

State of Colorado  
**Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



#8264

FOR OGCC USE ONLY

**RECEIVED**  
3/18/2014

OGCC Employee:

Spill Complaint  
Inspection NOAV

Tracking No: **2147149**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): \_\_\_\_\_

OGCC Operator Number: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____
API Number: _____	County: _____
Facility Name: _____	Facility Number: _____
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): _____ Latitude: _____ Longitude: _____	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): \_\_\_\_\_

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): \_\_\_\_\_

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: \_\_\_\_\_

Potential receptors (water wells within 1/4 mi, surface waters, etc.): \_\_\_\_\_

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
Soils	_____	_____
Vegetation	_____	_____
Groundwater	_____	_____
Surface Water	_____	_____

**REMEDIALTION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):

Describe how source is to be removed:

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:



Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

## REMEDIATION WORKPLAN (Cont.)

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required?      Y      N      If yes, describe:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

## IMPLEMENTATION SCHEDULE

Date Site Investigation Began: \_\_\_\_\_ Date Site Investigation Completed: \_\_\_\_\_ Date Remediation Plan Submitted: \_\_\_\_\_  
Remediation Start Date: \_\_\_\_\_ Anticipated Completion Date: \_\_\_\_\_ Actual Completion Date: \_\_\_\_\_

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: \_\_\_\_\_ Signed: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

OGCC Approved: \_\_\_\_\_ Title: **EPS** Date: **3/18/2014**



March 13, 2014

Mr. Todd Cullum  
Base Construction Foreman  
Noble Energy, Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, Colorado 80634

Mr. Jacob Evans  
Senior Environmental Specialist  
Noble Energy, Inc.  
1625 Broadway, Suite 2200  
Denver, Colorado 80202

RE: **Remediation Activity Summary**  
**State 16-16I4 Flow Line**  
**Weld County, Colorado**  
**COGCC Tracking #2147149**

Dear Mr. Cullum and Mr. Evans:

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted environmental remediation activities and confirmation soil sampling at the State 16-16I4 Flow Line (Site). This correspondence describes the remediation work conducted in January 2014. The legal site description is the southwest quarter of the southeast quarter of Section 16, Township 4 North, Range 64 West, 6<sup>th</sup> Principal Meridian. The Site is located approximately 0.4 miles west of the intersection of County Road 44 and County Road 55 in Weld County, Colorado. The Site Location Map is provided as Figure 1.

### **Excavation Scope of Work**

LTE personnel, under the direction of Noble, were on site to direct excavation activities, field screen excavated soil, collect confirmation soil samples, document site work, and provide health and safety oversight between the dates of January 7 through January 14, 2014. The contractor operating the excavation equipment was BG Services, Inc. of Fort Lupton, Colorado. The total extent of the excavation was within an area of approximately 95 feet north-south by 75 feet east-west, to a total depth of approximately eight feet below ground surface (bgs). The Site Map is provided as Figure 2.

The soil was field screened for volatile organic compounds using a photo-ionization detector (PID). The PID readings ranged from 1.1 parts per million (ppm) at SS27 at five feet bgs (SS27@5') to 1,136 ppm at SS25@5'. The excavation soil field screening results are presented on Figure 3 and summarized in Table 1. Groundwater was encountered in the excavation at approximately six feet bgs. A vacuum truck removed 320 barrels of groundwater during excavation activities. A total of 400 pounds of Chemically Oxygenated Granular Activated Carbon (COGAC<sup>TM</sup>) was applied to the floor of the excavation prior to backfilling. A total of 209 truckloads of impacted soil (approximately 2,090 cubic yards) were removed from the

excavation and transported to the Waste Management Buffalo Ridge Landfill in Keenesburg, Colorado, for final disposal.

### **Confirmation Soil Sampling**

LTE personnel, under the direction of Noble, collected confirmation soil samples from the excavation sidewalls once PID readings indicated that petroleum hydrocarbon impacted soil had been removed. Confirmation soil samples were collected, placed on ice, and delivered with a complete chain of custody form to Origins Laboratory, Inc. (Origins) of Denver, Colorado.

Twelve discrete soil samples were collected from the sidewalls of the excavation. The soil samples were submitted to Origins for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8260C, and TPH as diesel range organics (DRO) by EPA Method 8015C.

### **Excavation Groundwater Sampling**

One groundwater grab sample (GW01) was collected from the excavation. Groundwater samples were collected, placed on ice, and delivered with a complete chain of custody form to Origins for analysis of BTEX by EPA Method 8260C.

### **Excavation Soil Analytical Results**

The Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 standards for BTEX, naphthalene, and TPH in soil are 0.17 milligrams per kilogram (mg/kg), 85 mg/kg, 100 mg/kg, 175 mg/kg, 23 mg/kg, and 500 mg/kg, respectively. Laboratory soil analytical results indicate that soil sample SS04@5' exceeded the COGCC Table 910-1 standard for benzene at a concentration of 0.170 mg/kg. All remaining laboratory soil analytical results were in compliance with applicable COGCC Table 910-1 standards. After receiving analytical results for SS04@5', an additional five feet of soil was removed from the sidewall and one new confirmation soil sample was collected (SS08@5'). The new confirmation soil sample indicated compliance with applicable COGCC Table 910-1 standards. The soil analytical results are presented on Figure 4 and summarized in Table 2. The laboratory analytical reports are included as the attachment.

### **Excavation Groundwater Analytical Results**

The Colorado Department of Public Health and Environment-Water Quality Control Commission has established Regulation 41-The Basic Standards for Ground Water (WQCC Reg 41) for BTEX at 5.0 micrograms per liter (µg/L), 560 µg/L, 700 µg/L, and 1,400 µg/L, respectively. Laboratory groundwater analytical results indicate grab sample GW01 exceeded the applicable WQCC Reg 41 standard for benzene, toluene, and total xylenes at concentrations of 1,190 µg/L, 3,270 µg/L, and 2,380 µg/L, respectively. The excavation groundwater analytical results are presented on Figure 5 and summarized in Table 3. The laboratory analytical reports are included as the attachment.

## Summary

LTE, under the direction of Noble, conducted oversight of source removal of petroleum hydrocarbon impacted soil from the Site as well as confirmation groundwater and soil sampling activities. Per the excavation activities conducted and laboratory soil analytical results, the impacted soil exceeding applicable COGCC Table 910-1 standards was removed. Approximately 2,090 cubic yards of petroleum hydrocarbon impacted soil was removed from the excavation and transported to the Waste Management Buffalo Ridge Landfill in Keenesburg, Colorado, for final disposal. Approximately 320 barrels of impacted groundwater were removed from the excavation and disposed of at a properly licensed injection facility. Groundwater analytical results exceeded the applicable WQCC Reg 41 standard for benzene, toluene, and total xylenes; therefore, a groundwater monitoring program will be implemented once a site assessment has been completed and monitoring wells have been installed. Groundwater will be monitored with the goal of obtaining four consecutive quarters of laboratory groundwater analytical results in compliance with applicable COGCC Table 910-1 standards. Groundwater monitoring and remediation activities will be summarized in future reports.

LTE appreciates the opportunity to provide environmental services to Noble. Please call LTE at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.



Chris Roy  
Project Manager



Steve Kahn, P.E.  
Principal

## Attachments

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Excavation Soil Field Screening Results
Figure 4	Excavation Soil Analytical Results
Figure 5	Excavation Groundwater Analytical Results
Table 1	Excavation Soil Field Screening Results
Table 2	Excavation Soil Analytical Results
Table 3	Excavation Groundwater Analytical Results
Attachment 1	Laboratory Analytical Reports

