

# **REMEDIATION SUMMARY REPORT**

**McCLELLAN 3-1, 3-32, 3-35 TANK BATTERY  
WELD COUNTY, COLORADO**

**JULY 2010**



**REMEDIATION SUMMARY REPORT**  
**McCLELLAN 3-1, 3-32, 3-35 TANK BATTERY**  
**WELD COUNTY, COLORADO**

**JULY 2010**

**Prepared for:**

**NOBLE ENERGY, INC.**  
**804 Grand Avenue**  
**Platteville, Colorado 80651**

**Prepared by:**

**LT ENVIRONMENTAL, INC.**  
**4600 West 60<sup>th</sup> Avenue**  
**Arvada, Colorado 80003**  
**(303) 433-9788**



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## EXECUTIVE SUMMARY

This report was prepared by LT Environmental, Inc. (LTE), on behalf of Noble Energy, Inc. (Noble), to document remediation activities at the McClellan 3-1, 3-32, 3-35 Tank Battery (Site). The Site is located at 0.5 miles south of the intersection of Weld County Road (WCR) 50 and WCR 43, located in Weld County (Figure 1).

The scope of work for this project included mitigation of petroleum hydrocarbon impacts following the identification of a tank battery release. The source removal program was accomplished via excavation/removal of hydrocarbon-impacted soils and groundwater. Activities included directing onsite activities/subcontractors, confirmation sampling and analysis, application of a groundwater amendment, documentation, health and safety monitoring, and production of this Remediation Summary Report.

Noble contractors excavated impacted soils at the Site from June 1 through June 4, 2010. A total volume of 470 cubic yards of impacted soils were transported offsite to the Buffalo Ridge Landfill located in Weld County, Colorado. The excavation was backfilled with clean soils. The final excavation extent was approximately 65 feet by 55 feet, to a depth of 4 feet below ground surface (bgs).

Following the completion of source removal activities, an activated carbon remediation amendment was installed in the base of the excavation to remediate any residual hydrocarbons remaining from source removal activities. A total of 350 pounds of groundwater amendment was applied to the excavation.

Based on field screening and the analytical results from the confirmation sidewall samples collected following excavation activities, the remaining soil has been remediated to below the Colorado Oil and Gas Conservation Commission (COGCC) Standards.

LTE will install groundwater monitoring wells at a later date to determine if residual groundwater impacts exist at the Site. A monitoring well installation and groundwater monitoring report will be submitted under separate cover. LTE, on behalf of Noble, will conduct quarterly groundwater monitoring with the goal of observing four consecutive quarters of analytical data below regulatory standard. When this goal is achieved, a No Further Action request will be submitted to the COGCC.

## **SECTION 1.0**

### **INTRODUCTION**

This report was prepared by LT Environmental, Inc. (LTE) for Noble Energy, Inc. (Noble) to document excavation activities at the McClellan 3-1, 3-32, 3-35 Tank Battery (Site). The purpose of this project was to remediate hydrocarbon-impacted soils and groundwater from the Site.

#### **1.1 SITE DESCRIPTION**

The Site is located 0.5 miles south of the intersection of WCR 50 and WCR 43. The legal description of the Site is the northwest quarter of the southwest quarter of Section 3, Township 4 North, Range 65 West of the Sixth Principal Meridian, in Weld County, Colorado (Figure 1). The Site is bordered to the north, east, south, and west by agriculture land.

The Site geology was predominantly observed as silty sand that extended from the ground surface to the shallow groundwater table at approximately 4 feet below ground surface (bgs).

The Site is located at an elevation of 4,668 feet above mean sea level in an area with localized flat topography. Surface topography in the area is modified for agricultural and transportation corridor purposes.

#### **1.2 SCOPE OF WORK**

The scope of work for this remediation project included the removal of impacted soils and treatment of impacted groundwater. Impacted soils were transported offsite to the Buffalo Ridge Landfill and replaced with clean soils from Varra Companies, Inc. (Varra) of Greeley, Colorado. A groundwater amendment mixture was installed in the base of the excavation to reduce the potential for groundwater impact resulting from residual hydrocarbons.

During onsite activities, Noble and LTE personnel conducted field screening of soils, soil sampling, excavation oversight, health and safety monitoring, installation of the groundwater amendment, and documentation activities.

A summary of field activities, analytical results from soil sampling, and conclusions are presented in the subsequent sections.

## SECTION 2.0

### SUMMARY OF FIELD ACTIVITIES

#### 2.1 EXCAVATION ACTIVITIES

##### **Impacted Soil Removal**

From June 1 through June 4, 2010, Noble contractors excavated impacted soils. During remediation activities, soil staining was observed at depths ranging from 1 foot bgs to 4 feet bgs. LTE personnel conducted field screening of volatile organic compounds (VOCs) using a photoionization detector (PID) and collected confirmation soil samples to determine the extent of impact.

The final dimensions of the excavation were approximately 65 feet north-south by 55 feet east-west, and the total depth of the excavation was approximately 4 feet. A total volume of 470 cubic yards of impacted soil were excavated and transported offsite to the Buffalo Ridge Landfill located in Weld County, Colorado.

Soil samples were collected from the impacted interval along the side walls of the excavation. Each sample was field-screened for VOCs with a PID to determine if additional excavation was required. Once PID measurements indicated impacted soil had been removed, confirmation soil samples were collected and submitted to an analytical laboratory.

Soil samples were not collected from the base of the excavation because the final excavation depth extended below the static water level. The potential for residual hydrocarbon impact below the water table in the excavation will be characterized through collection and analysis of groundwater samples and will be presented in future groundwater monitoring reports.

