

FREMONT ENVIRONMENTAL INC.

September 4, 2018

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Ave,
Greeley, CO 80634

Subject: **Excavation Report**
 Duncan D11-13
 API # 05-123-15936
 SWSW Sec 11, T3N, R64W
 Weld County, Colorado
 Fremont Project No. C018-100
 Facility #328396

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Excavation Report for the Duncan D11-13 release site in Weld County, Colorado. The enclosed report describes excavation actions to remove impacted soil from the site.

Noble Energy Inc. should request that a No Further Action (NFA) determination be provided by the Colorado Oil and Gas Conservation Commission (COGCC) for this site.

Please contact me at (303) 956-8714 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.



Paul V. Henahan, P.E.
Senior Consultant

Enclosure

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

EXCAVATION REPORT
NOBLE ENERGY INC.
DUNCAN D11-13
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C018-100
FACILITY #328396

Prepared by:

Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714

September 4, 2018

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EXCAVATION REPORT
NOBLE ENERGY INC.
DUNCAN D11-13
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C018-100
FACILITY #328396

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Duncan D11-13 release location in Weld County, Colorado. Impacted soil was identified at this site due to an historical release from the produced water vault. This excavation project was completed on August 22, 2018.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Duncan D11-13 site is located on the Gutterson Ranch approximately 10 miles south of Kersey, Colorado in Weld County as shown on Figure 1. The site is located in a rural area two miles east of the intersection of County Road 34 and County Road 53. The location is further described as the SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 11, Township 3N, Range 64W.

2.2 Site History

The site consists of the former produced water vault for the Duncan D11-13 natural gas well. This well was drilled in 1992 to a depth of approximately 7,038 feet. Soil impacts were identified below and adjacent to the former produced water vault during abandonment of the facility. These soil impacts initiated this excavation effort.

3.0 FIELD ACTIVITIES

Remediation efforts consisted of the excavation of petroleum-impacted soil at this site. The soil consisted of roadbase which was underlain by silty sand to a depth of approximately 13 feet. The sand was then underlain by a weathered shale that extended to a depth of at least 20 feet. Ground water was not encountered during the excavation work. The 26' x 47' x 20' deep excavated area is shown on Figure 2.

Excavation was initiated in the location of the flow line release on August 17, 2018. The soil was excavated to a depth of 20 feet below the former produced water vault location. Soil removal took place primarily in the area adjacent to and below the former water vault and aboveground storage tank. Excavation continued until all soil impacts were excavated on August 22, 2018. Approximately 80 yards of clean overburden were reused for backfill, therefore, one soil sample was collected from the clean overburden stockpile prior to backfilling.

The sidewall samples were collected as grab samples along the excavation wall at a depth of 13 to 17 feet. Two floor samples were collected at a depth of 20 feet. The soil samples were analyzed by Summit Scientific Inc. of Golden, Colorado for benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene, Total Petroleum Hydrocarbons - Gasoline Range Organics (TPH-GRO) by EPA method 8260C, and TPH - Diesel Range Organics (TPH-DRO) by EPA method 8015. The laboratory report and chain-of-custody documentation are included in Appendix A.

A summarization of the laboratory data is included in Table 1, which presents the laboratory analyses for each soil sample. The laboratory analyses indicated that the soil samples collected from the overburden stockpile, sidewalls and floor achieved the COGCC Table 910-1 limits.

A total of approximately 930 cubic yards of petroleum impacted soil were removed by Gusher Oilfield Services Inc. from the location during the course of this project. The impacted soil was disposed of at the Waste Management Inc. Buffalo Ridge landfill in Keenesburg, Colorado as non-hazardous waste.

4.0 DISCUSSION

Site remediation of the Duncan D11-13 location was completed on August 22, 2018 by excavation and removal of impacted soil. Approximately 930 cubic yards of impacted soil were excavated and transported from this site. Floor and sidewall samples confirmed that the impacted soil has been removed.

