

REMEDIAL EXCAVATION REPORT

OCAMA G25-16

ECMC SPILL TRACKING # 483780

ECMC REMEDIATION # 23870

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - OCOMA G25-16

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-A@5'	03/29/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-B@3'	03/29/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@9'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS01@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS02@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS03@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS04@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS07@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS08@8'	05/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS05@8'	05/20/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS06@8'	05/20/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@5'	03/29/23	7.39	0.0213	0.164	0.0455
FL01-B@3'	03/29/23	7.87	0.114	0.195	0.0668

Sample ID	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS01@9'	5/17/2024	2.74	66.2	NA	NA	NA	6.42	NA	NA	NA	NA
SS01@8'	5/17/2024	1.37	19.0	NA	NA	NA	10.6	NA	NA	NA	NA
SS02@8'	5/17/2024	1.61	11.5	NA	NA	NA	10.9	NA	NA	NA	NA
SS03@8'	5/17/2024	5.18	13.6	NA	NA	NA	17.0	NA	NA	NA	NA
SS04@8'	5/17/2024	1.62	13.6	NA	NA	NA	9.77	NA	NA	NA	NA
SS07@8'	5/17/2024	1.16	15.4	NA	NA	NA	16.3	NA	NA	NA	NA
SS08@8'	5/17/2024	1.64	14.0	NA	NA	NA	8.46	NA	NA	NA	NA
SS05@8'	5/20/2024	0.914	36.8	NA	NA	NA	2.97	NA	NA	NA	NA
SS06@8'	5/20/2024	1.15	56.2	NA	NA	NA	4.16	NA	NA	NA	NA

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

ECMC = Energy & Carbon Mangement Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

NA = Not Analyzed

< = Analytical result is less than the indicated laboratory reporting limit

Highlighted results are equal to or exceed the ECMC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benzo(a) = Benzanthracene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

Benzo(a) = Benzopyrene

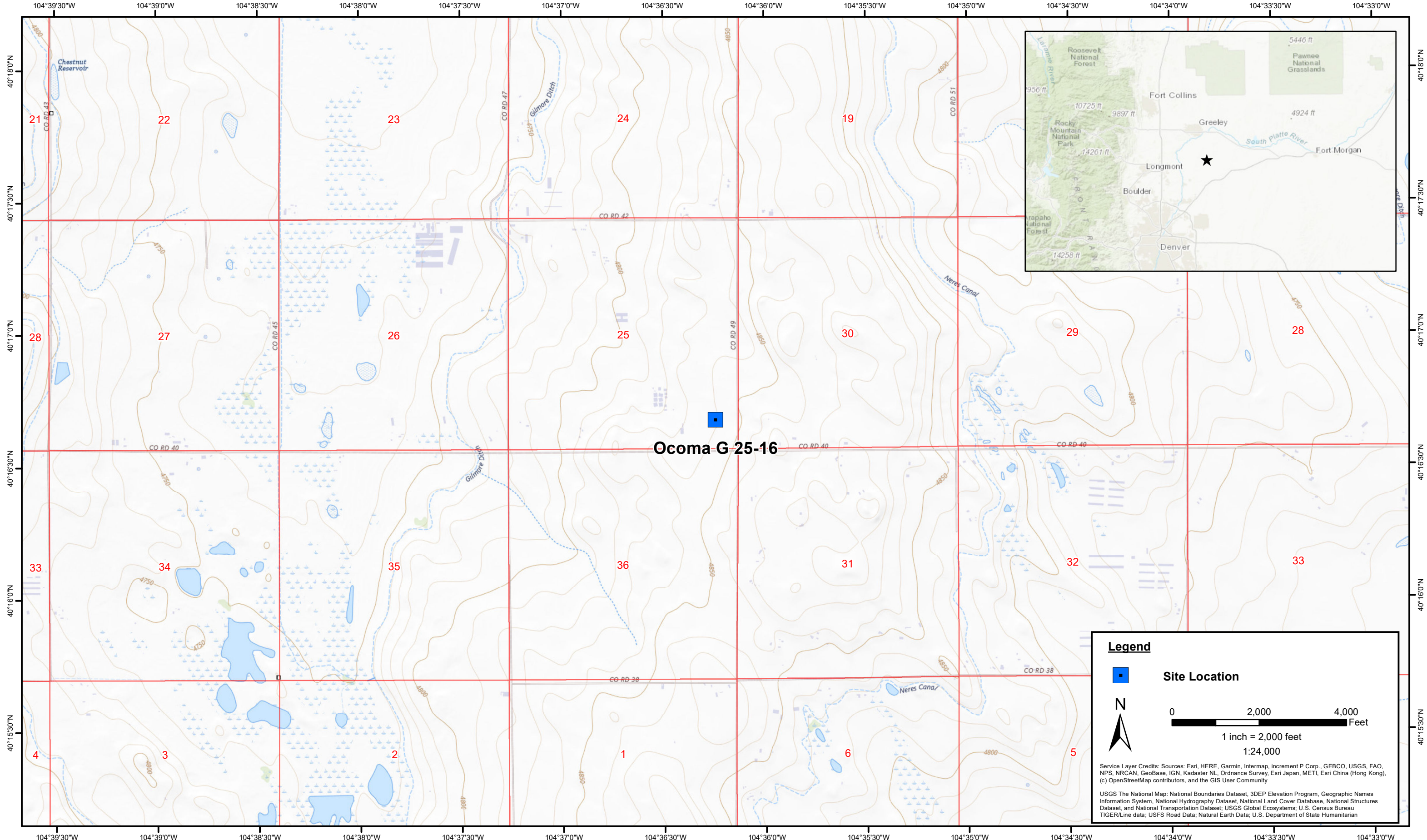
A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

