

GROUNDWATER MONITORING REPORT

FEBRUARY 2009

NORTH STAR VV 15-13 TANK BATTERY AND GIRARD RED VV 15-12, 13, 14, 3D TANK BATTERY

At the request of Noble Energy, Inc. (Noble), LT Environmental, Inc. (LTE) personnel were onsite on February 6 and 11, 2009 to conduct performance monitoring at the above-referenced site (Figure 1). Site assessment, remediation activities, monitoring well installation, and performance monitoring activities have been described in preceding reports.

This groundwater monitoring report summarizes the sixth post-remediation monitoring event at the Site following Phase I of the remediation program. Phase I of the remediation program utilized injection technology and was conducted in October and November of 2007. Subsequent groundwater monitoring events indicated a small area of recalcitrant groundwater impact remained at the site. Noble decided to implement a second phase of remediation to mitigate the impacted groundwater. Phase II of the remediation program, conducted in October 2008, included source removal and the application of a groundwater amendment. The February 2009 monitoring event constitutes the second post-remediation groundwater monitoring event.

Groundwater sampling was conducted on February 6, 2009 at monitoring well SB-9R. Monitoring wells SB-12, SB-13, SB-21, and SB-23 were not sampled on this date due to insufficient volume to purge and sample. LTE personnel were also unable to sample monitoring wells SB-4, SB-5, SB-6, SB-11R, and SB-22 as the wells were dry. On February 11, 2009, LTE collected samples from monitoring wells SB-12, SB-13, SB-21, and SB-23. These wells were not purged due to the insufficient recharge rates observed on February 6, 2009. Figure 2 illustrates the locations of the monitoring wells.

Depth to groundwater was measured at each monitoring well to calculate well specific purge volumes. Table 1 summarizes the depth to water measurements. After purge volumes were calculated, each well was purged prior to collecting groundwater samples. The samples were sent under strict chain of custody protocol to Origins Laboratory, Inc. of Denver, Colorado for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by the United States Environmental Protection Agency Method 8260B.

Analytical results from the monitoring wells, presented in Table 1 and on Figure 2, indicate all samples analyzed for BTEX are below regulatory limits and laboratory method detection limits. Therefore, the Site is currently in compliance with applicable regulatory standards. The laboratory analytical reports are included as an attachment.

The next quarterly groundwater sampling event is scheduled for May 2009. LTE, on behalf of Noble, will continue to conduct quarterly groundwater monitoring events with the goal of observing four consecutive quarters of groundwater data in compliance with Colorado Groundwater Quality Standards. Once this has been achieved, a No Further Action request will be drafted and sent to the Colorado Oil and Gas Conservation Commission.

TABLE

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA
NORTH STAR VV 15-13 TANK BATTERY AND GIRARD RED VV 15-12, 13, 14, 3D TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