As demonstrated by the soil sampling and analyses, the petroleum impacted soil was removed from the site by excavation. This was confirmed by the analyses of the soil samples collected from the excavation floor and sidewalls which were below the COGCC Table 910-1 limits. Therefore, Noble should request a no further action (NFA) determination from the COGCC.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



9/4/18

Date _____

Paul V. Henehan, P.E.
Senior Consultant

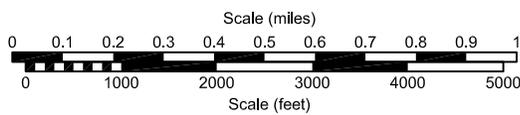
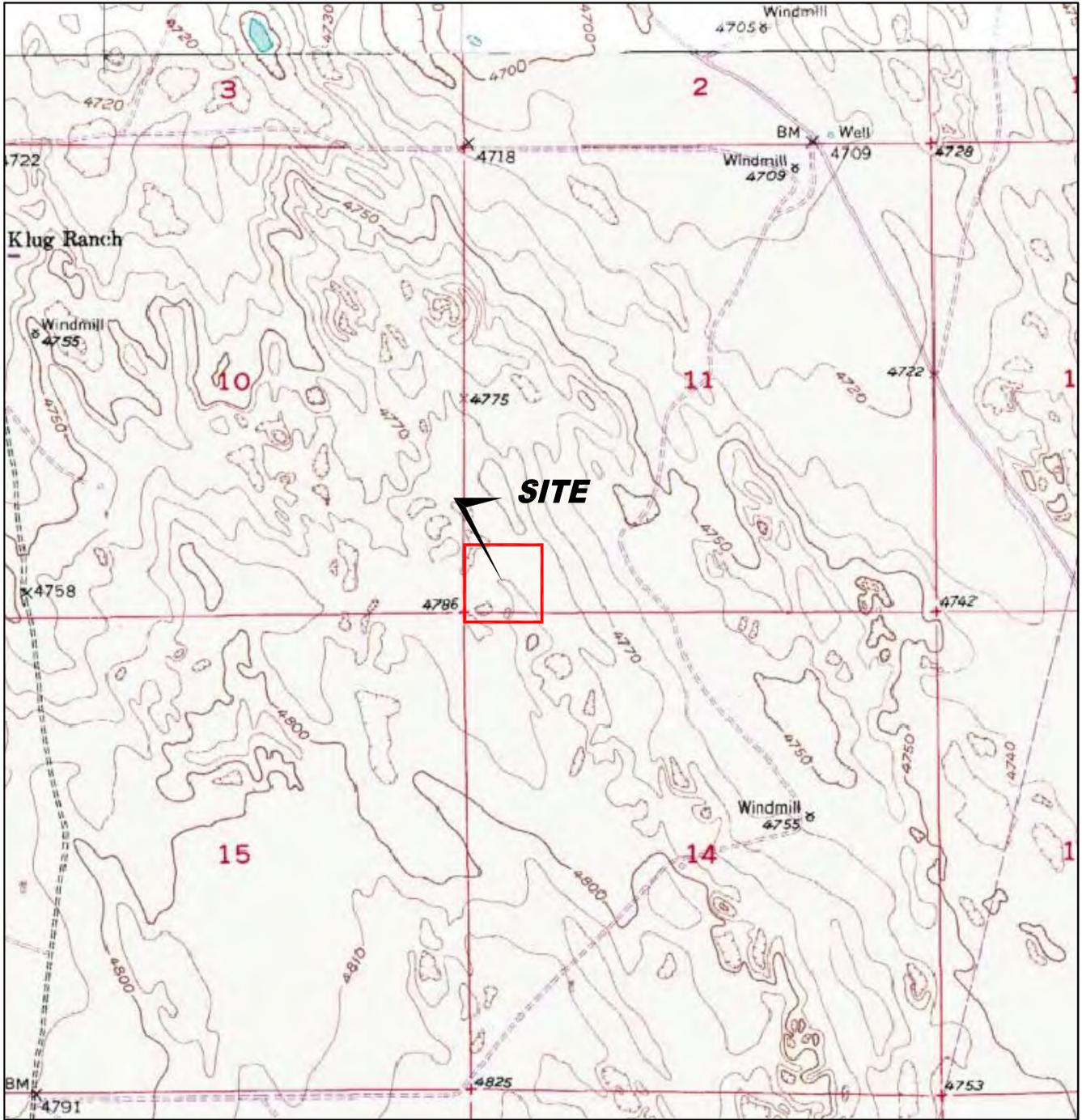
TABLES