Figure 2 presents the excavation extent as well as the location and analytical results for the soil samples collected from the excavation.

A total of nine samples were collected from the excavation sidewalls and each of the samples was submitted to Origins Laboratory, Inc. (Origins) of Denver, Colorado. Soil samples were submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8260B, as well as total volatile hydrocarbons-gasoline range organics (GRO) and total extractable hydrocarbons-diesel range organics (DRO) by EPA Modified Method 8015.

After field screening and confirmation laboratory analytical results indicated the impacted soils had been removed, the excavation was backfilled with clean fill provided by Varra.

## **Impacted Groundwater Removal**

During excavation activities, 80 barrels (3,360 gallons) of groundwater were removed from the excavation. Groundwater was removed by Barron's Oil Field Services with final disposal at Conquest Disposal in Weld County, Colorado.

## **2.2 GROUNDWATER AMENDMENT APPLICATION**

Groundwater was observed at the Site at approximately 4 feet bgs. To reduce the potential for any further groundwater impact resulting from residual hydrocarbons, a groundwater amendment was applied to the entire base of the excavation following groundwater removal and after field screening measurements and confirmation sample analytical results demonstrated the impacted soils were removed.

The groundwater remediation amendment applied to the excavation was comprised of activated carbon inoculated with electron acceptors (nitrate and sulfate) and nutrients (nitrogen and phosphorus) designed to promote biodegradation of petroleum hydrocarbons. A total of 350 pounds of the groundwater remediation amendment was applied to the base of the excavation.

## **SECTION 3.0**

### **ANALYTICAL RESULTS**

Soil samples were collected to define the extent of the excavation and confirm that impacts above regulatory standard were removed. Confirmation soil samples were collected from the impacted interval along the side walls of the excavation. Soil sample locations and analytical results are illustrated on Figure 2. Soil samples were sent to Origins for analysis of BTEX using EPA Method 8260B, as well as GRO and DRO using EPA Modified Method 8015.

Analytical results indicate BTEX, GRO, and DRO were not detected above COGCC standards in the perimeter samples collected from the accessible area of the excavation.

Soil sample analytical results are summarized in the attached Table. Copies of the laboratory analytical reports are included in Appendix A.