MONITORING WELL	DATE	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Relative Feet)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (ug/L)
SB-1	5/31/2007	9.44	90.53	<1.0	<2.0	<2.0	<6.0
	11/28/2007	10.73	89.24	<1.0	<1.0	<1.0	<2.0
SB-2	5/31/2007	7.72	90.49	120	<2.0	<2.0	<6.0
	11/28/2007	NM	NA	DESTROYED			
SB-3	5/31/2007	7.36	91.02	1.3	<2.0	<2.0	<6.0
	11/28/2007	NM	NA	DESTROYED			
SB-3R	3/19/2008	12.45	NA	<1.0	<1.0	<1.0	<2.0
SB-4	5/31/2007	9.38	90.50	<1.0	<2.0	<2.0	<6.0
	11/28/2007	11.56	88.32	<1.0	<1.0	<1.0	<2.0
	2/28/2008	11.63	88.25	<1.0	1.71	<1.0	<2.0
	5/21/2008	9.73	90.15	<1.0	<1.0	<1.0	<2.0
	8/19/2008	11.50	88.38	<1.0	<1.0	<1.0	<3.0
	11/11/2008	13.09	86.79	<1.0	<1.0	<1.0	<3.0
	2/6/2009	NM	NA	DRY			
SB-5	5/31/2007	10.14	89.99	160	<10	59	310
	11/28/2007	12.18	87.95	<1.0	<1.0	<1.0	<2.0
	2/28/2008	12.58	87.55	<1.0	<1.0	<1.0	<2.0
	5/21/2008	10.79	89.34	<1.0	<1.0	<1.0	<2.0
	8/19/2008	12.39	87.74	INSUFFICIENT WATER TO SAMPLE			
	11/11/2008	13.14	86.99	WELL DAMAGED, UNABLE TO SAMPLE			
	2/6/2009	NM	NA	DRY			
SB-6	5/31/2007	11.46	89.71	9.6	<4.0	100	1160
	11/28/2007	13.55	87.62	<1.0	<1.0	<1.0	<2.0
	2/28/2008	14.08	87.09	<1.0	<1.0	<1.0	<2.0
	5/21/2008	12.07	89.10	<1.0	<1.0	<1.0	<2.0
	8/19/2008	13.98	87.19	<1.0	<1.0	<1.0	<3.0
	11/11/2008	14.90	86.27	<1.0	<1.0	<1.0	<3.0
	2/6/2009	NM	NA	DRY			
SB-7	5/31/2007	10.47	88.82	<1.0	<2.0	<2.0	<6.0
	11/28/2007	11.60	87.69	<1.0	<1.0	<1.0	<2.0
SB-8	5/31/2007	10.72	90.05	<1.0	<2.0	<2.0	7.8



TABLE 1 (continued)
GROUNDWATER ELEVATION AND ANALYTICAL DATA
NORTH STAR VV 15-13 TANK BATTERY AND GIRARD RED VV 15-12, 13, 14, 3D TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

MONITORING		DEPTH TO	GROUNDWATER				
WELL	DATE	WATER	ELEVATION	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
(Feet)		(Relative Feet)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
SB-9	5/31/2007	10.00	89.70	<1.0	<2.0	<2.0	<6.0
	11/28/2007	11.33	88.37	<1.0	<1.0	<1.0	<2.0
	2/28/2008	11.85	87.85	<1.0	1.45	<1.0	<2.0
	5/21/2008	10.90	88.80	<1.0	<1.0	<1.0	<2.0
	8/19/2008	11.89	87.81	9.74	<1.0	<1.0	<3.0
SB-9R	11/11/2008	15.33	NA	<1.0	<1.0	<1.0	<3.0
	2/6/2009	16.73	NA	<1.0	<1.0	<1.0	<3.0
SB-10	6/4/2007	10.91	89.64	<1.0	<1.0	<1.0	<6.0
SB-11	6/4/2007	11.41	89.22	10	<2.0	9.6	67.7
	11/28/2007	12.60	88.03	100	<1.0	<1.0	<2.0
	2/28/2008	13.11	87.52	93.9	<1.0	<1.0	5.86
	5/21/2008	12.84	87.79	37.4	<1.0	<1.0	8.06
	8/19/2008	12.85	87.78	177	<1.0	14.3	154.1
SB-11R	11/25/2008	16.65	NA	2.63	<1.0	<1.0	37.9
	2/6/2009	NM	NA		DRY		
SB-12	6/4/2007	11.53	89.08	<1.0	<2.0	<2.0	<6.0
	11/28/2007	12.52	88.09	<1.0	<1.0	<1.0	<2.0
	2/28/2008	13.04	87.57	<1.0	1.32	<1.0	<2.0
	5/21/2008	12.60	88.01	<1.0	<1.0	<1.0	<2.0
	8/19/2008	12.19	88.42	<1.0	<1.0	<1.0	<3.0
	11/11/2008	14.31	86.30	<1.0	<1.0	<1.0	<3.0
	2/11/2009	14.82	85.79	<1.0	<1.0	<1.0	<3.0
SB-13	6/4/2007	11.19	88.43	<1.0	<2.0	3.8	39.8
	11/28/2007	12.31	87.31	<1.0	<1.0	<1.0	<2.0
	2/28/2008	12.84	86.78	<1.0	<1.0	<1.0	<2.0
	5/21/2008	12.30	87.32	<1.0	<1.0	<1.0	<2.0
	8/19/2008	12.90	86.72	<1.0	<1.0	<1.0	<3.0
	11/11/2008	14.10	85.52	<1.0	<1.0	<1.0	<3.0
	2/11/2009	14.23	85.39	<1.0	<1.0	<1.0	<3.0
SB-14	6/4/2007	12.07	88.09	<1.0	<2.0	<2.0	<6.0
SB-15	6/6/2007	13.35	87.71	<1.0	<2.0	<2.0	<6.0
	11/28/2007	14.50	86.56	<1.0	<1.0	<1.0	<2.0