FIGURES



Legend

■ Site Location

N

0 2,000 4,000 Feet

1 inch = 2,000 feet
1:24,000

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian

DATE:	June 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Woffinden

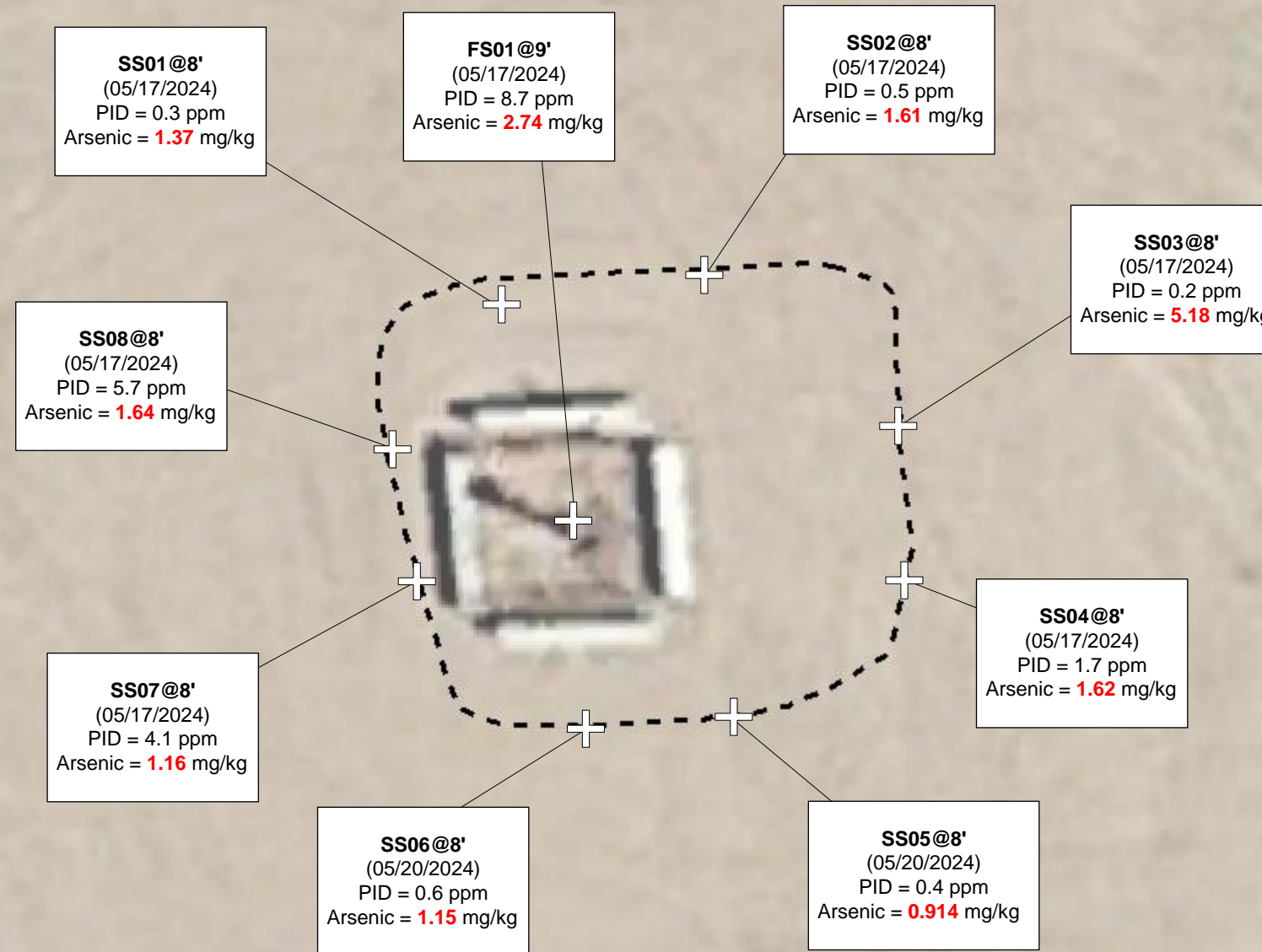


Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Ocoma G 25-16
SESE, Section 25, Township 4 North, Range 65 West
Weld County, Colorado

Site Location Map

Figure
1



Legend

- Excavation Extent (Collected via Trimble GPS)
- ⊕ Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Analytical results below laboratory detection limits or within compliance of ECMC Table 915-1 not shown.
- 4) Concentration in exceedance of ECMC Table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System
 mg/kg – Milligrams per kilogram
 PID – Photoionization Detector
 ppm – parts per million