## **SECTION 4.0**

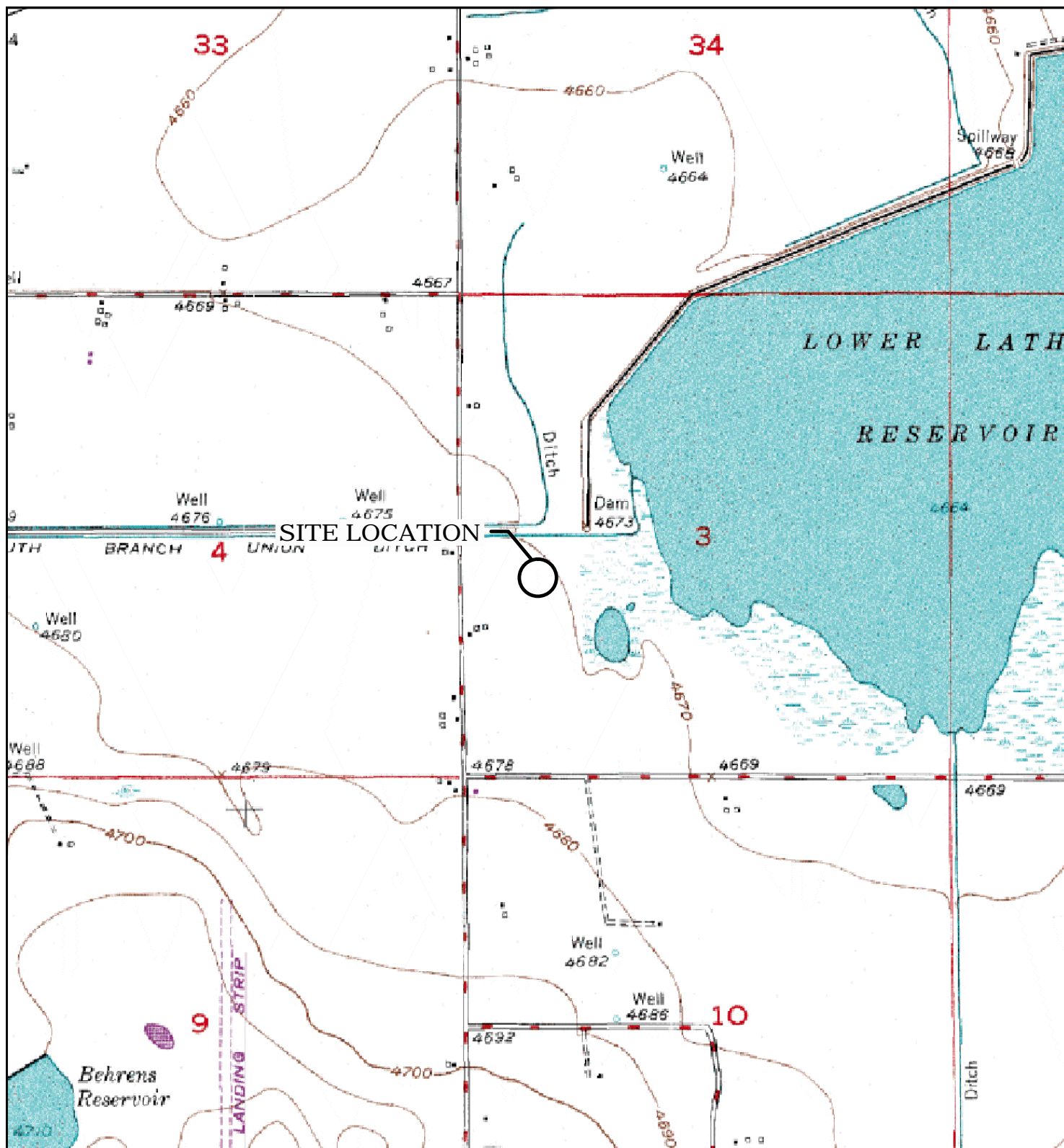
### **SUMMARY AND CONCLUSIONS**

From June 1 through June 4, 2010, Noble excavated and removed 470 cubic yards of impacted soil and 80 barrels (3,360 gallons) of groundwater from the excavation from the Site. During remediation activities, evidence of impact to the subsurface, in the form of staining and odor, was observed ranging in depths from 1 foot to 4 feet bgs. LTE conducted field-screening of VOCs and collection of soil confirmation samples for laboratory analysis from the excavated area. Analytical laboratory results confirm that the impacted soil has been removed.

Impacted soils were excavated and transported to the Buffalo Ridge Landfill. Clean soils were imported from Varra for use as backfill in the excavation. To prevent any future impact from residual hydrocarbons in the excavation, 350 pounds of a hydrocarbon degrading amendment were applied to the base of the excavation.

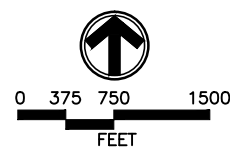
LTE is in the process of conducting post-excavation groundwater monitoring activities at the Site. LTE will use monitoring wells, to be installed at a later date, to conduct groundwater monitoring at the Site. A summary of the monitoring well installation, sampling activities, and groundwater analytical results will be included with the first post-remediation quarterly groundwater monitoring report to be submitted under separate cover.

## FIGURES



# LEGEND

○ SITE LOCATION

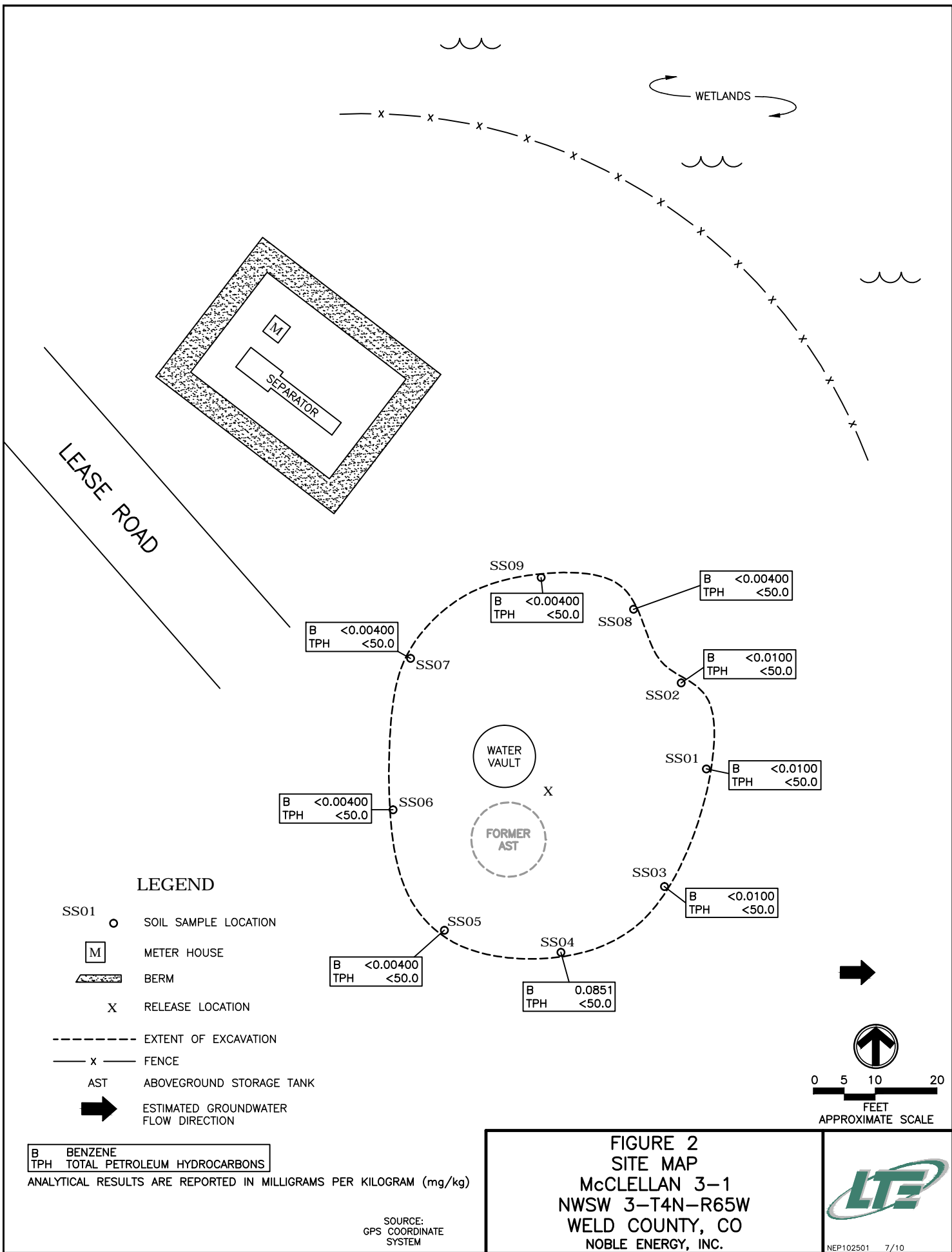


SOURCE: TOPOZONE.COM  
USGS 7.5' QUADRANGLE  
(NAD27)

FIGURE 1  
SITE LOCATION MAP  
McCLELLAN 3-1  
NWSW 3-T4N-R65W  
WELD COUNTY, CO  
NOBLE ENERGY, INC.



