	0.0500	ND	98.8	63.9-119	10.6	25	
Surrogate: 1,2-Dichloroethane-d4	60.1		ug/L	62.5		96.2	70.3-128			
Surrogate: Toluene-d8	63.6		"	62.5		102	78.8-125			
Surrogate: 4-Bromofluorobenzene	59.5		"	62.5		95.1	75.5-131			

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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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