Image Source: Google Earth; Google 2020

DATE:	06/27/2024
DESIGNED BY:	JW
DRAWN BY:	SK



TASMAN Tasman, Inc.
 6855 W 119th Avenue
 Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Ocoma G25-16
 SESE, Section 25, Township 4 North, Range 65 West
 Weld County, Colorado

Excavation Analytical
 Results Map
 (05/17/2024 - 05/20/2024)

Figure 2

ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 31, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

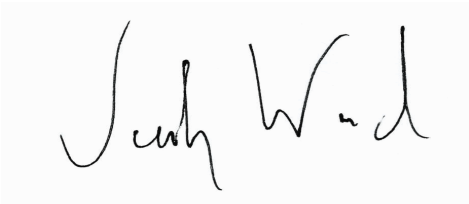
Broomfield, CO 80020

RE: Noble - Ocoma G25-16

Work Order #2405282

Enclosed are the results of analyses for samples received by Summit Scientific on 05/17/24 17:49. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and "W".

Jacob Wood For Paul Shrewsbury

President



Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN

Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@8'	2405282-01	Soil	05/17/24 15:04	05/17/24 17:49
SS02@8'	2405282-02	Soil	05/17/24 15:07	05/17/24 17:49
SS03@8'	2405282-03	Soil	05/17/24 15:09	05/17/24 17:49
SS04@8'	2405282-04	Soil	05/17/24 15:11	05/17/24 17:49
SS07@8'	2405282-05	Soil	05/17/24 15:20	05/17/24 17:49
SS08@8'	2405282-06	Soil	05/17/24 15:18	05/17/24 17:49
FS01@9'	2405282-07	Soil	05/17/24 15:22	05/17/24 17:49


Case Narrative

Hunter Merlo requested PAH be added to all samples on 5/28/2024.

This report includes those results.

This is a revision of the report originally sent on 05/23/2024 at 12:09 PM MT.

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

4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2405282	

Send Data To:		Send Invoice To:
Client: Noble / Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#:
Phone: 800 870 3839	Project Name: Ocoma G25-16	PO/Billing Codes:
Sampler Name: Sylvie B, Hunter J	Project Number:	Contact: Kieth Mclean

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS		Metals - 915*
1	SS0208'	5-17-24	15:04	2			X			X									pH, EC, SAR by saturated paste
2	SS0208'		15:07																*Arsenic, Barium, lead
3	SS0308'		15:09																
4	SS0408'		15:11																
5	SS0708'		15:20																
6	SS0808'		15:18																
7	FS0109'		15:22																
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>Sylvie B</i>	Date/Time: 05-17-24	Received by: Tasman Lock Box	Date/Time: 05-17-24	TAT Business Days	Field DO	Notes: * Arsenic, Barium lead.
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 5/17/24	Received by: <i>[Signature]</i>	Date/Time: 5/17/24	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day <input type="checkbox"/>	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
Temperature Upon Receipt: 7.7	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard <input type="checkbox"/>	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2405282

Client: Noble Gasman

Client Project ID: Ocoma G25-16

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 7.7

Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>none</u>
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
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⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Additional Comments (if any):</u>				

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

AS
Custodian Printed Name

5/17/24
Date/Time

2025



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS01@8'
2405282-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0388	96.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0363	90.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.28	66.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS01@8'
2405282-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	56.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.37	0.180	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	19.0	0.360	"	"	"	"	"	"	
Lead	10.6	0.180	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS01@8'
2405282-01 (Soil)


Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	BHE0612	05/20/24	05/20/24	Calculation	

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS02@8'
2405282-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0386	96.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0368	92.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.5	84.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS02@8'
2405282-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0183	54.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0209	62.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.61	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	11.5	0.400	"	"	"	"	"	"	
Lead	10.9	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS02@8'
2405282-02 (Soil)


Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1		%	1	BHE0612	05/20/24	05/20/24	Calculation	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS03@8'
2405282-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0368	92.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.29	66.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS03@8'
2405282-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0169	50.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.18	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	13.6	0.400	"	"	"	"	"	"	
Lead	17.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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 Broomfield CO, 80020

Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

SS03@8'
2405282-03 (Soil)


Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.4		%	1	BHE0612	05/20/24	05/20/24	Calculation	

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS04@8'
2405282-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	89.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.00	64.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS04@8'
2405282-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0140	42.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.62	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	13.6	0.400	"	"	"	"	"	"	
Lead	9.77	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

SS04@8'
2405282-04 (Soil)

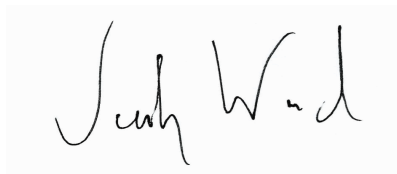
Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.4		%	1	BHE0612	05/20/24	05/20/24	Calculation	

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS07@8'
2405282-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	93.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0367	91.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.97	55.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS07@8'
2405282-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.16	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	15.4	0.400	"	"	"	"	"	"	
Lead	16.3	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

SS07@8'
2405282-05 (Soil)