## FIGURES

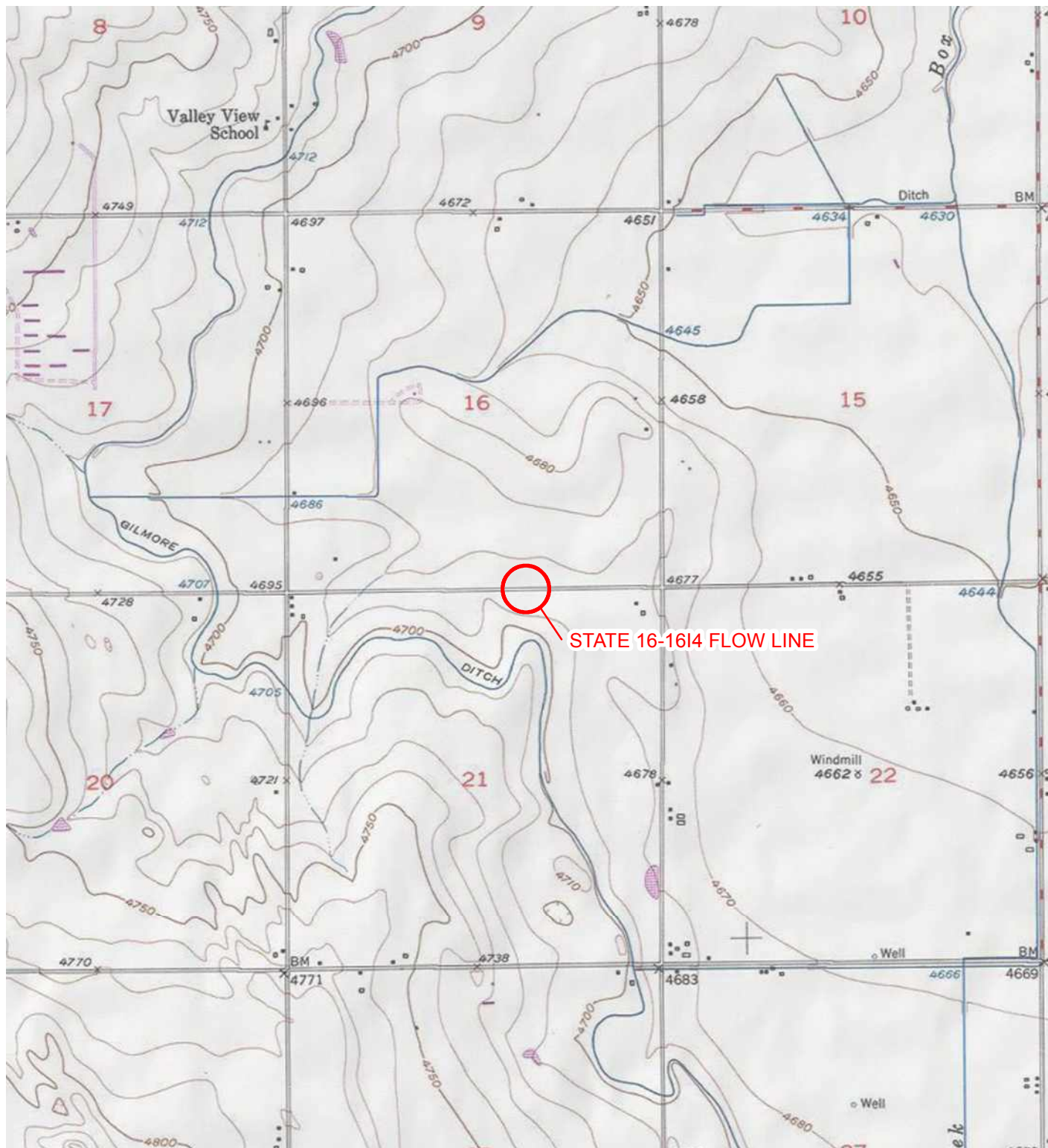


IMAGE COURTESY OF ESRI/USGS

# LEGEND

○ SITE LOCATION

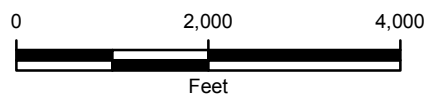


FIGURE 1  
SITE LOCATION MAP  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