NEP102501 7/10



## TABLE

**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**McCLELLAN 3-1, 3-32, 3-35 TANK BATTERY**  
**WELD COUNTY, COLORADO**  
**NOBLE ENERGY, INC.**

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVH-GRO (mg/kg)	TEH-DRO (mg/kg)
SS01	6/1/2010	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<50.0
SS02	6/1/2010	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<50.0
SS03	6/1/2010	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<50.0
SS04	6/2/2010	0.0851	0.0803	0.00728	0.0585	<50.0	<50.0
SS05	6/2/2010	<0.00400	0.00736	<0.00400	<0.00400	<50.0	<50.0
SS06	6/2/2010	<0.00400	0.00944	<0.00400	0.00556	<50.0	<50.0
SS07	6/3/2010	<0.00400	0.0141	<0.00400	0.0246	<50.0	<50.0
SS08	6/3/2010	<0.00400	<0.00400	<0.00400	<0.00400	<50.0	<50.0
SS09	6/4/2010	<0.00400	<0.00400	<0.00400	<0.00400	<50.0	<50.0
<b>COGCC Standard</b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>Combined to 500</b>	

**Notes:**

mg/kg - milligrams per kilogram

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

**bold** indicates samples exceed COGCC standard

TVH-GRO - Total Volatile Hydrocarbons - Gasoline Range Organics

TEH-DRO - Total Extractable Hydrocarbons - Diesel Range Organics

COGCC - Colorado Oil & Gas Conservation Commission

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

TVH-GRO and TEH-DRO analyzed by EPA Modified Method 8015

Samples were collected from the smear zone at 1 to 4 feet below ground surface



**APPENDIX A**  
**LABORATORY ANALYTICAL REPORTS**



6/2/2010

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

Project Name- Noble - McClellan 3-1

Project Number- NEPI025

Attached are your analytical results for Noble - McClellan 3-1 received by Origins Laboratory, Inc. June 1, 2010 4:48 pm. This project is associated with Origins project number X006001-01.

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.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com





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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
SS01	X006001-01	Soil	6/1/2010 12:10:00PM	06/01/2010 16:48
SS02	X006001-02	Soil	6/1/2010 12:05:00PM	06/01/2010 16:48
SS03	X006001-03	Soil	6/1/2010 1:40:00PM	06/01/2010 16:48

Origins Laboratory, Inc.



*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.*

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEP1025  
Project: Noble - McClellan 3-1

www.originslaboratory.com

page 1 of 1

ORIGINS  
LABORATORY, INC

Client: LTE  
Address:  
Telephone Number:  
Email Address:

Project Manager: M. Harrison  
Project Name: McClellan 3-1  
Project Number: NEP1025  
Samples Collected By: D. Burns

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #			
SS01	6/1/10	1210	1	X				X				1	
SS02	↓	1205	1	X				X				2	
SS03	↓	1340	1	X				X				3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	

Analysis: BTX, GRO, DRO

Relinquished By: [Signature] Date: 6/1/10 Time: 16:45

Relinquished By: [Signature] Date: 6/1/10 Time: 16:45

Received By: [Signature] Date: 6/1/10 Time: 16:45

Received By: [Signature] Date: 6/1/10 Time: 16:45

Turnaround Time: Same Day ☐ 24 Hr ☒ 48 Hr ☐ 72 Hr ☐ Standard ☐

Data Results Needed

Origins Laboratory, Inc.

[Signature]

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.

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS01

6/1/2010 12:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.  
X006001-01 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.0100	mg/kg	2.5	OF01003	06/01/2010	06/01/2010	
Toluene	ND	0.0100	"	"	"	"	"	
Ethylbenzene	ND	0.0100	"	"	"	"	"	
Xylenes, total	ND	0.0100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.5 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	96.7 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF01004	06/01/2010	06/01/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	96.1 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS02

6/1/2010 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.  
X006001-02 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.0100	mg/kg	2.5	OF01003	06/01/2010	06/01/2010	
Toluene	ND	0.0100	"	"	"	"	"	
Ethylbenzene	ND	0.0100	"	"	"	"	"	
Xylenes, total	ND	0.0100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.0 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	96.7 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.4 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF01004	06/01/2010	06/01/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.7 %	65-140			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS03

6/1/2010 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.  
X006001-03 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.0100	mg/kg	2.5	OF01003	06/01/2010	06/01/2010	
Toluene	ND	0.0100	"	"	"	"	"	
Ethylbenzene	ND	0.0100	"	"	"	"	"	
Xylenes, total	ND	0.0100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.4 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	96.7 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.5 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF01004	06/01/2010	06/01/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.8 %	65-140			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch OF01004 - Default Prep GC-Semi</b>										
<b>Blank (OF01004-BLK1)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	<i>48.7</i>		<i>g</i>	<i>50.0</i>		<i>97.5</i>	<i>65-140</i>			
<b>LCS (OF01004-BS1)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Gasoline (C6-C10)	122	50.0	mg/kg				65-140			
Diesel (C10-C28)	444	50.0	"	500		88.8	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>49.1</i>		<i>g</i>	<i>50.0</i>		<i>98.3</i>	<i>65-140</i>			
<b>LCS Dup (OF01004-BSDI)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Gasoline (C6-C10)	118	50.0	mg/kg				65-140	3.02	25	
Diesel (C10-C28)	431	50.0	"	500		86.2	60-140	2.98	25	
<i>Surrogate: o-Terphenyl</i>	<i>49.0</i>		<i>g</i>	<i>50.0</i>		<i>98.0</i>	<i>65-140</i>			