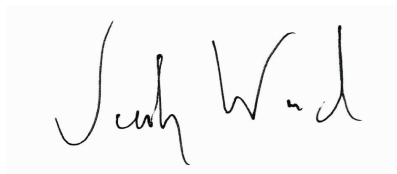
Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3		%	1	BHE0612	05/20/24	05/20/24	Calculation	

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS08@8'
2405282-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	89.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.55	68.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

SS08@8'
2405282-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0133	40.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0145	43.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.64	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	14.0	0.400	"	"	"	"	"	"	
Lead	8.46	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

SS08@8'
2405282-06 (Soil)

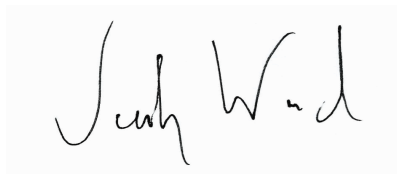
Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	BHE0612	05/20/24	05/20/24	Calculation	

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

FS01@9'
2405282-07 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHE0599	05/17/24	05/17/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0376	93.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0369	92.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0365	91.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHE0580	05/17/24	05/17/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.19	73.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

FS01@9'
2405282-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0869	05/29/24	05/29/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.74	0.200	mg/kg dry	1	BHE0604	05/20/24	05/22/24	EPA 6020B	
Barium	66.2	0.400	"	"	"	"	"	"	
Lead	6.42	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
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Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN

Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

FS01@9'
2405282-07 (Soil)


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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/24 15:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BHE0612	05/20/24	05/20/24	Calculation	

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

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 BHE0599 - EPA 5030 Soil MS

Blank (BHE0599-BLK1)

Prepared: 05/17/24 Analyzed: 05/18/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.8	50-150			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0400		90.4	50-150			

LCS (BHE0599-BS1)

Prepared: 05/17/24 Analyzed: 05/18/24

Benzene	0.0902	0.0020	mg/kg	0.100		90.2	70-130			
Toluene	0.0912	0.0050	"	0.100		91.2	70-130			
Ethylbenzene	0.0963	0.0050	"	0.100		96.3	70-130			
m,p-Xylene	0.203	0.010	"	0.200		102	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.0957	0.0050	"	0.100		95.7	70-130			
1,3,5-Trimethylbenzene	0.0959	0.0050	"	0.100		95.9	70-130			
Naphthalene	0.0903	0.0038	"	0.100		90.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.4	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.1	50-150			

Matrix Spike (BHE0599-MS1)

Source: 2405281-01

Prepared: 05/17/24 Analyzed: 05/18/24

Benzene	0.0781	0.0020	mg/kg	0.100	ND	78.1	70-130			
Toluene	0.0774	0.0050	"	0.100	ND	77.4	70-130			
Ethylbenzene	0.0785	0.0050	"	0.100	ND	78.5	70-130			
m,p-Xylene	0.162	0.010	"	0.200	ND	81.2	70-130			
o-Xylene	0.0818	0.0050	"	0.100	ND	81.8	70-130			
1,2,4-Trimethylbenzene	0.0732	0.0050	"	0.100	ND	73.2	70-130			
1,3,5-Trimethylbenzene	0.0735	0.0050	"	0.100	ND	73.5	70-130			
Naphthalene	0.0644	0.0038	"	0.100	ND	64.4	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	50-150			

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

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

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

Batch BHE0599 - EPA 5030 Soil MS

Matrix Spike Dup (BHE0599-MSD1)	Source: 2405281-01			Prepared: 05/17/24 Analyzed: 05/18/24						
Benzene	0.0727	0.0020	mg/kg	0.100	ND	72.7	70-130	7.20	30	
Toluene	0.0721	0.0050	"	0.100	ND	72.1	70-130	7.11	30	
Ethylbenzene	0.0732	0.0050	"	0.100	ND	73.2	70-130	7.00	30	
m,p-Xylene	0.151	0.010	"	0.200	ND	75.5	70-130	7.24	30	
o-Xylene	0.0766	0.0050	"	0.100	ND	76.6	70-130	6.48	30	
1,2,4-Trimethylbenzene	0.0670	0.0050	"	0.100	ND	67.0	70-130	8.77	30	QM-07
1,3,5-Trimethylbenzene	0.0682	0.0050	"	0.100	ND	68.2	70-130	7.41	30	QM-07
Naphthalene	0.0599	0.0038	"	0.100	ND	59.9	70-130	7.19	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0400		96.7	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.4	50-150			

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Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

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 BHE0580 - EPA 3550A

Blank (BHE0580-BLK1)

Prepared: 05/17/24 Analyzed: 05/18/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5	104	30-150					

LCS (BHE0580-BS1)

Prepared: 05/17/24 Analyzed: 05/18/24

C10-C28 (DRO)	501	50	mg/kg	500	100	70-130					
Surrogate: <i>o</i> -Terphenyl	10.3		"	12.5	82.0	30-150					

Matrix Spike (BHE0580-MS1)

Source: 2405228-01

Prepared: 05/17/24 Analyzed: 05/18/24

C10-C28 (DRO)	557	50	mg/kg	500	90.9	93.3	70-130				
Surrogate: <i>o</i> -Terphenyl	7.31		"	12.5	58.5	30-150					