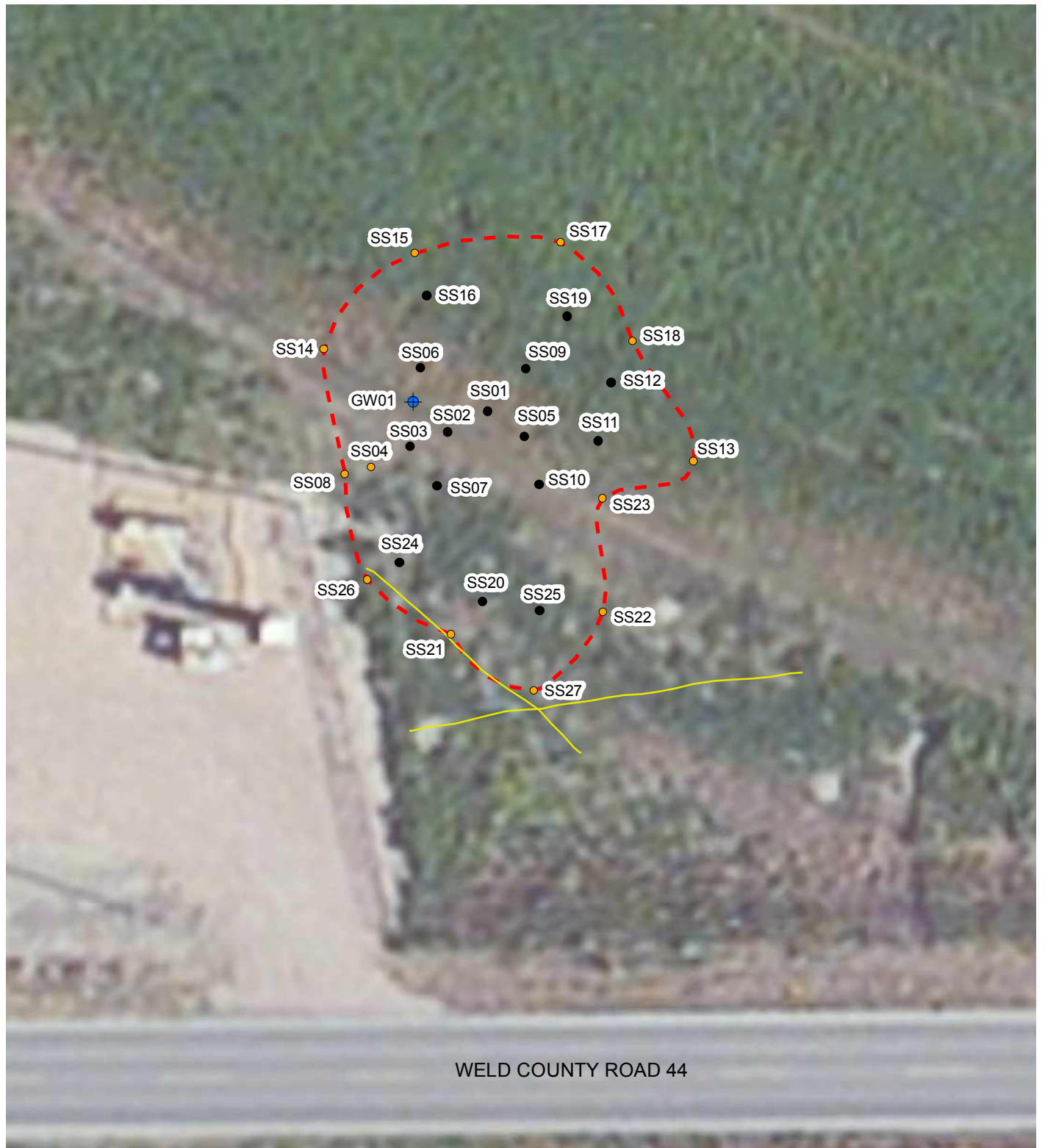


IMAGE COURTESY OF ESRI

## LEGEND

- LABORATORY SOIL SAMPLE
- FIELD SCREENING SOIL SAMPLE
- + GROUNDWATER SAMPLE
- FLOW LINE
- - - EXCAVATION EXTENT

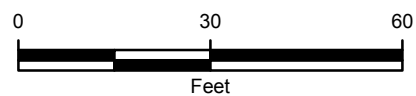


FIGURE 2  
SITE MAP  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





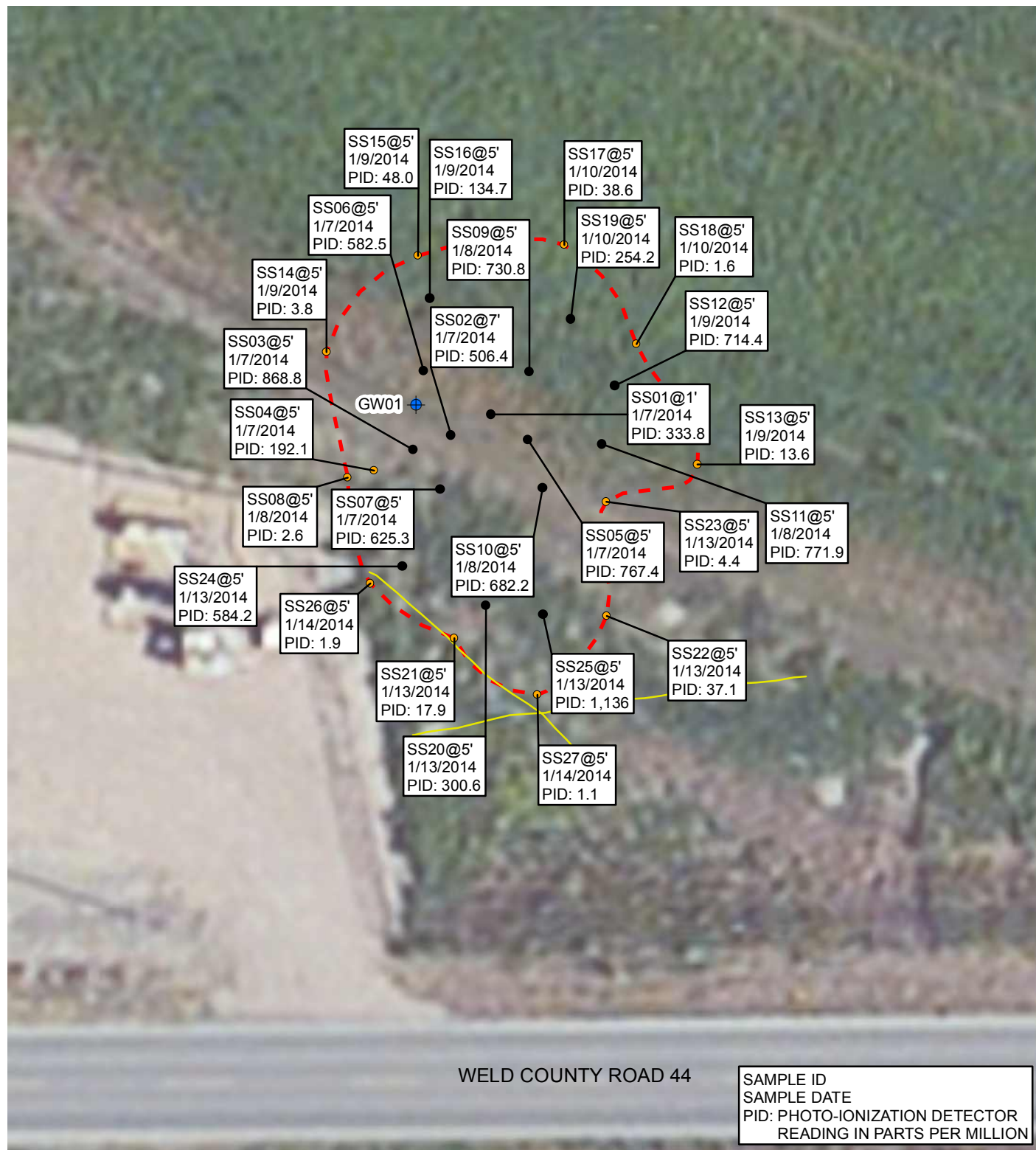
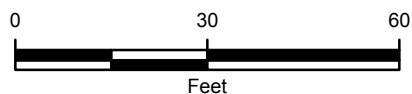


IMAGE COURTESY OF ESRI

## LEGEND

- LABORATORY SOIL SAMPLE
- FIELD SCREENING SOIL SAMPLE
- + GROUNDWATER SAMPLE
- FLOW LINE
- - - EXCAVATION EXTENT



**FIGURE 3**  
EXCAVATION SOIL FIELD SCREENING RESULTS  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.



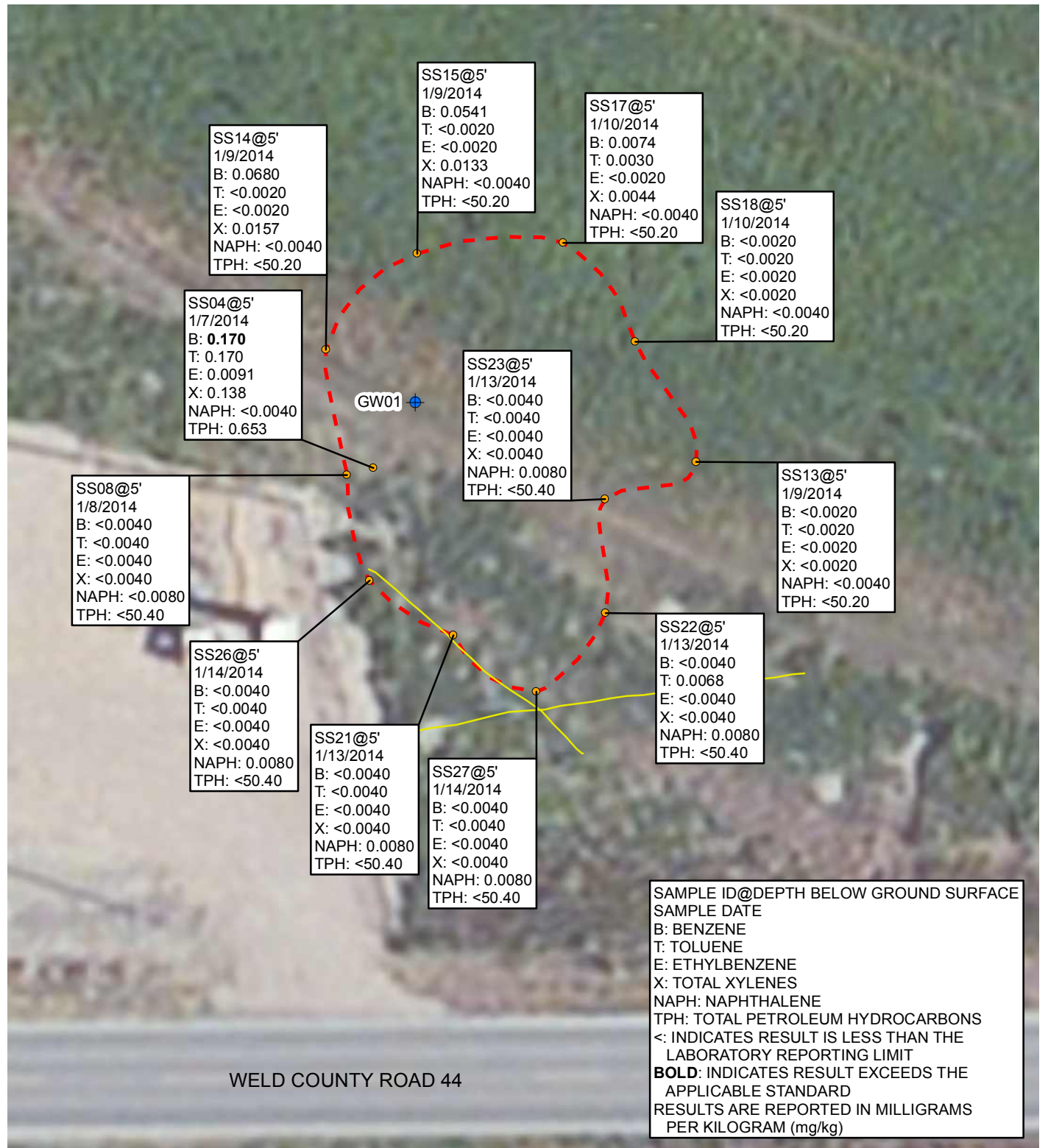
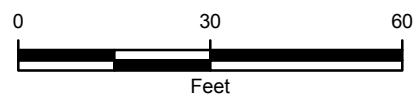


IMAGE COURTESY OF ESRI

## LEGEND

- LABORATORY SOIL SAMPLE
- ⊕ GROUNDWATER SAMPLE
- FLOW LINE
- - - EXCAVATION EXTENT



**FIGURE 4**  
**EXCAVATION SOIL ANALYTICAL RESULTS**  
**STATE 16-1614 FLOW LINE**  
**WELD COUNTY, COLORADO**

**NOBLE ENERGY, INC.**





IMAGE COURTESY OF ESRI

# LEGEND

- LABORATORY SOIL SAMPLE
- GROUNDWATER SAMPLE
- FLOW LINE
- EXCAVATION EXTENT

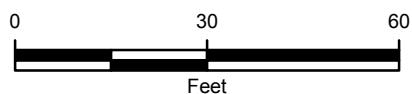


FIGURE 5  
EXCAVATION GROUNDWATER ANALYTICAL RESULTS  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.



## **TABLES**

**TABLE 1**

**EXCAVATION SOIL FIELD SCREENING RESULTS  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO  
NOBLE ENERGY, INC.**

Soil Sample	Date	PID Reading (ppm)
SS01@1'	1/7/2014	333.8
SS02@7'	1/7/2014	506.4
SS03@5'	1/7/2014	868.8
SS04@5'	1/7/2014	192.1
SS05@5'	1/7/2014	767.4
SS06@5'	1/7/2014	582.5
SS07@5'	1/7/2014	625.3
SS08@5'	1/8/2014	2.6
SS09@5'	1/8/2014	730.8
SS10@5'	1/8/2014	682.2
SS11@5'	1/8/2014	771.9
SS12@5'	1/9/2014	714.4
SS13@5'	1/9/2014	13.6
SS14@5'	1/9/2014	3.8
SS15@5'	1/9/2014	48.0
SS16@5'	1/9/2014	134.7
SS17@5'	1/10/2014	38.6
SS18@5'	1/10/2014	1.6
SS19@5'	1/10/2014	254.2
SS20@5'	1/13/2014	300.6
SS21@5'	1/13/2014	17.9
SS22@5'	1/13/2014	37.1
SS23@5'	1/13/2014	4.4
SS24@5'	1/13/2014	584.2
SS25@5'	1/13/2014	1136
SS26@5'	1/14/2014	1.9
SS27@5'	1/14/2014	1.1

**NOTES:**

PID - photo-ionization detector

ppm - parts per million



TABLE 2

EXCAVATION SOIL ANALYTICAL RESULTS  
STATE 16-1614 FLOW LINE  
WELD COUNTY, COLORADO  
NOBLE ENERGY, INC.