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## 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
<b>Batch OF01003 - EPA 5030B</b>										
<b>Blank (OF01003-BLK1)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Benzene	ND	0.004	mg/kg							
Toluene	ND	0.004	"							
Ethylbenzene	ND	0.004	"							
o-Xylene	ND	0.004	"							
m,p-Xylene	ND	0.008	"							
Surrogate: 1,2-Dichloroethane-d4	64.9		ug/L	62.5		104	77.6-134			
Surrogate: Toluene-d8	59.1		"	62.5		94.6	81.4-121			
Surrogate: 4-Bromofluorobenzene	62.2		"	62.5		99.6	74.7-123			
<b>LCS (OF01003-BSI)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Benzene	0.22	0.004	mg/kg	0.200		109	75.2-128			
Toluene	0.20	0.004	"	0.200		100	76.3-130			
Surrogate: 1,2-Dichloroethane-d4	65.3		ug/L	62.5		105	77.6-134			
Surrogate: Toluene-d8	61.8		"	62.5		98.9	81.4-121			
Surrogate: 4-Bromofluorobenzene	60.6		"	62.5		97.0	74.7-123			
<b>LCS Dup (OF01003-BSDI)</b>					Prepared: 06/01/2010 Analyzed: 06/01/2010					
Benzene	0.21	0.004	mg/kg	0.200		107	75.2-128	1.96	200	
Toluene	0.20	0.004	"	0.200		97.6	76.3-130	2.83	200	
Surrogate: 1,2-Dichloroethane-d4	66.0		ug/L	62.5		106	77.6-134			
Surrogate: Toluene-d8	61.2		"	62.5		98.0	81.4-121			
Surrogate: 4-Bromofluorobenzene	61.2		"	62.5		97.9	74.7-123			

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

### Notes and Definitions

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

Origins Laboratory, Inc.



*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.*

Noelle E Doyle, Laboratory Manager



6/3/2010

LT Environmental, Inc.

Matthew Harrison

4600 West 60th Avenue

Arvada

CO

80003

Project Name- Noble - McClellan 3-1

Project Number- NEPI025

Attached are your analytical results for Noble - McClellan 3-1 received by Origins Laboratory, Inc. June 2, 2010 3:55 pm. This project is associated with Origins project number X006014-01.

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.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.

303.433.1322

o-squad@oelabinc.com



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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
SS04	X006014-01	Soil	6/1/2010 11:20:00AM	06/02/2010 15:55
SS05	X006014-02	Soil	6/1/2010 12:50:00PM	06/02/2010 15:55
SS06	X006014-03	Soil	6/1/2010 1:50:00PM	06/02/2010 15:55

Origins Laboratory, Inc.



*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.*

Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEP1025  
Project: Noble - McClellan 3-1

www.originslaboratory.com

page 1 of 1

ORIGINS  
LABORATORY, INC

Client: LTE  
Address:   
Telephone Number:   
Email Address:

Project Manager: M. Harrison  
Project Name: McClellan 3-1  
Project Number: NEP1025  
Samples Collected By: D. Burns

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other			
SS04	6/2/10	1120	1	X					X					1
SS05	6/2/10	1250	1	X					X					2
SS06	6/2/10	1350	1	X					X					3
														4
														5
														6
														7
														8
														9
														10

Relinquished By: [Signature] Date: 6/2/10 Time: 1552

Relinquished By: [Signature] Date: 6/2/10 Time: 1555

Turnaround Time: Same Day ☐ 24 Hr ☒ 48 Hr ☐ 72 Hr ☐ Standard ☐

Data Results Needed

Origins Laboratory, Inc.

Noelle E Doyle

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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS04

6/1/2010 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006014-01 (Soil)

### BTEX by EPA 8260B

Benzene	0.0851	0.00400	mg/kg	1	OF02004	06/02/2010	06/02/2010	
Toluene	0.0803	0.00400	"	"	"	"	"	
Ethylbenzene	0.00728	0.00400	"	"	"	"	"	
Xylenes, total	0.0585	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.7 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	94.8 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF02005	06/02/2010	06/02/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.7 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS05

6/1/2010 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006014-02 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OF02004	06/02/2010	06/02/2010	
Toluene	0.00736	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.0 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	97.5 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.2 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF02005	06/02/2010	06/02/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	96.6 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS06

6/1/2010 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006014-03 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OF02004	06/02/2010	06/02/2010	
Toluene	0.00944	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	0.00556	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	95.8 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	97.4 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF02005	06/02/2010	06/02/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	96.7 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch OF02005 - Default Prep GC-Semi</b>										
<b>Blank (OF02005-BLK1)</b>					Prepared: 06/02/2010 Analyzed: 06/02/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	<i>48.4</i>		<i>g</i>	<i>50.0</i>		<i>96.7</i>	<i>65-140</i>			
<b>LCS (OF02005-BS1)</b>					Prepared: 06/02/2010 Analyzed: 06/02/2010					
Gasoline (C6-C10)	123	50.0	mg/kg				65-140			
Diesel (C10-C28)	453	50.0	"	500		90.5	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>48.7</i>		<i>g</i>	<i>50.0</i>		<i>97.4</i>	<i>65-140</i>			
<b>Matrix Spike (OF02005-MS1)</b>					Source: X006014-01	Prepared: 06/02/2010 Analyzed: 06/02/2010				
Gasoline (C6-C10)	125	50.0	mg/kg		ND		65-130			
Diesel (C10-C28)	458	50.0	"	500	ND	91.6	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>48.9</i>		<i>g</i>	<i>50.0</i>		<i>97.8</i>	<i>65-140</i>			
<b>Matrix Spike Dup (OF02005-MSD1)</b>					Source: X006014-01	Prepared: 06/02/2010 Analyzed: 06/02/2010				
Gasoline (C6-C10)	119	50.0	mg/kg		ND		65-130	5.15	20	
Diesel (C10-C28)	433	50.0	"	500	ND	86.6	60-140	5.63	25	
<i>Surrogate: o-Terphenyl</i>	<i>48.9</i>		<i>g</i>	<i>50.0</i>		<i>97.7</i>	<i>65-140</i>			