Matrix Spike Dup (BHE0580-MSD1)

Source: 2405228-01

Prepared: 05/17/24 Analyzed: 05/18/24

C10-C28 (DRO)	478	50	mg/kg	500	90.9	77.4	70-130	15.3	20		
Surrogate: <i>o</i> -Terphenyl	7.38		"	12.5	59.0	30-150					

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BHE0869 - EPA 5030 Soil MS

Blank (BHE0869-BLK1)

Prepared & Analyzed: 05/29/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0185</i>		"	<i>0.0333</i>		<i>55.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0234</i>		"	<i>0.0333</i>		<i>70.1</i>	<i>40-150</i>			

LCS (BHE0869-BS1)

Prepared & Analyzed: 05/29/24

Acenaphthene	0.0218	0.00500	mg/kg	0.0333		65.5	31-137			
Anthracene	0.0212	0.00500	"	0.0333		63.6	30-120			
Benzo (a) anthracene	0.0248	0.00500	"	0.0333		74.5	30-120			
Benzo (a) pyrene	0.0216	0.00500	"	0.0333		64.8	30-120			
Benzo (b) fluoranthene	0.0226	0.00500	"	0.0333		67.8	30-120			
Benzo (k) fluoranthene	0.0222	0.00500	"	0.0333		66.5	30-120			
Chrysene	0.0236	0.00500	"	0.0333		70.8	30-120			
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333		55.5	30-120			
Fluoranthene	0.0219	0.00500	"	0.0333		65.7	30-120			
Fluorene	0.0242	0.00500	"	0.0333		72.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333		57.3	30-120			
Pyrene	0.0261	0.00500	"	0.0333		78.4	35-142			
1-Methylnaphthalene	0.0235	0.00500	"	0.0333		70.4	35-142			
2-Methylnaphthalene	0.0310	0.00500	"	0.0333		93.0	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		"	<i>0.0333</i>		<i>54.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0205</i>		"	<i>0.0333</i>		<i>61.4</i>	<i>40-150</i>			

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHE0869 - EPA 5030 Soil MS

Matrix Spike (BHE0869-MS1)	Source: 2405282-01			Prepared & Analyzed: 05/29/24								
Acenaphthene	0.0214	0.00500	mg/kg	0.0333	ND	64.3	31-137					
Anthracene	0.0226	0.00500	"	0.0333	ND	67.7	30-120					
Benzo (a) anthracene	0.0247	0.00500	"	0.0333	ND	74.1	30-120					
Benzo (a) pyrene	0.0218	0.00500	"	0.0333	ND	65.4	30-120					
Benzo (b) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120					
Benzo (k) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.3	30-120					
Chrysene	0.0230	0.00500	"	0.0333	ND	68.9	30-120					
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333	ND	55.4	30-120					
Fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120					
Fluorene	0.0235	0.00500	"	0.0333	ND	70.4	30-120					
Indeno (1,2,3-cd) pyrene	0.0195	0.00500	"	0.0333	ND	58.4	30-120					
Pyrene	0.0257	0.00500	"	0.0333	ND	77.0	35-142					
1-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.5	15-130					
2-Methylnaphthalene	0.0266	0.00500	"	0.0333	ND	79.8	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0176</i>		<i>"</i>	<i>0.0333</i>		<i>52.9</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0210</i>		<i>"</i>	<i>0.0333</i>		<i>63.1</i>	<i>40-150</i>					

Matrix Spike Dup (BHE0869-MSD1)	Source: 2405282-01			Prepared & Analyzed: 05/29/24								
Acenaphthene	0.0210	0.00500	mg/kg	0.0333	ND	63.0	31-137	1.96	30			
Anthracene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	9.56	30			
Benzo (a) anthracene	0.0242	0.00500	"	0.0333	ND	72.6	30-120	2.06	30			
Benzo (a) pyrene	0.0214	0.00500	"	0.0333	ND	64.3	30-120	1.73	30			
Benzo (b) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	2.61	30			
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	4.22	30			
Chrysene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	1.95	30			
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	3.93	30			
Fluoranthene	0.0213	0.00500	"	0.0333	ND	63.8	30-120	6.00	30			
Fluorene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	0.902	30			
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	3.65	30			
Pyrene	0.0251	0.00500	"	0.0333	ND	75.2	35-142	2.35	30			
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.1	15-130	1.05	50			
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.8	15-130	1.32	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0176</i>		<i>"</i>	<i>0.0333</i>		<i>52.8</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0201</i>		<i>"</i>	<i>0.0333</i>		<i>60.3</i>	<i>40-150</i>					

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0604 - EPA 3050B

Blank (BHE0604-BLK1)

Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BHE0604-BS1)

Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	36.9	0.200	mg/kg wet	40.0	92.3	80-120				
Barium	38.4	0.400	"	40.0	96.0	80-120				
Cadmium	1.94	0.200	"	2.00	97.0	80-120				
Copper	40.3	0.400	"	40.0	101	80-120				
Lead	19.0	0.200	"	20.0	95.1	80-120				
Nickel	39.9	0.400	"	40.0	99.9	80-120				
Silver	1.97	0.0200	"	2.00	98.4	80-120				
Zinc	39.4	0.400	"	40.0	98.5	80-120				
Selenium	4.02	0.260	"	4.00	100	80-120				