Soil Sample	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
SS04@5'	1/7/2014	<b>0.170</b>	0.170	0.0091	0.138	<0.0040	0.653	<50.0	0.653
SS08@5'	1/8/2014	<0.0040	<0.0040	<0.0040	<0.0040	<0.0080	<0.40	<50.0	<50.40
SS13@5'	1/9/2014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0040	<0.20	<50.0	<50.20
SS14@5'	1/9/2014	0.0680	<0.0020	<0.0020	0.0157	<0.0040	<0.20	<50.0	<50.20
SS15@5'	1/9/2014	0.0541	<0.0020	<0.0020	0.0133	<0.0040	<0.20	<50.0	<50.20
SS17@5'	1/10/2014	0.0074	0.0030	<0.0020	0.0044	<0.0040	<0.20	<50.0	<50.20
SS18@5'	1/10/2014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0040	<0.20	<50.0	<50.20
SS21@5'	1/13/2014	<0.0040	<0.0040	<0.0040	<0.0040	0.0080	<0.40	<50.0	<50.40
SS22@5'	1/13/2014	<0.0040	0.0068	<0.0040	<0.0040	0.0080	<0.40	<50.0	<50.40
SS23@5'	1/13/2014	<0.0040	<0.0040	<0.0040	<0.0040	0.0080	<0.40	<50.0	<50.40
SS26@5'	1/14/2014	<0.0040	<0.0040	<0.0040	<0.0040	0.0080	<0.40	<50.0	<50.40
SS27@5'	1/14/2014	<0.0040	<0.0040	<0.0040	<0.0040	0.0080	<0.40	<50.0	<50.40
COGCC Table 910-1 Standard		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	--	--	<b>500</b>

**NOTES:**

DRO - diesel range organics analyzed by EPA Method 8015C

GRO - gasoline range organics analyzed by EPA Method 8260C

mg/kg - milligrams per kilogram

TPH - total petroleum hydrocarbons

TPH is the sum of GRO and DRO

&lt; - indicates result is less than the stated laboratory method reporting limit

-- - not applicable

**Bold** indicates the result equals or exceeds the applicable standard

COGCC - Colorado Oil and Gas Conservation Commission

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

TABLE 3

EXCAVATION GROUNDWATER ANALYTICAL RESULTS  
 STATE 16-1614 FLOW LINE  
 WELD COUNTY, COLORADO  
 NOBLE ENERGY, INC.

Sample Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
GW01	1/8/2014	<b>1,190</b>	<b>3,270</b>	167	<b>2,380</b>
CDPHE WQCC Reg 41 Standard		<b>5.0</b>	<b>560</b>	<b>700</b>	<b>1,400</b>

**NOTES:**

µg/L - micrograms per liter

**Bold** indicates the result equals or exceeds the applicable standard

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

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



**ATTACHMENT**  
**LABORATORY ANALYTICAL REPORTS**



January 08, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

**Project Name - Noble - State 16-1614**

**Project Number - 008313110**

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 07, 2014. This project is associated with Origins project number X401048-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS04 @ 5'	X401048-01	Soil	January 7, 2014 12:20	01/07/2014 16:30

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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

www.originslaboratory.com

page 1 of 1

X401048

**ORIGINS**  
LABORATORY, INC

Client: LTE  
Address:   
Project Manager: Chris Roy  
Project Name: State 16-1614  
Project Number: 008313110  
Samples Collected By: D. Baker

Telephone Number: 303-433-9788  
Email Address: C.Roy@ltenv.com

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	Canister #			
550405	1/7/14	1220	1							X				1
														2
														3
														4
														5
														6
														7
														8
														9
														10
Relinquished By: <u>[Signature]</u>	Date: <u>1/7/14</u>	Time: <u>1630</u>												Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By: <u>[Signature]</u>	Date: <u>1/7/14</u>	Time: <u>16:30</u>												

DATA RESULTS STANDARD

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X401048

Client: LTE

Client Project ID: Noble - State 16-1614

Checklist Completed by: Jesse Smith

Shipped Via: HTD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/7/14 16:53

Airbill #: NA

Matrix(s) Received: (Check all that apply): X Soil/Solid        Water        Other:       

Cooler Number/Temperature: 11.1 °C        °C        °C (Describe)        °C

Thermometer ID: T200

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	Soil
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			X	Soil
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

Date/Time Reviewed 1/8/14 5:54

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

## SS04 @ 5'

1/7/2014 12:20:00PM

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

## Origins Laboratory, Inc. X401048-01 (Soil)

### Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A07007	01/07/2014	01/07/2014	
Surrogate: o-Terphenyl	109 %	59-131			"	"	"	

### GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	0.653	0.20	mg/kg	1	4A07011	01/07/2014	01/08/2014	
Benzene	0.170	0.0020	"	"	"	"	"	
Toluene	0.170	0.0020	"	"	"	"	"	
Ethylbenzene	0.0091	0.0020	"	"	"	"	"	
Xylenes, total	0.138	0.0020	"	"	"	"	"	
Napthalene	ND	0.0040	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	01/07/2014	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A07011 - EPA 5030 (soil)</b>										
<b>Blank (4A07011-BLK1)</b>					Prepared: 01/07/2014 Analyzed: 01/07/2014					
Gasoline Range Hydrocarbons	ND	0.40	mg/kg							
Benzene	ND	0.0040	"							
Toluene	ND	0.0040	"							
Ethylbenzene	ND	0.0040	"							
Xylenes, total	ND	0.0040	"							
Naphthalene	ND	0.0080	"							
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

Origins Laboratory, Inc.

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Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A07011 - EPA 5030 (soil)</b>										
<b>LCS (4A07011-BS1)</b>					Prepared: 01/07/2014 Analyzed: 01/07/2014					
Benzene	0.18	0.0040	mg/kg	0.200		90.7	70-130			
Toluene	0.20	0.0040	"	0.200		98.3	70-130			
Ethylbenzene	0.21	0.0040	"	0.200		106	70-130			
m,p-Xylene	0.37	0.0080	"	0.400		93.6	70-130			
o-Xylene	0.21	0.0040	"	0.200		106	70-130			
Naphthalene	0.22	0.0080	"	0.200		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	70-130			

Origins Laboratory, Inc.

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Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A07011 - EPA 5030 (soil)</b>										
<b>LCS Dup (4A07011-BSD1)</b>					Prepared: 01/07/2014 Analyzed: 01/07/2014					
Benzene	0.18	0.0040	mg/kg	0.200		91.0	70-130	0.352	20	
Toluene	0.22	0.0040	"	0.200		109	70-130	10.6	20	
Ethylbenzene	0.23	0.0040	"	0.200		117	70-130	9.86	20	
m,p-Xylene	0.39	0.0080	"	0.400		96.5	70-130	3.11	20	
o-Xylene	0.22	0.0040	"	0.200		110	70-130	3.72	20	
Naphthalene	0.24	0.0080	"	0.200		119	70-130	6.40	20	
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.5	70-130			

Origins Laboratory, Inc.

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Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**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 4A07007 - EPA 3580**

**Blank (4A07007-BLK1)**

Prepared: 01/07/2014 Analyzed: 01/07/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 49 g 50.0 97.9 59-131

**LCS (4A07007-BS1)**

Prepared: 01/07/2014 Analyzed: 01/07/2014

Diesel (C10-C28) 917 50.0 mg/kg 64-121

Surrogate: o-Terphenyl 45 g 50.0 90.6 59-131

**Matrix Spike (4A07007-MS1)**

**Source: X401040-01**

Prepared: 01/07/2014 Analyzed: 01/07/2014

Diesel (C10-C28) 965 50.0 mg/kg ND 53-125

Surrogate: o-Terphenyl 47 g 50.0 94.7 59-131

**Matrix Spike Dup (4A07007-MSD1)**

**Source: X401040-01**

Prepared: 01/07/2014 Analyzed: 01/07/2014

Diesel (C10-C28) 973 50.0 mg/kg ND 53-125 0.810 20

Surrogate: o-Terphenyl 50 g 50.0 99.4 59-131

Origins Laboratory, Inc.