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## 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 OF02004 - EPA 5030B

#### Blank (OF02004-BLK1)

Prepared: 06/02/2010 Analyzed: 06/02/2010

Benzene	ND	0.004	mg/kg
Toluene	ND	0.004	"
Ethylbenzene	ND	0.004	"
o-Xylene	ND	0.004	"
m,p-Xylene	ND	0.008	"

Surrogate: 1,2-Dichloroethane-d4	64.3	ug/L	62.5	103	77.6-134
Surrogate: Toluene-d8	60.7	"	62.5	97.2	81.4-121
Surrogate: 4-Bromofluorobenzene	64.6	"	62.5	103	74.7-123

#### LCS (OF02004-BS1)

Prepared: 06/02/2010 Analyzed: 06/02/2010

Benzene	0.20	0.004	mg/kg	0.200	102	75.2-128
Toluene	0.19	0.004	"	0.200	94.9	76.3-130

Surrogate: 1,2-Dichloroethane-d4	66.2	ug/L	62.5	106	77.6-134
Surrogate: Toluene-d8	59.7	"	62.5	95.5	81.4-121
Surrogate: 4-Bromofluorobenzene	63.6	"	62.5	102	74.7-123

#### Matrix Spike (OF02004-MS1)

Source: X006014-01

Prepared: 06/02/2010 Analyzed: 06/02/2010

Benzene	0.28	0.004	mg/kg	0.200	0.09	96.4	77.6-132
Toluene	0.22	0.004	"	0.200	0.08	69.1	74-136

QM-07

Surrogate: 1,2-Dichloroethane-d4	65.0	ug/L	62.5	104	77.6-134
Surrogate: Toluene-d8	59.3	"	62.5	94.8	81.4-121
Surrogate: 4-Bromofluorobenzene	62.4	"	62.5	99.9	74.7-123

#### Matrix Spike Dup (OF02004-MSD1)

Source: X006014-01

Prepared: 06/02/2010 Analyzed: 06/02/2010

Benzene	0.30	0.004	mg/kg	0.200	0.09	108	77.6-132	8.35	13.1
Toluene	0.25	0.004	"	0.200	0.08	83.5	74-136	12.4	20.9

Surrogate: 1,2-Dichloroethane-d4	66.2	ug/L	62.5	106	77.6-134
Surrogate: Toluene-d8	59.1	"	62.5	94.6	81.4-121
Surrogate: 4-Bromofluorobenzene	63.5	"	62.5	102	74.7-123

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

### Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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



6/4/2010

LT Environmental, Inc.

Matthew Harrison

4600 West 60th Avenue

Arvada

CO

80003

Project Name- Noble - McClellan 3-1

Project Number- NEPI025

Attached are your analytical results for Noble - McClellan 3-1 received by Origins Laboratory, Inc. June 3, 2010 3:55 pm. This project is associated with Origins project number X006023-01.

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.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.

303.433.1322

o-squad@oelabinc.com



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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
SS07	X006023-01	Soil	6/3/2010 9:50:00AM	06/03/2010 15:55
SS08	X006023-02	Soil	6/3/2010 12:45:00PM	06/03/2010 15:55

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

**Matthew Harrison**  
**Project Number: NEPI025**  
**Project: Noble - McClellan 3-1**

<b>ORIGINS</b> LABORATORY, INC		<a href="http://www.originslaboratory.com">www.originslaboratory.com</a>	
Client: LTE		X006023	
Address:		1 of 1	
Telephone Number:		page:	
Email Address:		Project Manager: M. Harrison	
		Project Name: McClellan 3-1	
		Project Number: NEP1025	
		Samples Collected By: D. Burns	

Email Address:		Analysis																
Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Sample Instructions						
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other							
SS07	6/3/10	0950	1	X						X			BTEX	X	X	X	1	<div>Sample Instructions</div>
SS08	6/3/10	1245	1	X						X				X	X	X	2	
																	3	
																	4	
																	5	
																	6	
																	7	
																	8	
																	9	
																	10	
Relinquished By:	Date:	6/3/10	Time:	Received By:	Date:	Time:	Turnaround Time:											
Relinquished By:	Date:		Time:	Received By:	Date:	Time:	Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/>											
							48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>											
							Standard <input type="checkbox"/>											

*Papilio deidamia*

**Origins Laboratory, Inc.**

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS07

6/3/2010 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006023-01 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OF03002	06/03/2010	06/04/2010	
Toluene	0.0141	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
o-Xylene	0.00460	0.00400	"	"	"	"	"	
m,p-Xylene	0.0200	0.00800	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.4 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	97.3 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF03004	06/03/2010	06/03/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	98.5 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS08