TABLE 1
SUMMARY OF SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
DUNCAN D11-13, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C018-100

Sample	Depth (ft)	Date Sampled	Location	Pass or Fail	Benzene mg/kg	Toluene mg/kg	Ethyl-Benzene mg/kg	Xylenes mg/kg	Naphthalene mg/kg	TPH GRO mg/kg	TPH DRO mg/kg
N Wall 14 Ft	14	8/17/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
S Wall 15 Ft	15	8/17/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
Floor 20 Ft	20	8/17/2018	Floor	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
N Wall #2 14 Ft	14	8/20/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
S Wall #2 13 Ft	13	8/20/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
W Wall 16 Ft	16	8/20/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
W Wall #2 14 Ft	14	8/20/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
Floor #2 20 Ft	20	8/20/2018	Floor	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
E Wall 17 Ft	17	8/21/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
Overburden-1	0.3	8/21/2018	Spoil	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
COGCC Table 910-1 Limits					0.17	85	100	175	23	500	500

Bold faced values exceed the COGCC Table 910-1 concentrations

FIGURES



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Duncan D11-13
 SW SW Section 11, T3N, R64W
 Weld County, Colorado

Project No. C018-100	Prepared by TDA	Drawn by TDA
Date 8/16/18	Reviewed by PH	Filename 18100T