TABLE 1 (continued)
GROUNDWATER ELEVATION AND ANALYTICAL DATA
NORTH STAR VV 15-13 TANK BATTERY AND GIRARD RED VV 15-12, 13, 14, 3D TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

MONITORING		DEPTH TO	GROUNDWATER				
WELL	DATE	WATER	ELEVATION	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
(Feet)		(Relative Feet)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
SB-16	6/6/2007	13.11	88.18	<1.0	<2.0	<2.0	<6.0
SB-17	6/6/2007	12.10	87.67	<1.0	<2.0	<2.0	<6.0
	11/28/2007	13.25	86.52	<1.0	<1.0	<1.0	<2.0
SB-18	6/6/2007	12.83	87.17	<1.0	<2.0	<2.0	<6.0
SB-19	6/6/2007	11.79	87.21	<1.0	<2.0	<2.0	<6.0
SB-20	6/6/2007	12.08	87.56	<1.0	<2.0	<2.0	<6.0
	11/28/2007	13.35	86.29	<1.0	<1.0	<1.0	<2.0
SB-21	6/6/2007	10.42	90.36	<1.0	<2.0	<2.0	<6.0
	11/28/2007	13.00	87.78	<1.0	<1.0	<1.0	<2.0
	2/28/2008	13.51	87.27	<1.0	1.34	<1.0	<2.0
	5/21/2008*	8.22	92.56	<1.0	<1.0	<1.0	<2.0
	8/19/2008*	10.97	89.81	<1.0	<1.0	<1.0	<3.0
	11/11/2008*	12.41	88.37	<1.0	<1.0	<1.0	<3.0
	2/11/2009	12.97	87.81	<1.0	<1.0	<1.0	<3.0
SB-22	6/6/2007	12.14	89.42	910	<20	54	260
	11/28/2007	13.53	88.03	<1.0	<1.0	<1.0	<2.0
	2/28/2008	14.08	87.48	<1.0	<1.0	<1.0	<2.0
	5/21/2008	13.56	88.00	<1.0	<1.0	<1.0	<2.0
	8/19/2008	14.08	87.48	<1.0	<1.0	<1.0	<3.0
	11/11/2008	14.88	86.68	<1.0	<1.0	<1.0	<3.0
	2/6/2009	NM	NA			DRY	
SB-23	11/28/2007	13.02	NA	<1.0	<1.0	<1.0	<2.0
	2/28/2008	13.56	NA	<1.0	1.16	<1.0	<2.0
	5/21/2008	12.53	NA	<1.0	<1.0	<1.0	<2.0
	8/19/2008	13.52	NA	<1.0	<1.0	<1.0	<3.0
	11/11/2008	14.82	NA	<1.0	<1.0	<1.0	<3.0
	2/11/2009	15.35	NA	<1.0	<1.0	<1.0	<3.0
SB-24	11/28/2007	13.75	NA	<1.0	<1.0	<1.0	<2.0
CGWQS				5.0	1,000	700	1,400

NOTES:

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

* - Well stickup was broken off, therefore depth to water and total depth measurements are slightly different