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LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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January 09, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - State 16-1614

Project Number - 008313110

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 08, 2014. This project is associated with Origins project number X401065-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08 @ 5'	X401065-01	Soil	January 8, 2014 11:30	01/08/2014 16:30
GW01	X401065-02	Water	January 8, 2014 13:00	01/08/2014 16:30

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

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page 1 of 1

4401065

ORIGINS  
LABORATORY, INC

Client: LTE  
Address:  
Telephone Number: 303-433-9789  
Email Address: LRoy@ltenv.com

Project Manager: Chris Roy  
Project Name: Site 16-1614  
Project Number: 008313110  
Samples Collected By: D. Foster

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 Canister #			
SS0105	1/18/14	1130 PM	1						X			1	
GW1	1/19/14	1300	3	X								2	
												3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	

Analysis: BTEX, GRE DRO, Hydrocarbons

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

Relinquished By: [Signature] Date: 1/18/13 Time: 1230  
Relinquished By: [Signature] Date: 1/18/14 Time: 1630

Date Results Needed 1/19/13

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645



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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X401065

Client: LTF

Client Project ID: State 16-1614

Checklist Completed by: Jeff Smith

Shipped Via: H/D  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/8/14 16:44

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☒ Water ☐ Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: 108 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C

Thermometer ID: 7000

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / ( pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

1/9/14 6:09  
Date/Time Reviewed

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

## SS08 @ 5'

1/8/2014 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X401065-01 (Soil)

### Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A08010	01/08/2014	01/09/2014	
Surrogate: o-Terphenyl	118 %	59-131			"	"	"	

### GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A08011	01/08/2014	01/08/2014	
Benzene	ND	0.0040	"	"	"	"	"	
Toluene	ND	0.0040	"	"	"	"	"	
Ethylbenzene	ND	0.0040	"	"	"	"	"	
Xylenes, total	ND	0.0040	"	"	"	"	"	
Napthalene	ND	0.0080	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

Origins Laboratory, Inc.

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4600 West 60th Avenue  
Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

## GW01

1/8/2014 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X401065-02 (Water)

### BTEX by EPA 8260C

Benzene	1190	50.0	ug/L	50	4A08012	01/08/2014	01/08/2014
Toluene	3270	50.0	"	"	"	"	"
Ethylbenzene	167	50.0	"	"	"	"	"
Xylenes, total	2380	50.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	501 %	84-121			"	"	"
Surrogate: Toluene-d8	496 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	499 %	84-114			"	"	"

Origins Laboratory, Inc.

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4600 West 60th Avenue  
Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A08011 - EPA 5030 (soil)</b>										
<b>Blank (4A08011-BLK1)</b>					Prepared: 01/08/2014 Analyzed: 01/08/2014					
Gasoline Range Hydrocarbons	ND	0.40	mg/kg							
Benzene	ND	0.0040	"							
Toluene	ND	0.0040	"							
Ethylbenzene	ND	0.0040	"							
Xylenes, total	ND	0.0040	"							
Naphthalene	ND	0.0080	"							
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

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Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A08011 - EPA 5030 (soil)</b>										
<b>LCS (4A08011-BS1)</b>					Prepared: 01/08/2014 Analyzed: 01/08/2014					
Benzene	0.20	0.0040	mg/kg	0.200		99.2	70-130			
Toluene	0.20	0.0040	"	0.200		101	70-130			
Ethylbenzene	0.20	0.0040	"	0.200		98.4	70-130			
m,p-Xylene	0.40	0.0080	"	0.400		100	70-130			
o-Xylene	0.20	0.0040	"	0.200		101	70-130			
Naphthalene	0.21	0.0080	"	0.200		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A08011 - EPA 5030 (soil)</b>										
<b>Matrix Spike (4A08011-MS1)</b>		<b>Source: X401047-01</b>			Prepared: 01/08/2014 Analyzed: 01/08/2014					
Benzene	0.17	0.0040	mg/kg	0.200	ND	85.5	70-130			
Toluene	0.18	0.0040	"	0.200	ND	87.7	70-130			
Ethylbenzene	0.17	0.0040	"	0.200	ND	85.3	70-130			
m,p-Xylene	0.37	0.0080	"	0.400	ND	91.4	70-130			
o-Xylene	0.17	0.0040	"	0.200	ND	87.3	70-130			
Naphthalene	0.19	0.0080	"	0.200	0.0011	93.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.6	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A08011 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (4A08011-MSD1)</b>		<b>Source: X401047-01</b>			Prepared: 01/08/2014 Analyzed: 01/08/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	91.9	70-130	7.24	20	
Toluene	0.19	0.0040	"	0.200	ND	95.4	70-130	8.41	20	
Ethylbenzene	0.18	0.0040	"	0.200	ND	92.2	70-130	7.73	20	
m,p-Xylene	0.39	0.0080	"	0.400	ND	98.4	70-130	7.31	20	
o-Xylene	0.19	0.0040	"	0.200	ND	95.8	70-130	9.20	20	
Naphthalene	0.18	0.0080	"	0.200	0.0011	89.4	70-130	4.01	20	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A08012 - EPA 5030B (Water)**

**Blank (4A08012-BLK1)**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.1	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.

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Arvada CO 80003

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A08012 - EPA 5030B (Water)**

**LCS (4A08012-BS1)**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Benzene	55.7	1.0	ug/L	50.0		111	74-130			
Toluene	52.6	1.0	"	50.0		105	76-128			
Ethylbenzene	52.6	1.0	"	50.0		105	78-130			
m,p-Xylene	104	2.0	"	100		104	75-134			
o-Xylene	49.8	1.0	"	50.0		99.7	76-129			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.1	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A08012 - EPA 5030B (Water)**

Matrix Spike (4A08012-MS1)		Source: X401052-02			Prepared: 01/08/2014 Analyzed: 01/08/2014					
Benzene	55.1	1.0	ug/L	50.0	ND	110	74-130			
Toluene	52.3	1.0	"	50.0	ND	105	73-131			
Ethylbenzene	53.0	1.0	"	50.0	ND	106	76-132			
m,p-Xylene	105	2.0	"	100	ND	105	69-139			
o-Xylene	52.4	1.0	"	50.0	ND	105	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.2	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.1	84-114			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A08012 - EPA 5030B (Water)**

Matrix Spike Dup (4A08012-MSD1)		Source: X401052-02			Prepared: 01/08/2014 Analyzed: 01/08/2014					
Benzene	54.1	1.0	ug/L	50.0	ND	108	74-130	1.79	20	
Toluene	51.0	1.0	"	50.0	ND	102	73-131	2.61	20	
Ethylbenzene	51.5	1.0	"	50.0	ND	103	76-132	2.83	20	
m,p-Xylene	102	2.0	"	100	ND	102	69-139	3.24	20	
o-Xylene	50.8	1.0	"	50.0	ND	102	74-131	3.06	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.0	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.5	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**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 4A08010 - EPA 3580**

**Blank (4A08010-BLK1)**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 50 g 50.0 101 59-131

**LCS (4A08010-BS1)**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Diesel (C10-C28) 1030 50.0 mg/kg 1000 103 64-121

Surrogate: o-Terphenyl 59 g 50.0 118 59-131

**Matrix Spike (4A08010-MS1)**

**Source: X401045-01**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Diesel (C10-C28) 984 50.0 mg/kg 1000 ND 98.4 53-125

Surrogate: o-Terphenyl 58 g 50.0 116 59-131

**Matrix Spike Dup (4A08010-MSD1)**

**Source: X401045-01**

Prepared: 01/08/2014 Analyzed: 01/08/2014

Diesel (C10-C28) 989 50.0 mg/kg 1000 ND 98.9 53-125 0.526 20

Surrogate: o-Terphenyl 57 g 50.0 115 59-131

Origins Laboratory, Inc.

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LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.

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January 10, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

**Project Name - Noble - State 16-1614**

**Project Number - 008313110**

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 09, 2014. This project is associated with Origins project number X401083-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645



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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

#### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS13 @ 5'	X401083-01	Soil	January 9, 2014 10:30	01/09/2014 16:30
SS14 @ 5'	X401083-02	Soil	January 9, 2014 12:30	01/09/2014 16:30
SS15 @ 5'	X401083-03	Soil	January 9, 2014 13:00	01/09/2014 16:30

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

www.originslaboratory.com

page 1 of 1

X401083

ORIGINS  
LABORATORY, INC

Client: LTE  
Address:  
Telephone Number: 303-433-9788  
Email Address: LGE@ltenu.com

Project Manager: Chris Roy  
Project Name: State 16-1614  
Project Number: 008313110  
Samples Collected By: D. Hoyer

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 #			
SS1305'	1/9/14	1030	1						X			X	1
SS1405'	1/9/14	1230	1						X			X	2
SS1505'	1/9/14	1430	1						X			X	3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Chris Roy	1/9/14	1630	Chris Roy	1/9/14	1630	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Date Results Needed 1/10/14

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order X401083

Client LTE

Client Project ID State 16-1614

Checklist Completed by: Jeff Smith

Shipped Via: H/D

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/9/14 16:40

Airbill #: NA

Matrix(s) Received: (Check all that apply) ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

(Describe)