Duplicate (BHE0604-DUP1)

Source: 2404145-01RE1

Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	4.99	0.200	mg/kg wet	5.88	16.5	20				
Barium	102	0.400	"	211	70.0	20				QR-04
Cadmium	0.232	0.200	"	0.246	6.02	20				
Copper	5.12	0.400	"	5.40	5.21	20				
Lead	9.92	0.200	"	14.3	36.4	20				QR-04
Nickel	3.53	0.400	"	3.27	7.88	20				
Silver	0.0405	0.0200	"	0.0562	32.5	20				QR-01
Zinc	23.4	0.400	"	21.7	7.82	20				
Selenium	ND	0.260	"	0.197	200	20				QR-01

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0604 - EPA 3050B

Matrix Spike (BHE0604-MS1)

Source: 2404145-01RE1 Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	42.0	0.200	mg/kg wet	39.1	5.88	92.6	75-125			
Barium	143	0.400	"	39.1	211	NR	75-125			QM-07
Cadmium	2.21	0.200	"	1.95	0.246	100	75-125			
Copper	21.1	0.400	"	39.1	5.40	40.1	75-125			QM-07
Lead	32.9	0.200	"	19.5	14.3	95.0	75-125			
Nickel	18.6	0.400	"	39.1	3.27	39.2	75-125			QM-07
Silver	1.98	0.0200	"	1.95	0.0562	98.6	75-125			
Zinc	39.6	0.400	"	39.1	21.7	46.0	75-125			QM-07
Selenium	3.98	0.260	"	3.91	0.197	96.7	75-125			

Matrix Spike Dup (BHE0604-MSD1)

Source: 2404145-01RE1 Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	42.7	0.200	mg/kg wet	39.1	5.88	94.2	75-125	1.49	25	
Barium	146	0.400	"	39.1	211	NR	75-125	1.64	25	QM-07
Cadmium	2.26	0.200	"	1.95	0.246	103	75-125	2.59	25	
Copper	20.9	0.400	"	39.1	5.40	39.7	75-125	0.679	25	QM-07
Lead	33.3	0.200	"	19.5	14.3	97.3	75-125	1.34	25	
Nickel	18.6	0.400	"	39.1	3.27	39.1	75-125	0.208	25	QM-07
Silver	2.02	0.0200	"	1.95	0.0562	101	75-125	1.95	25	
Zinc	39.0	0.400	"	39.1	21.7	44.4	75-125	1.57	25	QM-07
Selenium	4.18	0.260	"	3.91	0.197	102	75-125	4.94	25	

Post Spike (BHE0604-PS1)

Source: 2404145-01RE1 Prepared: 05/20/24 Analyzed: 05/22/24

Arsenic	111		ug/l	100	14.7	96.0	75-125			
Barium	625		"	100	528	96.8	75-125			
Cadmium	5.81		"	5.00	0.615	104	75-125			
Copper	54.5		"	100	13.5	41.0	75-125			QM-07
Lead	81.5		"	50.0	35.8	91.2	75-125			
Nickel	48.9		"	100	8.16	40.7	75-125			QM-07
Silver	5.29		"	5.00	0.141	103	75-125			
Zinc	96.9		"	100	54.2	42.7	75-125			QM-07
Selenium	11.3		"	10.0	0.491	108	75-125			

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/31/24 12:24

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BHE0612 - General Preparation


Duplicate (BHE0612-DUP1)

Source: 2405282-01

Prepared & Analyzed: 05/20/24

% Solids	94.7		%		94.6			0.184	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN

Project Manager: Jacob Whritenour

Reported:
05/31/24 12:24

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 23, 2024

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020
RE: Noble - Ocoma G25-16
Work Order #2405304

Enclosed are the results of analyses for samples received by Summit Scientific on 05/20/24 17:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN

Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05@8'	2405304-01	Soil	05/20/24 10:44	05/20/24 17:35
SS06@8'	2405304-02	Soil	05/20/24 10:46	05/20/24 17:35

Summit Scientific

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S₂

Sample Receipt Checklist

S2 Work Order# 2405304Client: Noble Farmen Client Project ID: Ocoma G 25-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air Soil/Solid Water Other Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>COOL</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
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⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.AS

Custodian Printed Name

5/20/24

Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

SS05@8'
2405304-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0625	05/20/24	05/20/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0465	116 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0627	05/20/24	05/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.61	68.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

SS05@8'
2405304-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BHE0638	05/21/24	05/21/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0198	59.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.914	0.200	mg/kg dry	1	BHE0640	05/21/24	05/23/24	EPA 6020B	
Barium	36.8	0.400	"	"	"	"	"	"	
Lead	2.97	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/23/24 11:46

SS05@8'
2405304-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/20/24 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	BHE0646	05/21/24	05/21/24	Calculation	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

SS06@8'
2405304-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHE0625	05/20/24	05/20/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0452	113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHE0627	05/20/24	05/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.85	62.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