LEGEND

- LIMITS OF EXCAVATION
 - ||||| CONTAINMENT BERM
 - ==== EXTENT OF CONTAINMENT
 - o--- FENCE LINE
- FORMER

FORMER FACILITY

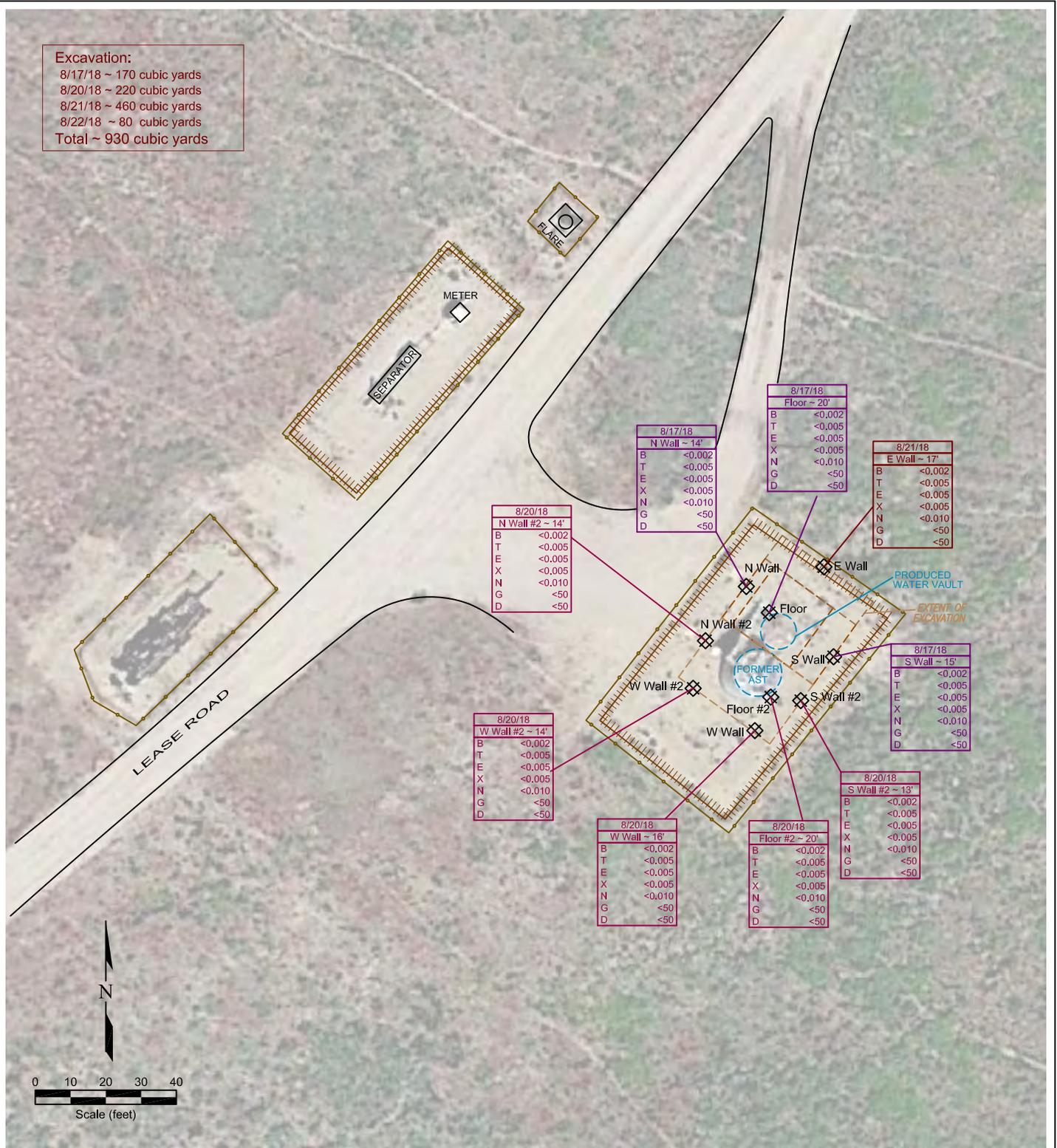
**Figure 2
SITE MAP**

Noble Duncan D11-13
SW SW Section 11, T3N, R64W
Weld County, Colorado

Project No. C018-100	Prepared by TDA	Drawn by TDA
Date 8/16/18	Reviewed by PH	Filename 18100Q



Excavation:
 8/17/18 ~ 170 cubic yards
 8/20/18 ~ 220 cubic yards
 8/21/18 ~ 460 cubic yards
 8/22/18 ~ 80 cubic yards
 Total ~ 930 cubic yards



LEGEND

- SOIL SAMPLE LOCATION
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- EXTENT OF CONTAINMENT
- FENCE LINE
- FORMER FACILITY

8/17/18	
N Wall ~ 16'	
B	<0.002
T	<0.005
E	<0.005
X	<0.005
N	<0.010
G	<50
D	<50

Figure 3
EXCAVATION SOIL CHEMISTRY

Noble Duncan D11-13
 SW SW Section 11, T3N, R64W
 Weld County, Colorado

Project No. C018-100	Prepared by TDA	Drawn by TDA
Date 9/4/18	Reviewed by PH	Filename 18100E



APPENDIX A

LABORATORY DOCUMENTATION

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 20, 2018

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Duncan D11-13

Enclosed are the results of analyses for samples received by Summit Scientific on 08/17/18 13:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/20/18 06:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N. Wall 14 FT	1808240-01	Soil	08/17/18 00:00	08/17/18 13:50
S. Wall 15 FT	1808240-02	Soil	08/17/18 00:00	08/17/18 13:50
Floor 20 FT	1808240-03	Soil	08/17/18 00:00	08/17/18 13:50

Summit Scientific

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.