6/3/2010 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006023-02 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OF03002	06/03/2010	06/04/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
o-Xylene	ND	0.00400	"	"	"	"	"	
m,p-Xylene	ND	0.00800	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.7 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	98.6 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF03004	06/03/2010	06/03/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	100 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch OF03004 - Default Prep GC-Semi</b>										
<b>Blank (OF03004-BLK1)</b>					Prepared: 06/03/2010 Analyzed: 06/03/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	<i>48.6</i>		<i>g</i>	<i>50.0</i>		<i>97.3</i>	<i>65-140</i>			
<b>LCS (OF03004-BS1)</b>					Prepared: 06/03/2010 Analyzed: 06/03/2010					
Gasoline (C6-C10)	115	50.0	mg/kg				65-140			
Diesel (C10-C28)	421	50.0	"	500		84.3	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>49.8</i>		<i>g</i>	<i>50.0</i>		<i>99.6</i>	<i>65-140</i>			
<b>Matrix Spike (OF03004-MS1)</b>					Source: X006023-01	Prepared: 06/03/2010 Analyzed: 06/03/2010				
Gasoline (C6-C10)	120	50.0	mg/kg		ND		65-130			
Diesel (C10-C28)	460	50.0	"	500	32.6	85.6	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>50.0</i>		<i>g</i>	<i>50.0</i>		<i>100</i>	<i>65-140</i>			
<b>Matrix Spike Dup (OF03004-MSD1)</b>					Source: X006023-01	Prepared: 06/03/2010 Analyzed: 06/03/2010				
Gasoline (C6-C10)	126	50.0	mg/kg		ND		65-130	5.17	20	
Diesel (C10-C28)	476	50.0	"	500	32.6	88.7	60-140	3.36	25	
<i>Surrogate: o-Terphenyl</i>	<i>50.3</i>		<i>g</i>	<i>50.0</i>		<i>101</i>	<i>65-140</i>			

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## 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 OF03002 - EPA 5030B

#### Blank (OF03002-BLK1)

Prepared: 06/03/2010 Analyzed: 06/03/2010

Benzene	ND	0.004	mg/kg
Toluene	ND	0.004	"
Ethylbenzene	ND	0.004	"
o-Xylene	ND	0.004	"
m,p-Xylene	ND	0.008	"

Surrogate: 1,2-Dichloroethane-d4	61.0	ug/L	62.5	97.6	77.6-134
Surrogate: Toluene-d8	59.9	"	62.5	95.8	81.4-121
Surrogate: 4-Bromofluorobenzene	63.6	"	62.5	102	74.7-123

#### LCS (OF03002-BS1)

Prepared: 06/03/2010 Analyzed: 06/03/2010

Benzene	0.22	0.004	mg/kg	0.200	108	75.2-128
Toluene	0.21	0.004	"	0.200	103	76.3-130

Surrogate: 1,2-Dichloroethane-d4	58.4	ug/L	62.5	93.5	77.6-134
Surrogate: Toluene-d8	63.3	"	62.5	101	81.4-121
Surrogate: 4-Bromofluorobenzene	66.6	"	62.5	107	74.7-123

#### Matrix Spike (OF03002-MS1)

Source: X006023-01

Prepared: 06/03/2010 Analyzed: 06/03/2010

Benzene	0.21	0.004	mg/kg	0.200	0.002	103	77.6-132
Toluene	0.20	0.004	"	0.200	0.01	95.4	74-136

Surrogate: 1,2-Dichloroethane-d4	59.4	ug/L	62.5	95.1	77.6-134
Surrogate: Toluene-d8	62.1	"	62.5	99.4	81.4-121
Surrogate: 4-Bromofluorobenzene	63.9	"	62.5	102	74.7-123

#### Matrix Spike Dup (OF03002-MSD1)

Source: X006023-01

Prepared: 06/03/2010 Analyzed: 06/03/2010

Benzene	0.21	0.004	mg/kg	0.200	0.002	104	77.6-132	0.594	13.1
Toluene	0.20	0.004	"	0.200	0.01	95.0	74-136	0.332	20.9

Surrogate: 1,2-Dichloroethane-d4	59.5	ug/L	62.5	95.3	77.6-134
Surrogate: Toluene-d8	63.0	"	62.5	101	81.4-121
Surrogate: 4-Bromofluorobenzene	65.0	"	62.5	104	74.7-123

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

### 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



6/6/2010

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

Project Name- Noble - McClellan 3-1

Project Number- NEPI025

Attached are your analytical results for Noble - McClellan 3-1 received by Origins Laboratory, Inc. June 4, 2010 2:48 pm. This project is associated with Origins project number X006042-01.

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.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
SS09	X006042-01	Soil	6/4/2010 10:15:00AM	06/04/2010 14:48

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Noelle E Doyle, Laboratory Manager

**Matthew Harrison**  
**Project Number: NEPI025**  
**Project: Noble - McClellan 3-1**

# ORIGINS

LABORATORY, INC

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7000042

page 1 of 1

Client: LTE

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_




Project Manager: M. Harrison

Project Name: McClellan 3-1

Project Number: NEP1025

Samples Collected By: D. Burns

Analysis

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Sample Instructions				
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sampling Canister #	Other					
5509	6/4/10	1015	1	X					X			BTEX	XX	1		Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
												GC	XX	2		
												DR		3		
														4		
														5		
														6		
														7		
														8		
														9		
														10		
Relinquished By: 	Date: 6/4/10	Time: 1415														
Relinquished By: 	Date: 6/14/10	Time: 1445														

Fax: 303.265.9645

Phone: 303.433.1322

Denver, CO 80211

1725 Elk Place

**Origins Laboratory, Inc.**

Naale G.