Bold indicates concentration exceeds the CGWQS Standard

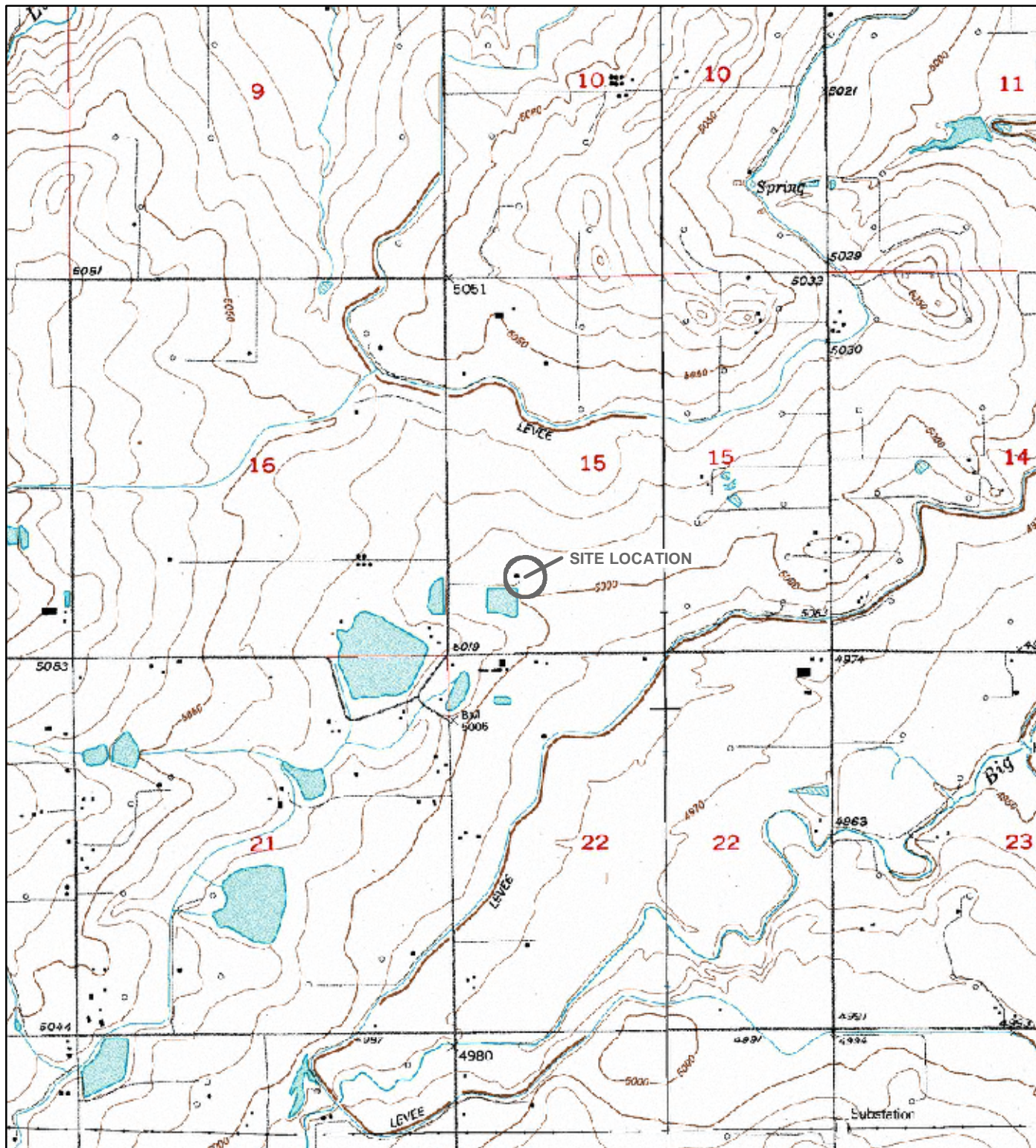
NM - not measured

NA - not applicable

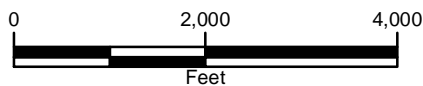
CGWQS - Colorado Groundwater Quality Standards