SS06@8'
2405304-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHE0638	05/21/24	05/21/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0191	57.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.15	0.200	mg/kg dry	1	BHE0640	05/21/24	05/23/24	EPA 6020B	
Barium	56.2	0.400	"	"	"	"	"	"	
Lead	4.16	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Ocoma G25-16
 Project Number: UWRWE-A2940-ABN
 Project Manager: Jacob Whritenour

Reported:
 05/23/24 11:46

SS06@8'
2405304-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	BHE0646	05/21/24	05/21/24	Calculation	

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

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 BHE0625 - EPA 5030 Soil MS

Blank (BHE0625-BLK1)

Prepared: 05/20/24 Analyzed: 05/21/24

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0400		108	50-150				
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150				
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150				

LCS (BHE0625-BS1)

Prepared: 05/20/24 Analyzed: 05/21/24

Benzene	0.108	0.0020	mg/kg	0.100		108	70-130				
Toluene	0.102	0.0050	"	0.100		102	70-130				
Ethylbenzene	0.109	0.0050	"	0.100		109	70-130				
m,p-Xylene	0.184	0.010	"	0.200		92.2	70-130				
o-Xylene	0.0844	0.0050	"	0.100		84.4	70-130				
1,2,4-Trimethylbenzene	0.0920	0.0050	"	0.100		92.0	70-130				
1,3,5-Trimethylbenzene	0.0944	0.0050	"	0.100		94.4	70-130				
Naphthalene	0.108	0.0038	"	0.100		108	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110	50-150				
Surrogate: Toluene-d8	0.0434		"	0.0400		108	50-150				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	50-150				

Matrix Spike (BHE0625-MS1)

Source: 2405303-01

Prepared: 05/20/24 Analyzed: 05/21/24

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130				
Toluene	0.105	0.0050	"	0.100	ND	105	70-130				
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130				
m,p-Xylene	0.177	0.010	"	0.200	ND	88.6	70-130				
o-Xylene	0.0810	0.0050	"	0.100	ND	81.0	70-130				
1,2,4-Trimethylbenzene	0.0857	0.0050	"	0.100	ND	85.7	70-130				
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100	ND	89.2	70-130				
Naphthalene	0.0875	0.0038	"	0.100	ND	87.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0466		"	0.0400		117	50-150				
Surrogate: Toluene-d8	0.0446		"	0.0400		111	50-150				
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150				

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6855 W. 119th Ave.
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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

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 BHE0625 - EPA 5030 Soil MS

Matrix Spike Dup (BHE0625-MSD1)	Source: 2405303-01			Prepared: 05/20/24 Analyzed: 05/21/24						
Benzene	0.0947	0.0020	mg/kg	0.100	ND	94.7	70-130	17.3	30	
Toluene	0.0879	0.0050	"	0.100	ND	87.9	70-130	17.8	30	
Ethylbenzene	0.0947	0.0050	"	0.100	ND	94.7	70-130	10.9	30	
m,p-Xylene	0.158	0.010	"	0.200	ND	79.1	70-130	11.4	30	
o-Xylene	0.0716	0.0050	"	0.100	ND	71.6	70-130	12.3	30	
1,2,4-Trimethylbenzene	0.0739	0.0050	"	0.100	ND	73.9	70-130	14.8	30	
1,3,5-Trimethylbenzene	0.0768	0.0050	"	0.100	ND	76.8	70-130	15.0	30	
Naphthalene	0.0709	0.0038	"	0.100	ND	70.9	70-130	21.0	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0435</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0431</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>50-150</i>			

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

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 BHE0627 - EPA 3550A

Blank (BHE0627-BLK1)

Prepared: 05/20/24 Analyzed: 05/21/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		91.6	30-150				

LCS (BHE0627-BS1)

Prepared: 05/20/24 Analyzed: 05/21/24

C10-C28 (DRO)	537	50	mg/kg	500		107	70-130				
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		93.6	30-150				

Matrix Spike (BHE0627-MS1)

Source: 2405303-01

Prepared: 05/20/24 Analyzed: 05/21/24

C10-C28 (DRO)	477	50	mg/kg	500	ND	95.4	70-130				
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.7	30-150				

Matrix Spike Dup (BHE0627-MSD1)

Source: 2405303-01

Prepared: 05/20/24 Analyzed: 05/21/24

C10-C28 (DRO)	504	50	mg/kg	500	ND	101	70-130	5.59	20		
Surrogate: <i>o</i> -Terphenyl	11.2		"	12.5		89.6	30-150				

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHE0638 - EPA 5030 Soil MS

Blank (BHE0638-BLK1)

Prepared & Analyzed: 05/21/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0282		"	0.0333		84.5	40-150			
Surrogate: Fluoranthene-d10	0.0289		"	0.0333		86.6	40-150			

LCS (BHE0638-BS1)