Cooler Number/Temperature 15.6 °C 1 °C 1 °C 1 °C

Thermometer ID: TMO

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		Sampled Same Day
Is there ice present (document if blue ice is used)?	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	Seal
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	Seal
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

1/10/14 5:51  
Date/Time Reviewed

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS13 @ 5'

1/9/2014 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401083-01 (Soil)

## Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A09010	01/09/2014	01/09/2014
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Surrogate: o-Terphenyl	121 %	59-131			"	"	"
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## GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	4A09011	01/09/2014	01/09/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	ND	0.0020	"	"	"	"	"
Napthalene	ND	0.0040	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"
Surrogate: Toluene-d8	107 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS14 @ 5'

1/9/2014 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401083-02 (Soil)

## Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A09010	01/09/2014	01/09/2014
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Surrogate: o-Terphenyl	94.0 %	59-131			"	"	"
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## GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	4A09011	01/09/2014	01/09/2014
Benzene	0.0680	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	0.0157	0.0020	"	"	"	"	"
Naphthalene	ND	0.0040	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	114 %	70-130			"	"	"
Surrogate: Toluene-d8	109 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS15 @ 5'

1/9/2014 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401083-03 (Soil)

## Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A09010	01/09/2014	01/09/2014
------------------	----	------	-------	---	---------	------------	------------

Surrogate: o-Terphenyl	114 %	59-131			"	"	"
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## GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	4A09011	01/09/2014	01/09/2014
Benzene	0.0541	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	0.0133	0.0020	"	"	"	"	"
Naphthalene	ND	0.0040	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	116 %	70-130			"	"	"
Surrogate: Toluene-d8	107 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4A09011 - EPA 5030 (soil)										
Blank (4A09011-BLK1)					Prepared: 01/09/2014 Analyzed: 01/09/2014					
Gasoline Range Hydrocarbons	ND	0.40	mg/kg							
Benzene	ND	0.0040	"							
Toluene	ND	0.0040	"							
Ethylbenzene	ND	0.0040	"							
Xylenes, total	ND	0.0040	"							
Naphthalene	ND	0.0080	"							
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	67		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		108	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A09011 - EPA 5030 (soil)</b>										
<b>LCS (4A09011-BS1)</b>					Prepared: 01/09/2014 Analyzed: 01/09/2014					
Benzene	0.20	0.0040	mg/kg	0.200		101	70-130			
Toluene	0.22	0.0040	"	0.200		108	70-130			
Ethylbenzene	0.20	0.0040	"	0.200		101	70-130			
m,p-Xylene	0.43	0.0080	"	0.400		107	70-130			
o-Xylene	0.20	0.0040	"	0.200		102	70-130			
Naphthalene	0.24	0.0080	"	0.200		120	70-130			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	69		"	62.5		110	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		111	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A09011 - EPA 5030 (soil)</b>										
<b>Matrix Spike (4A09011-MS1)</b>		<b>Source: X401083-01</b>			Prepared: 01/09/2014 Analyzed: 01/09/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	88.8	70-130			
Toluene	0.19	0.0040	"	0.200	ND	94.3	70-130			
Ethylbenzene	0.18	0.0040	"	0.200	ND	89.5	70-130			
m,p-Xylene	0.40	0.0080	"	0.400	ND	100	70-130			
o-Xylene	0.18	0.0040	"	0.200	ND	91.8	70-130			
Naphthalene	0.077	0.0080	"	0.200	0.0010	38.0	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	67		"	62.5		107	70-130			
Surrogate: 4-Bromofluorobenzene	71		"	62.5		114	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A09011 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (4A09011-MSD1)</b>		<b>Source: X401083-01</b>			Prepared: 01/09/2014 Analyzed: 01/09/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	89.8	70-130	1.19	20	
Toluene	0.19	0.0040	"	0.200	ND	95.9	70-130	1.62	20	
Ethylbenzene	0.18	0.0040	"	0.200	ND	90.3	70-130	0.868	20	
m,p-Xylene	0.36	0.0080	"	0.400	ND	89.3	70-130	11.7	20	
o-Xylene	0.18	0.0040	"	0.200	ND	91.1	70-130	0.743	20	
Naphthalene	0.12	0.0080	"	0.200	0.0010	61.6	70-130	46.9	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	68		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		112	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**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 4A09010 - EPA 3580**

**Blank (4A09010-BLK1)**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 57 g 50.0 114 59-131

**Blank (4A09010-BLK2)**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 46 g 50.0 92.4 59-131

**LCS (4A09010-BS1)**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) 1010 50.0 mg/kg 1000 101 64-121

Surrogate: o-Terphenyl 61 g 50.0 122 59-131

**LCS (4A09010-BS2)**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) 1150 50.0 mg/kg 1000 115 64-121

Surrogate: o-Terphenyl 59 g 50.0 119 59-131

**Matrix Spike (4A09010-MS1)**

**Source: X401067-01**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) 1000 50.0 mg/kg 1000 ND 100 53-125

Surrogate: o-Terphenyl 56 g 50.0 112 59-131

**Matrix Spike (4A09010-MS2)**

**Source: X401083-02**

Prepared: 01/09/2014 Analyzed: 01/09/2014

Diesel (C10-C28) 1090 50.0 mg/kg 1000 ND 109 53-125

Surrogate: o-Terphenyl 59 g 50.0 119 59-131

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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**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 4A09010 - EPA 3580</b>										
<b>Matrix Spike Dup (4A09010-MSD1)</b>		<b>Source: X401067-01</b>			Prepared: 01/09/2014 Analyzed: 01/09/2014					
Diesel (C10-C28)	823	50.0	mg/kg	1000	ND	82.3	53-125	19.6	20	
Surrogate: o-Terphenyl	42		g	50.0		83.5	59-131			
<b>Matrix Spike Dup (4A09010-MSD2)</b>		<b>Source: X401083-02</b>			Prepared: 01/09/2014 Analyzed: 01/09/2014					
Diesel (C10-C28)	892	50.0	mg/kg	1000	ND	89.2	53-125	19.7	20	
Surrogate: o-Terphenyl	44		g	50.0		88.7	59-131			

Origins Laboratory, Inc.

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LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

### 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.

*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.*



January 20, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - State 16-1614

Project Number - 008313110

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 10, 2014. This project is associated with Origins project number X401101-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645



LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS17 @ 5'	X401101-01	Soil	January 10, 2014 9:30	01/10/2014 15:45
SS18 @ 5'	X401101-02	Soil	January 10, 2014 12:15	01/10/2014 15:45

Origins Laboratory, Inc.



Noelle E Doyle, President

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

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page 1 of 1

X40101

**ORIGINS**  
LABORATORY, INC

Client: LTG  
Address:   
Project Manager: Chris Roy  
Project Name: State 16-1614  
Project Number: 008313110  
Samples Collected By: DHAC  
Telephone Number: 303-433-9788  
Email Address: Croy@entriam.com

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
SS1051	1/10/14	0920	1						X			X	1
SS1051	1/10/14	1215	1						X			X	2
												X	3
												X	4
												X	5
												X	6
												X	7
												X	8
												X	9
												X	10

Analysis: BTGX  
GR0 DR0  
Up H2O2

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

Relinquished By: [Signature] Date: 1/10/14 Time: 1545  
Relinquished By: [Signature] Date: 1/10/14 Time: 1345

Date Results Needed: 1/13/14

Origins Laboratory, Inc.

*Noelle E Doyle*

Noelle E Doyle, President

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X40161

Client: LTE

Client Project ID: State 16-1614

Checklist Completed by: Jeff Smith

Shipped Via: Pick up

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/10/14 16:21

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 11.9 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)

Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to be taken in the additional comments above and the case narrative.

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

Noelle E Doyle, President

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS17 @ 5'  
1/10/2014 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401101-01 (Soil)

## Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A10008	01/10/2014	01/10/2014
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Surrogate: o-Terphenyl	109 %	59-131			"	"	"
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## GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	4A10009	01/10/2014	01/10/2014
Benzene	0.0074	0.0020	"	"	"	"	"
Toluene	0.0030	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	0.0044	0.0020	"	"	"	"	"
Naphthalene	ND	0.0040	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130			"	"	"
Surrogate: Toluene-d8	110 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	112 %	70-130			"	"	"

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, President

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS18 @ 5'

1/10/2014 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401101-02 (Soil)

## Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A10008	01/10/2014	01/10/2014
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Surrogate: o-Terphenyl	107 %	59-131			"	"	"
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## GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	4A10009	01/10/2014	01/10/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	ND	0.0020	"	"	"	"	"
Napthalene	ND	0.0040	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	116 %	70-130			"	"	"
Surrogate: Toluene-d8	108 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	112 %	70-130			"	"	"

Origins Laboratory, Inc.