FIGURES



Map Source: USGS/NRCS

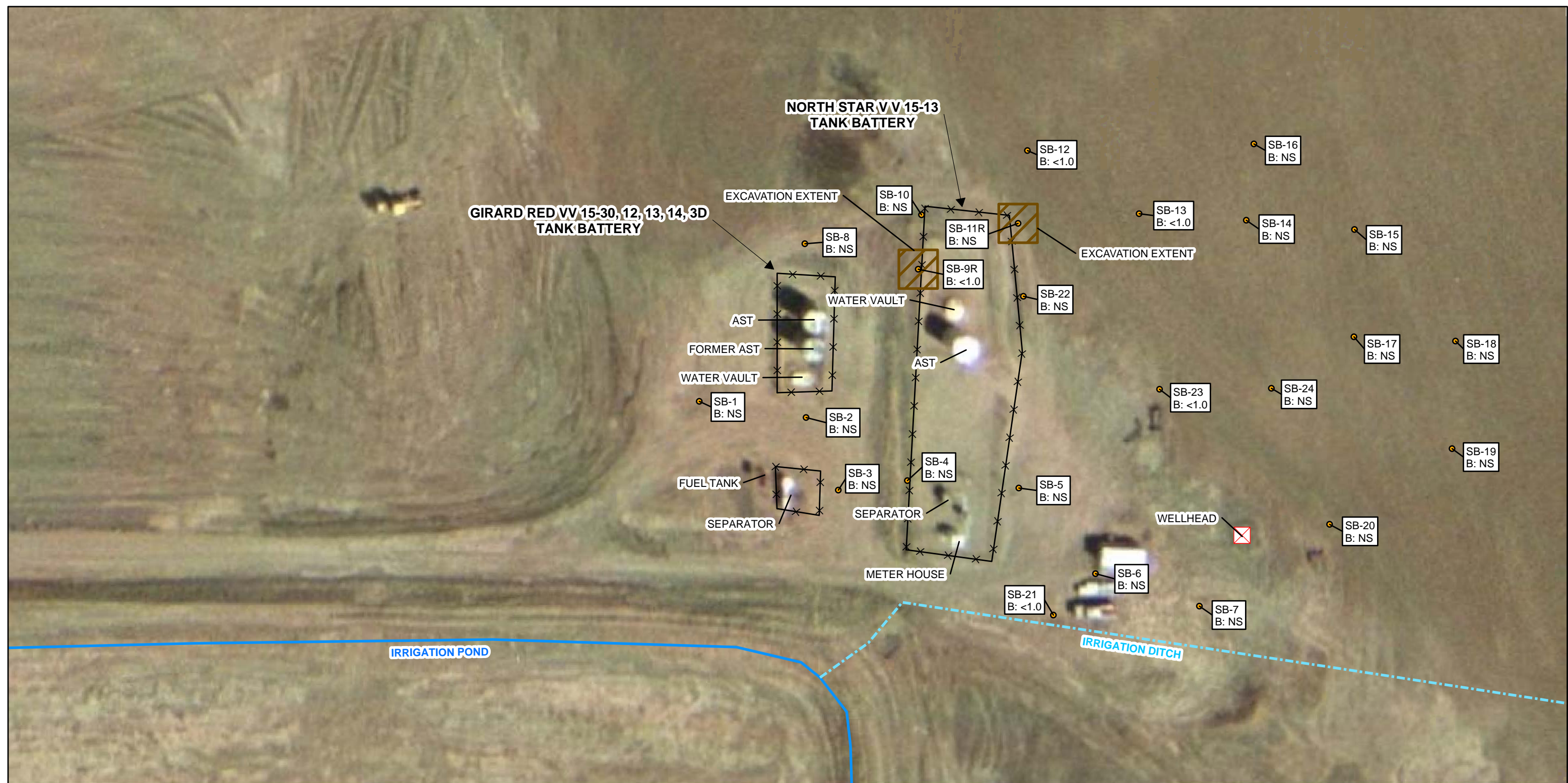


LEGEND

○ SITE LOCATION

FIGURE 1
 SITE LOCATION MAP
 NORTH STAR V V 15-13 AND
 GIRARD RED V V 15-12, 13, 14, 3D TANK BATTERIES
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.