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

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## SS09

6/4/2010 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X006042-01 (Soil)

### BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OF04003	06/04/2010	06/04/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.4 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	97.4 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	74.7-123			"	"	"	

### GRO (TVPH)/DRO (TEPH)by EPA 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OF04004	06/04/2010	06/05/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	99.1 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

### Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch OF04004 - Default Prep GC-Semi</b>										
<b>Blank (OF04004-BLK1)</b>					Prepared: 06/04/2010 Analyzed: 06/04/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	49.8		g	50.0		99.7	65-140			
<b>Blank (OF04004-BLK2)</b>					Prepared: 06/04/2010 Analyzed: 06/04/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	48.3		g	50.0		96.6	65-140			
<b>LCS (OF04004-BS1)</b>					Prepared: 06/04/2010 Analyzed: 06/04/2010					
Gasoline (C6-C10)	106	50.0	mg/kg				65-140			
Diesel (C10-C28)	389	50.0	"	500		77.7	60-140			
Surrogate: o-Terphenyl	49.1		g	50.0		98.2	65-140			
<b>LCS (OF04004-BS2)</b>					Prepared: 06/04/2010 Analyzed: 06/04/2010					
Gasoline (C6-C10)	120	50.0	mg/kg				65-140			
Diesel (C10-C28)	433	50.0	"	500		86.6	60-140			
Surrogate: o-Terphenyl	51.7		g	50.0		103	65-140			
<b>Matrix Spike (OF04004-MS1)</b>					Source: X006032-02	Prepared: 06/04/2010 Analyzed: 06/04/2010				
Gasoline (C6-C10)	124	50.0	mg/kg		ND		65-130			
Diesel (C10-C28)	465	50.0	"	500	ND	92.9	60-140			
Surrogate: o-Terphenyl	51.1		g	50.0		102	65-140			
<b>Matrix Spike (OF04004-MS2)</b>					Source: X006032-03	Prepared: 06/04/2010 Analyzed: 06/04/2010				
Gasoline (C6-C10)	131	50.0	mg/kg		ND		65-130			
Diesel (C10-C28)	474	50.0	"	500	ND	94.9	60-140			
Surrogate: o-Terphenyl	51.5		g	50.0		103	65-140			

Origins Laboratory, Inc.



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Arvada CO 80003

Matthew Harrison  
Project Number: NEPI025  
Project: Noble - McClellan 3-1

## Extractable Petroleum Hydrocarbons by 8015M - 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 OF04004 - Default Prep GC-Semi

Matrix Spike Dup (OF04004-MSD1)		Source: X006032-02			Prepared: 06/04/2010 Analyzed: 06/04/2010					
Gasoline (C6-C10)	123	50.0	mg/kg		ND		65-130	0.123	20	
Diesel (C10-C28)	462	50.0	"	500	ND	92.5	60-140	0.492	25	
Surrogate: o-Terphenyl	52.5		g	50.0		105	65-140			
Matrix Spike Dup (OF04004-MSD2)		Source: X006032-03			Prepared: 06/04/2010 Analyzed: 06/05/2010					
Gasoline (C6-C10)	154	50.0	mg/kg		ND		65-130	16.4	20	
Diesel (C10-C28)	548	50.0	"	500	ND	110	60-140	14.4	25	
Surrogate: o-Terphenyl	51.3		g	50.0		103	65-140			

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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 OF04003 - EPA 5030B

#### Blank (OF04003-BLK1)

Prepared: 06/04/2010 Analyzed: 06/04/2010

Benzene	ND	0.004	mg/kg
Toluene	ND	0.004	"
Ethylbenzene	ND	0.004	"
o-Xylene	ND	0.004	"
m,p-Xylene	ND	0.008	"

Surrogate: 1,2-Dichloroethane-d4	62.6	ug/L	62.5	100	77.6-134
Surrogate: Toluene-d8	62.0	"	62.5	99.3	81.4-121
Surrogate: 4-Bromofluorobenzene	68.9	"	62.5	110	74.7-123

#### LCS (OF04003-BS1)

Prepared: 06/04/2010 Analyzed: 06/04/2010

Benzene	0.21	0.004	mg/kg	0.200	103	75.2-128
Toluene	0.19	0.004	"	0.200	93.7	76.3-130

Surrogate: 1,2-Dichloroethane-d4	64.4	ug/L	62.5	103	77.6-134
Surrogate: Toluene-d8	60.3	"	62.5	96.5	81.4-121
Surrogate: 4-Bromofluorobenzene	67.0	"	62.5	107	74.7-123

#### Matrix Spike (OF04003-MS1)

Source: X006032-01

Prepared: 06/04/2010 Analyzed: 06/04/2010

Benzene	0.18	0.004	mg/kg	0.200	ND	91.3	77.6-132
Toluene	0.16	0.004	"	0.200	0.003	77.8	74-136

Surrogate: 1,2-Dichloroethane-d4	66.8	ug/L	62.5	107	77.6-134
Surrogate: Toluene-d8	59.4	"	62.5	95.0	81.4-121
Surrogate: 4-Bromofluorobenzene	67.0	"	62.5	107	74.7-123

#### Matrix Spike Dup (OF04003-MSD1)

Source: X006032-01

Prepared: 06/04/2010 Analyzed: 06/04/2010

Benzene	0.18	0.004	mg/kg	0.200	ND	91.2	77.6-132	0.175	13.1
Toluene	0.16	0.004	"	0.200	0.003	79.5	74-136	2.12	20.9

Surrogate: 1,2-Dichloroethane-d4	65.2	ug/L	62.5	104	77.6-134
Surrogate: Toluene-d8	60.7	"	62.5	97.1	81.4-121
Surrogate: 4-Bromofluorobenzene	67.1	"	62.5	107	74.7-123

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