Summit Scientific

S₂

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

1808240

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henehan

Bill to Jacob

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714

Fax:

Project Name: NOBLE - DUNCAN D11-13

Sampler Name: HENEHAN

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions		
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRO/DRO	Napthalene	SAR	EC		pH	
1	N. WALL 14 FT	8/17/18		1			✓			✓				✓	✓	✓				
2	S. WALL 15 FT			1			✓			✓				✓	✓	✓				
3	FLOOR 20 FT			1			✓			✓				✓	✓	✓				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: PLATFE	Date/Time: 8/17/18 13:50	Received by: [Signature]	Date/Time: 8-17-18 13:50	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 72 hours <input type="checkbox"/> Standard Sample Integrity: PLZ Temperature Upon Receipt: 8.9 Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1808240

Client: FREMONT Client Project ID: NOBLE-DUNCAN DU-13

Shipped Via: H.D. ONICE Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	8.9
-----------	-----

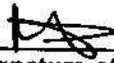
Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
<small>NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.</small>				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
<small>Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect</small>				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Mur
 Custodian Printed Name or Initials

 8-17-18
 Signature of Custodian

15:00
 Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/20/18 06:30

N. Wall 14 FT
1808240-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808235	08/17/18	08/18/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		97.6 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %		21-167	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808236	08/17/18	08/18/18	EPA 8015M	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		104 %		30-150	"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/20/18 06:30

S. Wall 15 FT
1808240-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808235	08/17/18	08/18/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808236	08/17/18	08/18/18	EPA 8015M	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/20/18 06:30

Floor 20 FT
1808240-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808235	08/17/18	08/18/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.7 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808236	08/17/18	08/18/18	EPA 8015M	

Date Sampled: **08/17/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/20/18 06:30

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1808235 - EPA 5030 Soil MS

Blank (1808235-BLK1)

Prepared: 08/17/18 Analyzed: 08/19/18

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0396		98.6	23-173				
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	21-167				

LCS (1808235-BS1)

Prepared: 08/17/18 Analyzed: 08/19/18

Benzene	0.0780	0.0020	mg/kg	0.100		78.0	70-130				
Toluene	0.0910	0.0050	"	0.100		91.0	70-130				
Ethylbenzene	0.0997	0.0050	"	0.100		99.7	70-130				
m,p-Xylene	0.154	0.010	"	0.200		77.0	70-130				
o-Xylene	0.0942	0.0050	"	0.100		94.2	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0396		96.4	23-173				
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	21-167				

Matrix Spike (1808235-MS1)

Source: 1808238-10

Prepared: 08/17/18 Analyzed: 08/19/18

Benzene	0.0791	0.0020	mg/kg	0.100	ND	79.1	70-130				
Toluene	0.0921	0.0050	"	0.100	ND	92.1	70-130				
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130				
m,p-Xylene	0.157	0.010	"	0.200	ND	78.4	70-130				
o-Xylene	0.0965	0.0050	"	0.100	ND	96.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0396		98.1	23-173				
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	21-167				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/20/18 06:30

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1808235 - EPA 5030 Soil MS

Matrix Spike Dup (1808235-MSD1)	Source: 1808238-10			Prepared: 08/17/18 Analyzed: 08/19/18						
Benzene	0.0782	0.0020	mg/kg	0.100	ND	78.2	70-130	1.11	30	
Toluene	0.0902	0.0050	"	0.100	ND	90.2	70-130	2.07	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	0.680	30	
m,p-Xylene	0.157	0.010	"	0.200	ND	78.4	70-130	0.00	30	
o-Xylene	0.0970	0.0050	"	0.100	ND	97.0	70-130	0.527	30	
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0396		98.7	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/20/18 06:30

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1808236 - EPA 3550A

Blank (1808236-BLK1)

Prepared & Analyzed: 08/17/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1808236-BS1)

Prepared & Analyzed: 08/17/18

C10-C28 (DRO) 579 50 mg/kg 500 116 70-130

Matrix Spike (1808236-MS1)

Source: 1808238-10

Prepared & Analyzed: 08/17/18

C10-C28 (DRO) 600 50 mg/kg 500 21.4 116 70-130

Matrix Spike Dup (1808236-MSD1)

Source: 1808238-10

Prepared & Analyzed: 08/17/18

C10-C28 (DRO) 587 50 mg/kg 500 21.4 113 70-130 2.20 20

Summit Scientific

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.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/20/18 06:30

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 21, 2018

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Duncan D11-13

Enclosed are the results of analyses for samples received by Summit Scientific on 08/20/18 16:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
Project Manager: Paul Henehan