ATTACHMENT
ANALYTICAL REPORTS





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

February 23, 2009

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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

Attached are the analytical results for Noble – North Star received by Origins Laboratory, Inc. 2/6/2009 3:20:00PM. Please let us know if you have any questions, or if we can help with anything at all.

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.

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



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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW09	X902020-01	Water	2/6/2009 10:45:00AM	02/06/2009 15:20

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

X402080

page 1 of 1



originslaboratory.com

Client: LTE Project Manager: BDD
Address: 4600 W 60th Project Name: N. North Star
Arvada 80003 Project Number: NEP0713
Telephone Number: ON FILE Samples Collected by: TED
E-Mail Address: _____

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers				Preservative				Matrix				Analysis		Sample Instructions	
			Unpreserved	HCl	HNO ₃	Other - HCl	Groundwater	Soil	Air - Summa Canister #	Other -	ASTEX 8260	Analysis						
MW-01	2/6/09	10:45	X				X										1 Please	
MW-02	2/6/09	10:55	X				X										2 filtered	
																	3 before	
																	4 testing	
																	5	
																	6	
																	7	
																	8	
																	9	
																	10	
Relinquished by: <u>STG</u>	Date: <u>2/6/09</u>	Time: <u>15:20</u>	Received by: _____				Received by: <u>STG</u>				Received by: _____				Temperature Upon Receipt: <u>28°C</u>		Turn Around Time: <u>24-hr</u>	
Relinquished by: _____	Date: _____	Time: _____	Received by: _____				Received by: _____				Received by: _____				Temperature Upon Receipt: _____		Turn Around Time: <u>72-hr</u>	

4640 North Pecos Street | Unit C | Denver, Colorado 80211 | Laboratory - 303.433.1322 | Fax - 303.265.9645

Origins Laboratory, Inc.

Noelle E Doyle

Noelle E Doyle, Laboratory Manager

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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

MW09

X902020-01 (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	9B09001	02/09/2009	02/09/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	105 %	70.3-123	"	"	"
Surrogate: Toluene-d8	86.7 %	75.9-123	"	"	"
Surrogate: 4-Bromofluorobenzene	105 %	83-123	"	"	"

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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4600 West 60th Avenue
Arvada CO 80003

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

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 9B09001 – EPA 5030B

Blank (9B09001–BLK1)

Prepared: 02/09/2009 Analyzed: 02/09/2009

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	67.4	ug/L	62.5	108	70.3–123
Surrogate: Toluene-d8	54.6	"	62.5	87.4	75.9–123
Surrogate: 4-Bromofluorobenzene	64.7	"	62.5	104	83–123

LCS (9B09001–BS1)

Prepared: 02/09/2009 Analyzed: 02/09/2009

Benzene	0.05	0.001	mg/L	0.0500	109	64.2–124
Toluene	0.05	0.001	"	0.0500	96.3	63.9–119
Surrogate: 1,2-Dichloroethane-d4	65.3		ug/L	62.5	104	70.3–123
Surrogate: Toluene-d8	54.8		"	62.5	87.7	75.9–123
Surrogate: 4-Bromofluorobenzene	66.4		"	62.5	106	83–123

Matrix Spike (9B09001–MS1)

Source: X902021–02

Prepared: 02/09/2009 Analyzed: 02/09/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	115	64.2–124
Toluene	0.05	0.001	"	0.0500	ND	103	63.9–119
Surrogate: 1,2-Dichloroethane-d4	65.6		ug/L	62.5		105	70.3–123
Surrogate: Toluene-d8	55.1		"	62.5		88.2	75.9–123
Surrogate: 4-Bromofluorobenzene	64.6		"	62.5		103	83–123