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Noelle E Doyle, President

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A10009 - EPA 5030 (soil)

**Blank (4A10009-BLK1)**

Prepared: 01/10/2014 Analyzed: 01/10/2014

Gasoline Range Hydrocarbons	ND	0.20	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0020	"							
Ethylbenzene	ND	0.0020	"							
Xylenes, total	ND	0.0020	"							
Naphthalene	ND	0.0040	"							
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5	110		70-130			
Surrogate: Toluene-d8	68		"	62.5	109		70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5	110		70-130			

Origins Laboratory, Inc.



Noelle E Doyle, President

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LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

## Volatile Organic Compounds by GC/MS SW846 8260C - 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 4A10009 - EPA 5030 (soil)

LCS (4A10009-BS1)

Prepared: 01/10/2014 Analyzed: 01/10/2014

Benzene	0.10	0.0020	mg/kg	0.100		104	70-130			
Toluene	0.11	0.0020	"	0.100		111	70-130			
Ethylbenzene	0.11	0.0020	"	0.100		106	70-130			
m,p-Xylene	0.21	0.0040	"	0.200		106	70-130			
o-Xylene	0.11	0.0020	"	0.100		107	70-130			
Naphthalene	0.11	0.0040	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	69		"	62.5		110	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		108	70-130			

Origins Laboratory, Inc.



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Noelle E Doyle, President



LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4A10009 - EPA 5030 (soil)

Matrix Spike (4A10009-MS1)		Source: X401101-01			Prepared: 01/10/2014 Analyzed: 01/10/2014					
Benzene	0.11	0.0020	mg/kg	0.100	0.0074	101	70-130			
Toluene	0.11	0.0020	"	0.100	0.0030	109	70-130			
Ethylbenzene	0.10	0.0020	"	0.100	0.0006	102	70-130			
m,p-Xylene	0.19	0.0040	"	0.200	0.0021	95.9	70-130			
o-Xylene	0.11	0.0020	"	0.100	0.0022	104	70-130			
Naphthalene	0.088	0.0040	"	0.100	ND	88.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	67		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	71		"	62.5		114	70-130			

Origins Laboratory, Inc.



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Noelle E Doyle, President



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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control  
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4A10009 - EPA 5030 (soil)

Matrix Spike Dup (4A10009-MSD1)		Source: X401101-01			Prepared: 01/10/2014 Analyzed: 01/10/2014					
Benzene	0.11	0.0020	mg/kg	0.100	0.0074	99.3	70-130	1.47	20	
Toluene	0.11	0.0020	"	0.100	0.0030	109	70-130	0.251	20	
Ethylbenzene	0.10	0.0020	"	0.100	0.0006	101	70-130	0.606	20	
m,p-Xylene	0.22	0.0040	"	0.200	0.0021	107	70-130	10.6	20	
o-Xylene	0.11	0.0020	"	0.100	0.0022	104	70-130	0.547	20	
Naphthalene	0.098	0.0040	"	0.100	ND	98.0	70-130	10.4	20	
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	69		"	62.5		110	70-130			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		113	70-130			

Origins Laboratory, Inc.



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Noelle E Doyle, President

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**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 4A10008 - EPA 3580

**Blank (4A10008-BLK1)**

Prepared: 01/10/2014 Analyzed: 01/10/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 61 g 50.0 121 59-131

**LCS (4A10008-BS1)**

Prepared: 01/10/2014 Analyzed: 01/10/2014

Diesel (C10-C28) 989 50.0 mg/kg 1000 98.9 64-121

Surrogate: o-Terphenyl 51 g 50.0 102 59-131

**Matrix Spike (4A10008-MS1)**

Source: X401101-02

Prepared: 01/10/2014 Analyzed: 01/10/2014

Diesel (C10-C28) 1120 50.0 mg/kg 1000 ND 112 53-125

Surrogate: o-Terphenyl 61 g 50.0 123 59-131

**Matrix Spike Dup (4A10008-MSD1)**

Source: X401101-02

Prepared: 01/10/2014 Analyzed: 01/10/2014

Diesel (C10-C28) 937 50.0 mg/kg 1000 ND 93.7 53-125 17.6 20

Surrogate: o-Terphenyl 45 g 50.0 89.2 59-131

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, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

### 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, President



January 14, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - State 16-1614

Project Number - 008313110

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 13, 2014. This project is associated with Origins project number X401109-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

#### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS21 @ 5'	X401109-01	Soil	January 13, 2014 10:00	01/13/2014 14:50
SS22 @ 5'	X401109-02	Soil	January 13, 2014 12:30	01/13/2014 14:50
SS23 @ 5'	X401109-03	Soil	January 13, 2014 12:40	01/13/2014 14:50

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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

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page 1 of 1

401109

ORIGINS  
LABORATORY, INC

Project Manager: Chris Roy  
Project Name: 4600 State 16-1614  
Project Number: 008313110  
Samples Collected By: D. B. S. R.

Client: LTE  
Address:  
Telephone Number: 303-433-9788  
Email Address: c.roy@ltno.com

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 #		
SS2105-1	1/13/14	600	1					X			BTCX GCRS PRO Asph/Heve	1
SS2205-1	✓	1230	1					X			X X	2
SS2305-1	✓	1240	1					X			X X X	3
												4
												5
												6
												7
												8
												9
												10
Relinquished By: [Signature]	Date: 1/13/14	Time: 1450		Received By: [Signature]	Date: 1/13/14	Time: 1450		Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>				
Relinquished By: [Signature]	Date: 1/13/14	Time: 1450		Received By: [Signature]	Date: 1/13/14	Time: 1450						

Date Results Needed 1/14/14

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X401109

Client: LTE

Client Project ID: State 16-1614

Checklist Completed by: JOSE SMITH

Shipped Via: HTD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/13/14 14:38

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 110-8 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)

Thermometer ID: T008

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		Sampled Same Day
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	See
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		See
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

1/14/14 6:31  
Date/Time Reviewed

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS21 @ 5'

1/13/2014 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X401109-01 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A13009	01/13/2014	01/13/2014
Surrogate: o-Terphenyl	103 %	59-131			"	"	"

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A13006	01/13/2014	01/13/2014
Benzene	ND	0.0040	"	"	"	"	"
Toluene	ND	0.0040	"	"	"	"	"
Ethylbenzene	ND	0.0040	"	"	"	"	"
Xylenes, total	ND	0.0040	"	"	"	"	"
Napthalene	ND	0.0080	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"
Surrogate: Toluene-d8	101 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"

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.*



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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

## SS22 @ 5'

1/13/2014 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X401109-02 (Soil)

### Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A13009	01/13/2014	01/13/2014
Surrogate: o-Terphenyl	118 %	59-131			"	"	"

### GBTEX + Napthalene by 8260C

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A13006	01/13/2014	01/13/2014
Benzene	ND	0.0040	"	"	"	"	"
Toluene	0.0068	0.0040	"	"	"	"	"
Ethylbenzene	ND	0.0040	"	"	"	"	"
Xylenes, total	ND	0.0040	"	"	"	"	"
Napthalene	ND	0.0080	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"
Surrogate: Toluene-d8	103 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS23 @ 5'

1/13/2014 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X401109-03 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A13009	01/13/2014	01/13/2014
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Surrogate: o-Terphenyl	101 %	59-131			"	"	"
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**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A13006	01/13/2014	01/13/2014
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Benzene	ND	0.0040	"	"	"	"	"
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Toluene	ND	0.0040	"	"	"	"	"
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Ethylbenzene	ND	0.0040	"	"	"	"	"
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Xylenes, total	ND	0.0040	"	"	"	"	"
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Napthalene	ND	0.0080	"	"	"	"	"
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Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"
----------------------------------	-------	--------	--	--	---	---	---

Surrogate: Toluene-d8	106 %	70-130			"	"	"
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Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"
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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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A13006 - EPA 5030 (soil)</b>										
<b>Blank (4A13006-BLK1)</b>					Prepared: 01/13/2014 Analyzed: 01/13/2014					
Gasoline Range Hydrocarbons	ND	0.40	mg/kg							
Benzene	ND	0.0040	"							
Toluene	ND	0.0040	"							
Ethylbenzene	ND	0.0040	"							
Xylenes, total	ND	0.0040	"							
Naphthalene	ND	0.0080	"							
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	63		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A13006 - EPA 5030 (soil)</b>										
<b>LCS (4A13006-BS1)</b>					Prepared: 01/13/2014 Analyzed: 01/13/2014					
Benzene	0.18	0.0040	mg/kg	0.200		88.4	70-130			
Toluene	0.17	0.0040	"	0.200		84.8	70-130			
Ethylbenzene	0.17	0.0040	"	0.200		84.5	70-130			
m,p-Xylene	0.37	0.0080	"	0.400		91.7	70-130			
o-Xylene	0.17	0.0040	"	0.200		83.9	70-130			
Naphthalene	0.21	0.0080	"	0.200		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A13006 - EPA 5030 (soil)</b>										
<b>Matrix Spike (4A13006-MS1)</b>		<b>Source: X401098-01</b>			Prepared: 01/13/2014 Analyzed: 01/13/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	89.0	70-130			
Toluene	0.18	0.0040	"	0.200	ND	92.3	70-130			
Ethylbenzene	0.18	0.0040	"	0.200	ND	91.3	70-130			
m,p-Xylene	0.39	0.0080	"	0.400	ND	97.9	70-130			
o-Xylene	0.18	0.0040	"	0.200	ND	88.2	70-130			
Naphthalene	0.20	0.0080	"	0.200	ND	98.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A13006 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (4A13006-MSD1)</b>		<b>Source: X401098-01</b>			Prepared: 01/13/2014 Analyzed: 01/13/2014					
Benzene	0.17	0.0040	mg/kg	0.200	ND	87.5	70-130	1.79	20	
Toluene	0.18	0.0040	"	0.200	ND	91.1	70-130	1.40	20	
Ethylbenzene	0.19	0.0040	"	0.200	ND	93.0	70-130	1.87	20	
m,p-Xylene	0.42	0.0080	"	0.400	ND	105	70-130	7.29	20	
o-Xylene	0.19	0.0040	"	0.200	ND	93.7	70-130	6.03	20	
Naphthalene	0.21	0.0080	"	0.200	ND	105	70-130	6.66	20	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**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 4A13009 - EPA 3580**