Reported:
08/21/18 06:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W Wall@16'	1808261-01	Soil	08/20/18 09:45	08/20/18 16:35
S Wall #2@13'	1808261-02	Soil	08/20/18 11:05	08/20/18 16:35
Floor #2@20'	1808261-03	Soil	08/20/18 15:00	08/20/18 16:35
N Wall #2@14'	1808261-04	Soil	08/20/18 15:20	08/20/18 16:35
W Wall #2@14'	1808261-05	Soil	08/20/18 15:25	08/20/18 16:35

Summit Scientific

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.

Summit Scientific

741 Corporate Circle, Suite J • Golden, Colorado 80401
303-277-9310 • 303-374-5933

1808261

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henahan

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714

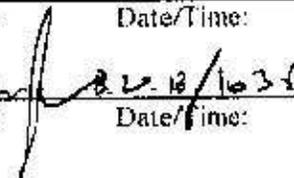
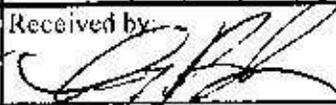
Fax:

Project Name: NOBLE DUNCAN DU-13

Sampler Name: Resonance

Project Number: C-18-100

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GR/DRO	Napthalene	SAR	EC		Pb
1	W Wall # 16'	8.20.18	945	1			X			X			X	X	X				
2	S wall # 2 @ 13'	8.20.18	1105	1			X			X			X	X	X				
3	Floor # 2 @ 20'	8.20.18	1500	1			X			X			X	X	X				
4	N wall # 2 @ 14'	8.20.18	1520	1			X			X			X	X	X				
5	W wall # 2 @ 14'	8.20.18	1525	1			X			X			X	X	X				
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 8.20.18/1035	Received by: 	Date/Time: 8-20-18 1055	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 72 hours <input type="checkbox"/> Standard Sample Integrity: Temperature Upon Receipt: Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order: 808261

Client: Fremont Client Project ID: Noble Duncan D11-13

Shipped Via: Pickup Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	25.0
-----------	------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	/			
<small>NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.</small>				
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
If custody seals are present, are they intact ⁽¹⁾ ?			/	
Are samples with holding times due within 48 hours sample due within 48 hours present?			/	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace present? if yes, contact client and note in narrative.			/	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			/	
<small>Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect</small>				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			/	
<small>Record the pH in Comments.</small>				
If dissolved metals are requested, were samples field filtered?			/	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

LP
 Custodian Printed Name or Initials

[Signature]
 Signature or Initials of Custodian

8-20-18 1805
 Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

W Wall@16'
1808261-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/18 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808250	08/20/18	08/20/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/18 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/18 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808252	08/20/18	08/20/18	EPA 8015M	

Date Sampled: **08/20/18 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

S Wall #2@13'
1808261-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808250	08/20/18	08/20/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808252	08/20/18	08/20/18	EPA 8015M	

Date Sampled: **08/20/18 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

Floor #2@20'
1808261-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/18 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808250	08/20/18	08/20/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/18 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/18 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808252	08/20/18	08/20/18	EPA 8015M	

Date Sampled: **08/20/18 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

N Wall #2@14'
1808261-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/18 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808250	08/20/18	08/20/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/18 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/18 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808252	08/20/18	08/20/18	EPA 8015M	

Date Sampled: **08/20/18 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

W Wall #2@14'
1808261-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/18 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808250	08/20/18	08/20/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/18 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/18 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808252	08/20/18	08/20/18	EPA 8015M	

Date Sampled: **08/20/18 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1808250 - EPA 5030 Soil MS

Blank (1808250-BLK1)

Prepared: 08/20/18 Analyzed: 08/21/18

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0396	96.2	23-173					
Surrogate: Toluene-d8	0.0390		"	0.0400	97.6	20-170					
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400	95.6	21-167					

LCS (1808250-BS1)