Prepared & Analyzed: 05/21/24

Acenaphthene	0.0255	0.00500	mg/kg	0.0333		76.5	31-137			
Anthracene	0.0245	0.00500	"	0.0333		73.6	30-120			
Benzo (a) anthracene	0.0243	0.00500	"	0.0333		72.9	30-120			
Benzo (a) pyrene	0.0207	0.00500	"	0.0333		62.1	30-120			
Benzo (b) fluoranthene	0.0182	0.00500	"	0.0333		54.7	30-120			
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333		63.7	30-120			
Chrysene	0.0246	0.00500	"	0.0333		73.7	30-120			
Dibenz (a,h) anthracene	0.0202	0.00500	"	0.0333		60.7	30-120			
Fluoranthene	0.0215	0.00500	"	0.0333		64.6	30-120			
Fluorene	0.0244	0.00500	"	0.0333		73.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333		45.4	30-120			
Pyrene	0.0338	0.00500	"	0.0333		101	35-142			
1-Methylnaphthalene	0.0255	0.00500	"	0.0333		76.4	35-142			
2-Methylnaphthalene	0.0249	0.00500	"	0.0333		74.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0264		"	0.0333		79.2	40-150			
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.3	40-150			

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Project: Noble - Ocoma G25-16
Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHE0638 - EPA 5030 Soil MS

Matrix Spike (BHE0638-MS1)	Source: 2405302-01			Prepared & Analyzed: 05/21/24							
Acenaphthene	0.0176	0.00500	mg/kg	0.0333	ND	52.7	31-137				
Anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120				
Benzo (a) anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120				
Benzo (a) pyrene	0.0138	0.00500	"	0.0333	ND	41.4	30-120				
Benzo (b) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.4	30-120				
Benzo (k) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.3	30-120				
Chrysene	0.0164	0.00500	"	0.0333	ND	49.3	30-120				
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.3	30-120				
Fluoranthene	0.0154	0.00500	"	0.0333	ND	46.1	30-120				
Fluorene	0.0156	0.00500	"	0.0333	ND	46.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120				
Pyrene	0.0195	0.00500	"	0.0333	ND	58.5	35-142				
1-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.1	15-130				
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	47.9	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0172</i>		<i>"</i>	<i>0.0333</i>		<i>51.7</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0163</i>		<i>"</i>	<i>0.0333</i>		<i>49.0</i>	<i>40-150</i>				

Matrix Spike Dup (BHE0638-MSD1)	Source: 2405302-01			Prepared & Analyzed: 05/21/24							
Acenaphthene	0.0165	0.00500	mg/kg	0.0333	ND	49.4	31-137	6.44	30		
Anthracene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	1.49	30		
Benzo (a) anthracene	0.0158	0.00500	"	0.0333	ND	47.3	30-120	4.91	30		
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	17.1	30		
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.7	30-120	10.6	30		
Benzo (k) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120	2.41	30		
Chrysene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	5.09	30		
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.3	30-120	13.6	30		
Fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	4.07	30		
Fluorene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	6.91	30		
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333	ND	44.1	30-120	0.394	30		
Pyrene	0.0206	0.00500	"	0.0333	ND	61.9	35-142	5.67	30		
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.4	15-130	3.46	50		
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130	4.30	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0169</i>		<i>"</i>	<i>0.0333</i>		<i>50.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0156</i>		<i>"</i>	<i>0.0333</i>		<i>46.7</i>	<i>40-150</i>				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHE0640 - EPA 3050B

Blank (BHE0640-BLK1)

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Lead	ND	0.200	"							

LCS (BHE0640-BS1)

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	34.9	0.200	mg/kg wet	40.0		87.2	80-120			
Barium	35.9	0.400	"	40.0		89.8	80-120			
Lead	18.2	0.200	"	20.0		91.2	80-120			

Duplicate (BHE0640-DUP1)

Source: 2403419-02

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	2.77	0.200	mg/kg dry		2.77			0.0510	20	
Barium	105	0.400	"		84.7			21.8	20	QR-04
Lead	5.81	0.200	"		5.57			4.26	20	

Matrix Spike (BHE0640-MS1)

Source: 2403419-02

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	39.2	0.200	mg/kg dry	41.5	2.77	87.7	75-125			
Barium	120	0.400	"	41.5	84.7	85.8	75-125			
Lead	24.7	0.200	"	20.8	5.57	92.1	75-125			

Matrix Spike Dup (BHE0640-MSD1)

Source: 2403419-02

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	41.7	0.200	mg/kg dry	43.1	2.77	90.2	75-125	6.09	25	
Barium	126	0.400	"	43.1	84.7	96.1	75-125	4.72	25	
Lead	25.6	0.200	"	21.6	5.57	93.0	75-125	3.71	25	

Post Spike (BHE0640-PS1)

Source: 2403419-02

Prepared: 05/21/24 Analyzed: 05/23/24

Arsenic	106		ug/l	100	6.27	99.5	75-125			
Barium	302		"	100	192	110	75-125			
Lead	62.9		"	50.0	12.6	101	75-125			

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Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN
Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BHE0646 - General Preparation

Duplicate (BHE0646-DUP1)		Source: 2403419-02			Prepared & Analyzed: 05/21/24			
% Solids	90.5		%		90.5		0.0139	20

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Broomfield CO, 80020

Project: Noble - Ocoma G25-16

Project Number: UWRWE-A2940-ABN

Project Manager: Jacob Whritenour

Reported:
05/23/24 11:46

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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