**Blank (4A13009-BLK1)**

Prepared: 01/13/2014 Analyzed: 01/13/2014

Diesel (C10-C28)	ND	50.0	mg/kg							
Surrogate: o-Terphenyl	48		g	50.0		96.5	59-131			

**LCS (4A13009-BS1)**

Prepared: 01/13/2014 Analyzed: 01/13/2014

Diesel (C10-C28)	781	50.0	mg/kg	1000		78.1	64-121			
Surrogate: o-Terphenyl	40		g	50.0		80.4	59-131			

**Matrix Spike (4A13009-MS1)**

**Source: X401086-09**

Prepared: 01/13/2014 Analyzed: 01/13/2014

Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	53-125			
Surrogate: o-Terphenyl	58		g	50.0		115	59-131			

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.*

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008313110

Project: Noble - State 16-1614

### 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.*





January 15, 2014

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - State 16-1614

Project Number - 008313110

Attached are your analytical results for Noble - State 16-1614 received by Origins Laboratory, Inc. January 14, 2014. This project is associated with Origins project number X401126-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

#### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS26 @ 5'	X401126-01	Soil	January 14, 2014 9:00	01/14/2014 16:00
SS27 @ 5'	X401126-02	Soil	January 14, 2014 10:00	01/14/2014 16:00

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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

www.originslaboratory.com

page 1 of 1

X401126

ORIGINS  
LABORATORY, INC

Project Manager: Chris Roy  
Project Name: State 16-1614  
Project Number: 008313110  
Samples Collected By: D. Hester

Client: LTE  
Address:  
Telephone Number: 303-433-9788  
Email Address: Lave@ltenv.com

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 Canister #			Other
SS2025-1	1/14/14	0900	1									1	
SS2025-1	1/14/14	1000	1									2	
												3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	
Relinquished By:	Date: 1/14/14	Time: 1600											Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:											

Date Results Needed: 1/15/14

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: X401126

Client: LTE

Client Project ID: State 16-1614

Checklist Completed by: Jesse Smith

Shipped Via: H/D  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/14/14 16:38

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: 16.9 °C 1 °C 1 °C 1 °C

Thermometer ID: 7002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	Soil
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	Soil
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (narrative) and the case narrative.

Reviewed by (Project Manager)

1/15/14 5:40  
Date/Time Reviewed

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.

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

SS26 @ 5'

1/14/2014 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X401126-01 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A14007	01/14/2014	01/14/2014
Surrogate: o-Terphenyl	108 %	59-131			"	"	"

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A14008	01/14/2014	01/14/2014
Benzene	ND	0.0040	"	"	"	"	"
Toluene	ND	0.0040	"	"	"	"	"
Ethylbenzene	ND	0.0040	"	"	"	"	"
Xylenes, total	ND	0.0040	"	"	"	"	"
Napthalene	ND	0.0080	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	118 %	70-130			"	"	"
Surrogate: Toluene-d8	106 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"

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.

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

Chris Roy  
 Project Number: 008313110  
 Project: Noble - State 16-1614

**SS27 @ 5'**

**1/14/2014 10:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X401126-02 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	4A14007	01/14/2014	01/14/2014	
Surrogate: o-Terphenyl	113 %	59-131			"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.40	mg/kg	1	4A14008	01/14/2014	01/14/2014	
Benzene	ND	0.0040	"	"	"	"	"	
Toluene	ND	0.0040	"	"	"	"	"	
Ethylbenzene	ND	0.0040	"	"	"	"	"	
Xylenes, total	ND	0.0040	"	"	"	"	"	
Napthalene	ND	0.0080	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	115 %	70-130			"	"	"	
Surrogate: Toluene-d8	108 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %	70-130			"	"	"	

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.*

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A14008 - EPA 5030 (soil)</b>										
<b>Blank (4A14008-BLK1)</b>					Prepared: 01/14/2014 Analyzed: 01/14/2014					
Gasoline Range Hydrocarbons	ND	0.40	mg/kg							
Benzene	ND	0.0040	"							
Toluene	ND	0.0040	"							
Ethylbenzene	ND	0.0040	"							
Xylenes, total	ND	0.0040	"							
Naphthalene	ND	0.0080	"							
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	68		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		111	70-130			

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

Chris Roy  
Project Number: 008313110  
Project: Noble - State 16-1614

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A14008 - EPA 5030 (soil)</b>										
<b>LCS (4A14008-BS1)</b>					Prepared: 01/14/2014 Analyzed: 01/14/2014					
Benzene	0.20	0.0040	mg/kg	0.200		99.1	70-130			
Toluene	0.21	0.0040	"	0.200		106	70-130			
Ethylbenzene	0.20	0.0040	"	0.200		100	70-130			
m,p-Xylene	0.40	0.0080	"	0.400		100	70-130			
o-Xylene	0.20	0.0040	"	0.200		101	70-130			
Naphthalene	0.20	0.0080	"	0.200		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	68		"	62.5		109	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		111	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A14008 - EPA 5030 (soil)</b>										
<b>Matrix Spike (4A14008-MS1)</b>		<b>Source: X401126-02</b>			Prepared: 01/14/2014 Analyzed: 01/14/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	91.8	70-130			
Toluene	0.18	0.0040	"	0.200	ND	89.5	70-130			
Ethylbenzene	0.17	0.0040	"	0.200	ND	85.7	70-130			
m,p-Xylene	0.33	0.0080	"	0.400	ND	82.8	70-130			
o-Xylene	0.17	0.0040	"	0.200	ND	86.5	70-130			
Naphthalene	0.16	0.0080	"	0.200	ND	80.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		116	70-130			
Surrogate: Toluene-d8	67		"	62.5		107	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		110	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4A14008 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (4A14008-MSD1)</b>			<b>Source: X401126-02</b>		Prepared: 01/14/2014 Analyzed: 01/14/2014					
Benzene	0.18	0.0040	mg/kg	0.200	ND	87.5	70-130	4.77	20	
Toluene	0.18	0.0040	"	0.200	ND	88.2	70-130	1.53	20	
Ethylbenzene	0.17	0.0040	"	0.200	ND	84.0	70-130	1.98	20	
m,p-Xylene	0.33	0.0080	"	0.400	ND	82.8	70-130	0.0362	20	
o-Xylene	0.17	0.0040	"	0.200	ND	85.0	70-130	1.68	20	
Naphthalene	0.19	0.0080	"	0.200	ND	92.8	70-130	14.2	20	
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		116	70-130			
Surrogate: Toluene-d8	67		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		110	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**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 4A14007 - EPA 3580**

**Blank (4A14007-BLK1)**

Prepared: 01/14/2014 Analyzed: 01/14/2014

Diesel (C10-C28) ND 50.0 mg/kg

Surrogate: o-Terphenyl 48 g 50.0 96.0 59-131

**LCS (4A14007-BS1)**

Prepared: 01/14/2014 Analyzed: 01/14/2014

Diesel (C10-C28) 991 50.0 mg/kg 1000 99.1 64-121

Surrogate: o-Terphenyl 52 g 50.0 104 59-131

**Matrix Spike (4A14007-MS1)**

**Source: X401118-02**

Prepared: 01/14/2014 Analyzed: 01/14/2014

Diesel (C10-C28) 742 50.0 mg/kg 1000 ND 74.2 53-125

Surrogate: o-Terphenyl 37 g 50.0 74.4 59-131

**Matrix Spike Dup (4A14007-MSD1)**

**Source: X401118-02**

Prepared: 01/14/2014 Analyzed: 01/14/2014

Diesel (C10-C28) 870 50.0 mg/kg 1000 ND 87.0 53-125 15.9 20

Surrogate: o-Terphenyl 45 g 50.0 89.6 59-131

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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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