Matrix Spike Dup (9B09001–MSD1)

Source: X902021–02

Prepared: 02/09/2009 Analyzed: 02/09/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	113	64.2–124	2.44	25
Toluene	0.05	0.001	"	0.0500	ND	95.4	63.9–119	7.53	25
Surrogate: 1,2-Dichloroethane-d4	65.8		ug/L	62.5		105	70.3–123		
Surrogate: Toluene-d8	53.6		"	62.5		85.8	75.9–123		
Surrogate: 4-Bromofluorobenzene	63.9		"	62.5		102	83–123		

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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.

4640 Pecos Street | Unit C
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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

February 13, 2009

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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

Attached are the analytical results for Noble – North Star received by Origins Laboratory, Inc. 2/11/2009 2:05:00PM. Please let us know if you have any questions, or if we can help with anything at all.

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: NEP0713.04
Project: Noble – North Star

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW12	X902034-01	Water	2/11/2009 11:05:00AM	02/11/2009 14:05
MW13	X902034-02	Water	2/11/2009 11:10:00AM	02/11/2009 14:05
MW21	X902034-03	Water	2/11/2009 11:20:00AM	02/11/2009 14:05
MW23	X902034-04	Water	2/11/2009 11:15:00AM	02/11/2009 14:05

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

X402034
page 1 of 1



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Client: LTE
Address: 4600 W 60th
Arvada 80003
Telephone Number: ON FILE
E-Mail Address: ON FILE
Project Manager: BDD
Project Name: North Star
Project Number: NEP0713
Samples Collected by: TE

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other - <u>ACE</u>	Soil	Groundwater	Air - Summa Canister #		
MV12	2/11/09	1105	1	X				X			X	1
MV13	2/11/09	1110	1	X				X			X	2
MV21	2/11/09	1120	3	X				X			X	3
MV23	2/11/09	1113	3	X				X			X	4
												5
												6
												7
												8
												9
												10
Relinquished by: <u>SE-OC</u>	Date: <u>2/11/09</u>	Time: <u>2:14:05</u>	Time: <u>2:14:05</u>	Received by: <u>[Signature]</u>	Date: <u>2/11/09</u>	Time: <u>14:05</u>	Temperature Upon Receipt: <u>3.2C</u>	Turn Around Time: <u>24 hr</u>	Same Day: <u></u>	48 hr: <u></u>	72 hr: <u>X</u>	
Relinquished by: <u>[Signature]</u>	Date: <u>2/11/09</u>	Time: <u>14:05</u>	Time: <u>14:05</u>	Received by: <u>[Signature]</u>	Date: <u>2/11/09</u>	Time: <u>14:05</u>						

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Noelle E Doyle

Noelle E Doyle, Laboratory Manager

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Arvada CO 80003

Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

MW12

X902034-01 (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	9B11003	02/11/2009	02/12/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	116 %	70.3-123	"	"	"
Surrogate: Toluene-d8	79.5 %	75.9-123	"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	83-123	"	"	"

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Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

MW13

X902034-02 (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	9B11003	02/11/2009	02/12/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	115 %	70.3-123	"	"	"
Surrogate: Toluene-d8	80.6 %	75.9-123	"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	83-123	"	"	"

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Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

MW21

X902034-03 (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	9B11003	02/11/2009	02/12/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	114 %	70.3-123	"	"	"
Surrogate: Toluene-d8	79.9 %	75.9-123	"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	83-123	"	"	"

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Brian Dodek
Project Number: NEP0713.04
Project: Noble – North Star

MW23

X902034-04 (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	9B11003	02/11/2009	02/12/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	117 %	70.3-123	"	"	"
Surrogate: Toluene-d8	78.1 %	75.9-123	"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	83-123	"	"	"

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 Project Number: NEP0713.04
 Project: Noble – North Star