Prepared: 08/20/18 Analyzed: 08/21/18

Benzene	0.0763	0.0020	mg/kg	0.100	76.3	70-130					
Toluene	0.0889	0.0050	"	0.100	88.9	70-130					
Ethylbenzene	0.0971	0.0050	"	0.100	97.1	70-130					
m,p-Xylene	0.152	0.010	"	0.200	76.2	70-130					
o-Xylene	0.0929	0.0050	"	0.100	92.9	70-130					
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0396	94.2	23-173					
Surrogate: Toluene-d8	0.0394		"	0.0400	98.5	20-170					
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400	91.7	21-167					

Matrix Spike (1808250-MS1)

Source: 1808262-01

Prepared: 08/20/18 Analyzed: 08/21/18

Benzene	0.0772	0.0020	mg/kg	0.100	77.2	70-130					
Toluene	0.0904	0.0050	"	0.100	90.4	70-130					
Ethylbenzene	0.0983	0.0050	"	0.100	98.3	70-130					
m,p-Xylene	0.153	0.010	"	0.200	76.7	70-130					
o-Xylene	0.0945	0.0050	"	0.100	94.5	70-130					
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0396	94.3	23-173					
Surrogate: Toluene-d8	0.0388		"	0.0400	96.9	20-170					
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400	94.6	21-167					

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1808250 - EPA 5030 Soil MS

Matrix Spike Dup (1808250-MSD1)	Source: 1808262-01			Prepared: 08/20/18 Analyzed: 08/21/18	
Benzene	0.0787	0.0020	mg/kg	0.100	78.7 70-130 1.88 30
Toluene	0.0904	0.0050	"	0.100	90.4 70-130 0.00 30
Ethylbenzene	0.0993	0.0050	"	0.100	99.3 70-130 0.971 30
m,p-Xylene	0.154	0.010	"	0.200	77.1 70-130 0.585 30
o-Xylene	0.0944	0.0050	"	0.100	94.4 70-130 0.0318 30
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0396	96.0 23-173
Surrogate: Toluene-d8	0.0389		"	0.0400	97.3 20-170
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400	95.6 21-167

Summit Scientific

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
 Project Manager: Paul Henehan

Reported:
 08/21/18 06:46

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1808252 - EPA 3550A

Blank (1808252-BLK1)

Prepared: 08/20/18 Analyzed: 08/21/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1808252-BS1)

Prepared: 08/20/18 Analyzed: 08/21/18

C10-C28 (DRO) 474 50 mg/kg 500 94.7 70-130

Matrix Spike (1808252-MS1)

Source: 1808261-01

Prepared: 08/20/18 Analyzed: 08/21/18

C10-C28 (DRO) 465 50 mg/kg 500 29.3 87.1 70-130

Matrix Spike Dup (1808252-MSD1)

Source: 1808261-01

Prepared: 08/20/18 Analyzed: 08/21/18

C10-C28 (DRO) 495 50 mg/kg 500 29.3 93.1 70-130 6.18 20

Summit Scientific

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.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: C018-100
Project Manager: Paul Henehan

Reported:
08/21/18 06:46

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 22, 2018

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Duncan D11-13

Enclosed are the results of analyses for samples received by Summit Scientific on 08/21/18 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/22/18 06:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E Wall 17 FT	1808275-01	Soil	08/21/18 00:00	08/21/18 16:30
Over-1	1808275-02	Soil	08/21/18 00:00	08/21/18 16:30

Summit Scientific

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Summit Scientific

741 Corporate Circle, Suite J • Golden, Colorado 80401
303-277-9310 • 303-374-5933

808275

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Heenan

Bill to JACOBS

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714

Fax:

Project Name: NOBLE - DUNCAN D11-13

Sampler Name: HEENAN

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRO/DRO	Napthalene	SAR	EC		PH
1	E. WALL 17 FT	8/21/18		1			✓			✓			✓	✓	✓				
2	OVER - 1	"		1			✓			✓			✓	✓	✓				
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>PA/KE</i>	Date/Time: 8/21/18 16:30	Received by: <i>[Signature]</i>	Date/Time: 8-21-18 1630	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> Standard Sample Integrity: Temperature Upon Receipt: 14.8 Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: WED AM PLZ
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1808275