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 9B11003 – EPA 5030B

Blank (9B11003-BLK1)

Prepared: 02/11/2009 Analyzed: 02/11/2009

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	65.3		ug/L	62.5		104	70.3-123			
Surrogate: Toluene-d8	53.4		"	62.5		85.5	75.9-123			
Surrogate: 4-Bromofluorobenzene	66.0		"	62.5		106	83-123			

Blank (9B11003-BLK2)

Prepared: 02/11/2009 Analyzed: 02/11/2009

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	66.1		ug/L	62.5		106	70.3-123			
Surrogate: Toluene-d8	53.3		"	62.5		85.2	75.9-123			
Surrogate: 4-Bromofluorobenzene	66.8		"	62.5		107	83-123			

LCS (9B11003-BS1)

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500		114	64.2-124			
Toluene	0.05	0.001	"	0.0500		94.0	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	66.7		ug/L	62.5		107	70.3-123			
Surrogate: Toluene-d8	53.0		"	62.5		84.8	75.9-123			
Surrogate: 4-Bromofluorobenzene	64.4		"	62.5		103	83-123			

LCS (9B11003-BS2)

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500		116	64.2-124			
Toluene	0.05	0.001	"	0.0500		96.4	63.9-119			

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Brian Dodek
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 Project: Noble – North Star

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 9B11003 – EPA 5030B

LCS (9B11003–BS2)

Prepared: 02/11/2009 Analyzed: 02/11/2009

Surrogate: 1,2-Dichloroethane-d4	66.1		ug/L	62.5		106	70.3–123			
Surrogate: Toluene-d8	52.8		"	62.5		84.4	75.9–123			
Surrogate: 4-Bromofluorobenzene	65.5		"	62.5		105	83–123			

Matrix Spike (9B11003–MS1)

Source: X902029–01

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	114	64.2–124			
Toluene	0.05	0.001	"	0.0500	ND	94.8	63.9–119			
Surrogate: 1,2-Dichloroethane-d4	67.8		ug/L	62.5		109	70.3–123			
Surrogate: Toluene-d8	51.7		"	62.5		82.8	75.9–123			
Surrogate: 4-Bromofluorobenzene	65.6		"	62.5		105	83–123			

Matrix Spike (9B11003–MS2)

Source: X902031–01

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	117	64.2–124			
Toluene	0.05	0.001	"	0.0500	ND	97.1	63.9–119			
Surrogate: 1,2-Dichloroethane-d4	67.7		ug/L	62.5		108	70.3–123			
Surrogate: Toluene-d8	52.6		"	62.5		84.2	75.9–123			
Surrogate: 4-Bromofluorobenzene	67.8		"	62.5		108	83–123			

Matrix Spike Dup (9B11003–MSD1)

Source: X902029–01

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	116	64.2–124	1.64	25	
Toluene	0.05	0.001	"	0.0500	ND	93.2	63.9–119	1.72	25	
Surrogate: 1,2-Dichloroethane-d4	68.9		ug/L	62.5		110	70.3–123			
Surrogate: Toluene-d8	52.3		"	62.5		83.7	75.9–123			
Surrogate: 4-Bromofluorobenzene	67.0		"	62.5		107	83–123			

Matrix Spike Dup (9B11003–MSD2)

Source: X902031–01

Prepared: 02/11/2009 Analyzed: 02/11/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	118	64.2–124	0.733	25	
Toluene	0.05	0.001	"	0.0500	ND	95.7	63.9–119	1.41	25	
Surrogate: 1,2-Dichloroethane-d4	69.5		ug/L	62.5		111	70.3–123			

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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
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Batch 9B11003 – EPA 5030B

Matrix Spike Dup (9B11003-MSD2)

Source: X902031-01

Prepared: 02/11/2009 Analyzed: 02/11/2009

Surrogate: Toluene-d8	51.6	ug/L	62.5	82.5	75.9-123
Surrogate: 4-Bromofluorobenzene	65.0	"	62.5	104	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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