Client: Fremont Client Project ID: Noble - Duncan D11-13

Shipped Via: Hand Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>14.8</u>
-----------	-------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

UP
 Custodian Printed Name or Initials

[Signature]
 Signature of Custodian

1825
 Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/22/18 06:26

E Wall 17 FT
1808275-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808261	08/21/18	08/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808262	08/21/18	08/21/18	EPA 8015M	

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Summit Scientific

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Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/22/18 06:26

Over-1
1808275-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1808261	08/21/18	08/21/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1808262	08/21/18	08/21/18	EPA 8015M	

Date Sampled: **08/21/18 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

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Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/22/18 06:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1808261 - EPA 5030 Soil MS

Blank (1808261-BLK1)

Prepared & Analyzed: 08/21/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0383		"	0.0396		96.7	23-173			
<i>Surrogate: Toluene-d8</i>	0.0394		"	0.0400		98.6	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0380		"	0.0400		95.0	21-167			

LCS (1808261-BS1)

Prepared: 08/21/18 Analyzed: 08/22/18

Benzene	0.0754	0.0020	mg/kg	0.100		75.4	70-130			
Toluene	0.0870	0.0050	"	0.100		87.0	70-130			
Ethylbenzene	0.0967	0.0050	"	0.100		96.7	70-130			
m,p-Xylene	0.217	0.010	"	0.200		108	70-130			
o-Xylene	0.0916	0.0050	"	0.100		91.6	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0368		"	0.0396		92.9	23-173			
<i>Surrogate: Toluene-d8</i>	0.0388		"	0.0400		97.1	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0376		"	0.0400		93.9	21-167			

Matrix Spike (1808261-MS1)

Source: 1808274-01

Prepared: 08/21/18 Analyzed: 08/22/18

Benzene	0.0772	0.0020	mg/kg	0.100	ND	77.2	70-130			
Toluene	0.0893	0.0050	"	0.100	ND	89.3	70-130			
Ethylbenzene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
m,p-Xylene	0.233	0.010	"	0.200	ND	117	70-130			
o-Xylene	0.0942	0.0050	"	0.100	ND	94.2	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0375		"	0.0396		94.8	23-173			
<i>Surrogate: Toluene-d8</i>	0.0390		"	0.0400		97.4	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0375		"	0.0400		93.8	21-167			

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 Project Manager: Paul Henehan

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1808261 - EPA 5030 Soil MS

Matrix Spike Dup (1808261-MSD1)	Source: 1808274-01			Prepared: 08/21/18 Analyzed: 08/22/18						
Benzene	0.0775	0.0020	mg/kg	0.100	ND	77.5	70-130	0.349	30	
Toluene	0.0899	0.0050	"	0.100	ND	89.9	70-130	0.737	30	
Ethylbenzene	0.0987	0.0050	"	0.100	ND	98.7	70-130	1.09	30	
m,p-Xylene	0.226	0.010	"	0.200	ND	113	70-130	3.05	30	
o-Xylene	0.0929	0.0050	"	0.100	ND	92.9	70-130	1.31	30	
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0396		93.9	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.1	21-167			

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Project: Noble - Duncan D11-13

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/22/18 06:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1808262 - EPA 3550A

Blank (1808262-BLK1)

Prepared: 08/21/18 Analyzed: 08/22/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1808262-BS1)

Prepared: 08/21/18 Analyzed: 08/22/18

C10-C28 (DRO) 492 50 mg/kg 500 98.4 70-130

Matrix Spike (1808262-MS1)

Source: 1808274-01

Prepared: 08/21/18 Analyzed: 08/22/18

C10-C28 (DRO) 552 50 mg/kg 500 75.7 95.2 70-130

Matrix Spike Dup (1808262-MSD1)

Source: 1808274-01

Prepared: 08/21/18 Analyzed: 08/22/18

C10-C28 (DRO) 529 50 mg/kg 500 75.7 90.7 70-130 4.16 20

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08/22/18 06:26

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference