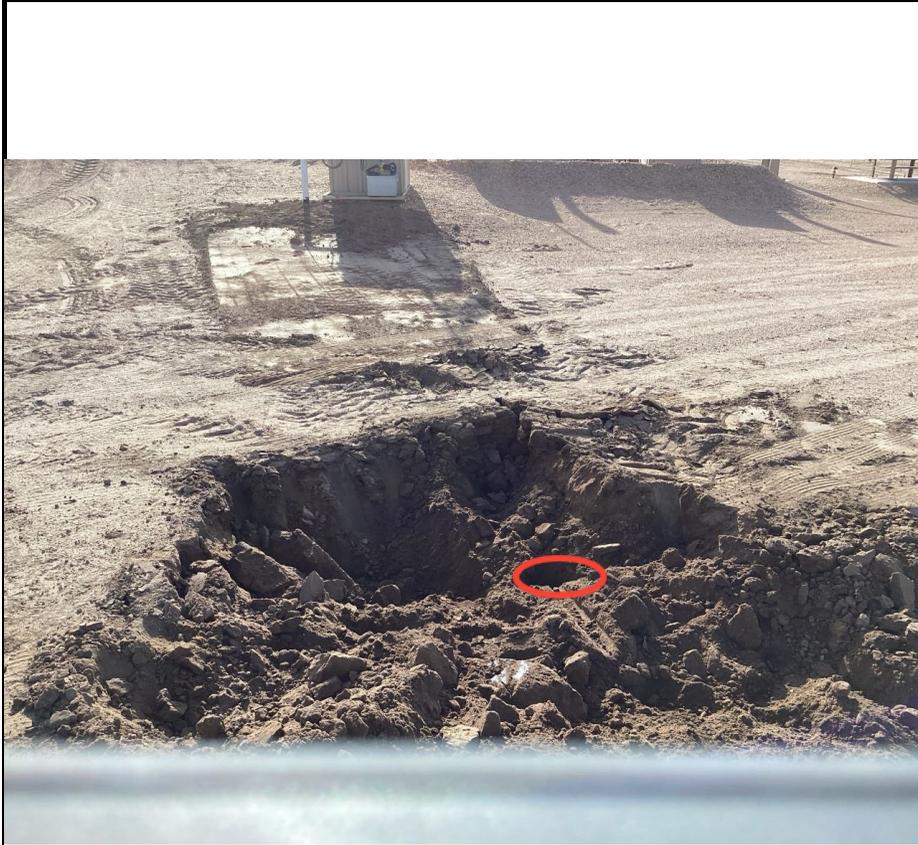




Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FL01R-S@2' FACING SW			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FL01R-W@2' FACING SW			



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FL01-01@1' FACING E			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: BKG01 FACING E			

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY, INC - 100322
HANSCOME C28-29D, WELD COUNTY, COLORADO
REM # 34734

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
FL01R-S@2'	6/27/2024	2	40.290059	-104.555949	0.9	0.1
FL01R-W@1'	6/28/2024	1	40.290152	-104.556324	0.9	0.1
FL01-01@1'	6/28/2024	1	40.290048	-104.556176	0.8	0.1
BKG01@1'	6/28/2024	1	40.290152	-104.556546	0.8	0.2
BKG01@2'	6/28/2024	2	40.290131	-104.556546	0.8	0.1

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

in. = Inches

ft. = Feet

bgs = Below ground surface

NC = Data not collected

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
HANSCOME C28-29D, WELD COUNTY, COLORADO
REM # 34734

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01R-S@2'	6/27/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01R-W@1'	6/28/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-01@1'	6/28/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
 2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
 3. * Indicates laboratory minimum detection limit in excess of SSL
 4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg
- ECMC = Energy & Carbon Management Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
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
ft. = Feet
bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
HANSCOME C28-29D, WELD COUNTY, COLORADO
REM # 34734

Sample ID	Sample Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl - Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01R-S@2'	06/27/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00979	<0.00500	<0.00500	<0.00500
FL01-01@1'	06/28/2024	1	0.0126	0.0260	0.0308	0.0220	0.0364	0.0121	0.0271	0.00629	0.0751	0.0162	0.0112	0.0757	<0.00500	<0.00500
FL01R-W@1'	06/28/2024	1	0.0566	0.0893	0.100	0.0653	0.113	0.0407	0.0915	0.0101	0.244	0.0667	0.0268	0.2680	0.00651	0.0132

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
3. * Indicates laboratory minimum detection limit in excess of SSL

ECMC = Colorado Energy & Carbon Management Commission

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

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY, INC - 100322
HANSCOME C28-29D, WELD COUNTY, COLORADO
REM # 34734

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01R-S@2'	06/27/2024	2	7.56	0.242	0.105	<2.00
FL01-01@1'	06/28/2024	1	7.81	0.922	2.29	<2.00
FL01R-W@1'	06/28/2024	1	8.53	0.232	0.394	<2.00
BKG01@1'	06/28/2024	1	8.55	0.470	1.12	<2.00
BKG01@2'	06/28/2024	2	8.67	0.268	0.996	<2.00
Maximum Background Concentration			8.67	0.470	1.12	-
Mean Background Concentration			8.61	0.369	1.06	-

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
HANSCOME C28-29D, WELD COUNTY, COLORADO
REM # 34734

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) ⁽⁴⁾ (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01R-S@2'	06/27/2024	2	1.99	44.1	<0.200	<0.30	6.75	6.16	2.91	<0.260	0.0340	29.3
FL01-O1@1'	06/28/2024	1	2.78	58.4	0.241	<0.30	5.64	8.80	3.99	<0.260	0.0325	22.1
FL01R-W@1'	06/28/2024	1	2.95	75.0	0.215	<0.30	5.05	45.8	4.73	<0.260	0.0414	20.5
BKG01@1'	06/28/2024	1	2.74	42.9	0.200	<0.30	4.39	6.62	3.45	<0.260	0.0222	15.6
BKG01@2'	06/28/2024	2	2.85	49.6	<0.200	<0.30	4.61	6.94	3.88	<0.260	0.0223	16.4
Maximum Background Concentration			2.85	-	-	-	-	6.94	-	-	-	-
Maximum Background Concentration X 1.25			3.56	-	-	-	-	8.68	-	-	-	-
Mean Background Concentration			2.80	-	-	-	-	6.78	-	-	-	-
Mean Background Concentration X 1.25			3.49	-	-	-	-	8.48	-	-	-	-

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Red** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- Compound falls within ECMC Table 915-1 Footnote 9.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

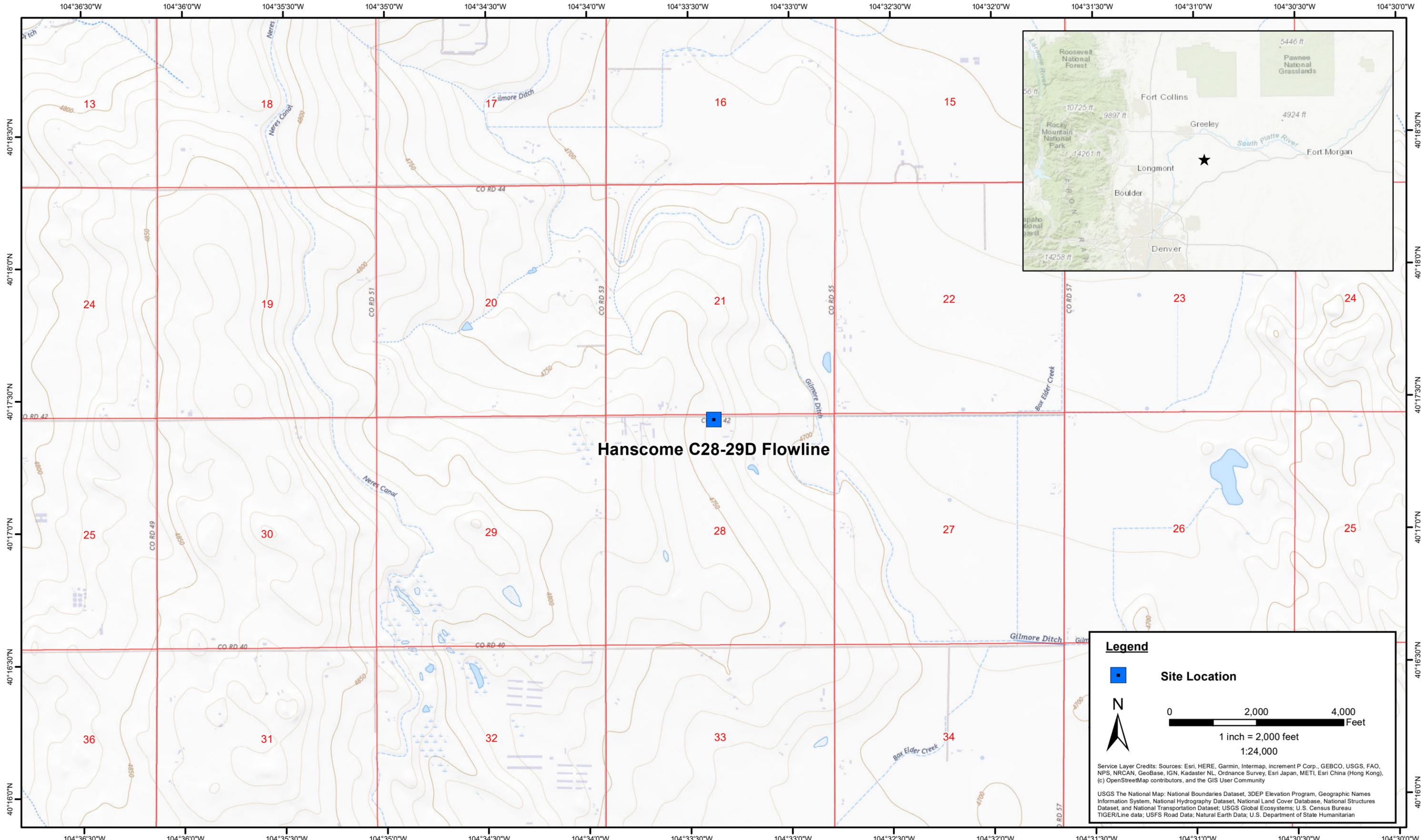
(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL



DATE:	July 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Clonts



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

Noble Energy, Inc. – DJ Basin
Hanscome C28-29D Flowline
 NENW, Section 28, Township 4 North, Range 64 West
 Weld County, Colorado

Site Location Map

Figure
1



Legend

- Flowline Location
- + Soil Sample Location – No Exceedances (Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Color coded sample exceedances are in reference to ECMC Table 915-1 Organic Compounds in Soil.

GPS – Global Positioning System
 mg/kg – Milligrams per kilogram
 PID – Photoionization Detector
 ppm – Parts per million
 RSSLs – Residential Soil Screening Levels

0 ft. 30 ft. 60 ft.

Image Source: Google Earth; Google 2024

DATE:	07/16/2024
DESIGNED BY:	JW
DRAWN BY:	ML

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

**Noble Energy, Inc. – DJ Basin
 Hanscome C28-29D**
 NENW, Section 28, Township 4 North, Range 64 West
 Weld County, Colorado

Flowline Closure & Soil
 Analytical Results Map
 (06/27/2024 & 06/28/2024)

FIGURE 2

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 10, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Hanscome C28-29D Flowline

Work Order #2406441

Enclosed are the results of analyses for samples received by Summit Scientific on 06/27/24 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury

President



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-S@2'	2406441-01	Soil	06/27/24 11:40	06/27/24 18:00

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.



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

Lab ID	Page	of
2406441		

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company: Chevron	
Address: 6855 W 119th Ave		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Hanscome C28-29D FL	
City/State/Zip: Broomfield / CO / 80020				AFE#: UWRWE - A3135-ABN	
Phone: 970-214-7901		Project Name: Hanscome C28-29D FL ^{CS}		PO/Billing Codes:	
Sampler Name: Lillian Buck		Project Number: Flowline		Contact: Dan Peterson ^{CS} Miguel Barron	

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		HOLD		
1	FLOIR-S e2'	6/27/24	1140	3			X			X				X	X	X	X	X	X	X		pH, EC, SAR by saturated paste
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: <i>Liz</i>	Date/Time: 6/27/24 1415	Received by: <i>Tasman Lockbox</i>	Date/Time: 6/27/24 1415	TAT Business Days	Field DO	Notes:
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 6/27/24 1800	Received by: <i>[Signature]</i>	Date/Time: 6/27/24 1800	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 10.7	Corrected Temperature: 8	IR gun #:		Standard	Field Turb.	
				HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2406441

Client: Nobel Tasmann Client Project ID: Hanscome C28-290 Flowline

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

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>on 20E</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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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

6/27/24
Date/Time



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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

FL01R-S@2'
2406441-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0969	06/28/24	07/01/24	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: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0972	06/28/24	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.44	59.5 %		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 - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

FL01R-S@2'
2406441-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0936	06/28/24	07/03/24	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	0.00979	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0150	45.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0236	70.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0942	06/28/24	07/02/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/27/24 11:40**

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

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

FL01R-S@2'
2406441-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.99	0.200	mg/kg dry	1	BHF0951	06/28/24	07/03/24	EPA 6020B
Barium	44.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.75	0.400	"	"	"	"	"	"
Lead	6.16	0.200	"	"	"	"	"	"
Nickel	2.91	0.400	"	"	"	"	"	"
Silver	0.0340	0.0200	"	"	"	"	"	"
Zinc	29.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	58.2	0.0500	mg/L dry	1	BHG0080	07/02/24	07/04/24	EPA 6020B	
Magnesium	9.88	0.0500	"	"	"	"	"	"	
Sodium	3.30	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100	units	1	BHG0162	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

FL01R-S@2'
2406441-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.8			%	1	BHF0944	06/28/24	07/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.242	0.0100		mmhos/cm	1	BHG0082	07/02/24	07/08/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/27/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.56			pH Units	1	BHG0081	07/02/24	07/08/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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 BHF0969 - EPA 5030 Soil MS

Blank (BHF0969-BLK1)

Prepared: 06/28/24 Analyzed: 07/01/24

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	0.0402		"	0.0400		100	50-150				
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	50-150				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150				

LCS (BHF0969-BS1)

Prepared: 06/28/24 Analyzed: 07/01/24

Benzene	0.107	0.0020	mg/kg	0.100		107	70-130				
Toluene	0.107	0.0050	"	0.100		107	70-130				
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130				
m,p-Xylene	0.219	0.010	"	0.200		109	70-130				
o-Xylene	0.106	0.0050	"	0.100		106	70-130				
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130				
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130				
Naphthalene	0.103	0.0038	"	0.100		103	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150				
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150				
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150				

Matrix Spike (BHF0969-MS1)

Source: 2406441-01

Prepared: 06/28/24 Analyzed: 07/01/24

Benzene	0.0999	0.0020	mg/kg	0.100	ND	99.9	70-130				
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130				
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130				
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130				
o-Xylene	0.0971	0.0050	"	0.100	ND	97.1	70-130				
1,2,4-Trimethylbenzene	0.0933	0.0050	"	0.100	ND	93.3	70-130				
1,3,5-Trimethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130				
Naphthalene	0.0810	0.0038	"	0.100	ND	81.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		105	50-150				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150				

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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		

Batch BHF0969 - EPA 5030 Soil MS

Matrix Spike Dup (BHF0969-MSD1)	Source: 2406441-01			Prepared: 06/28/24 Analyzed: 07/01/24						
Benzene	0.107	0.0020	mg/kg	0.100	ND	107	70-130	7.15	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	5.60	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	6.62	30	
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130	5.17	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	4.53	30	
1,2,4-Trimethylbenzene	0.0968	0.0050	"	0.100	ND	96.8	70-130	3.63	30	
1,3,5-Trimethylbenzene	0.0997	0.0050	"	0.100	ND	99.7	70-130	3.27	30	
Naphthalene	0.0808	0.0038	"	0.100	ND	80.8	70-130	0.260	30	
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.1	50-150			

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Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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 BHF0972 - EPA 3550A

Blank (BHF0972-BLK1)

Prepared: 06/28/24 Analyzed: 07/03/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		93.2	30-150				

LCS (BHF0972-BS1)

Prepared: 06/28/24 Analyzed: 07/03/24

C10-C28 (DRO)	519	50	mg/kg	500		104	70-130				
Surrogate: <i>o</i> -Terphenyl	12.1		"	12.5		97.2	30-150				

Matrix Spike (BHF0972-MS1)

Source: 2406441-01

Prepared: 06/28/24 Analyzed: 07/03/24

C10-C28 (DRO)	462	50	mg/kg	500	ND	92.4	70-130				
Surrogate: <i>o</i> -Terphenyl	7.94		"	12.5		63.6	30-150				

Matrix Spike Dup (BHF0972-MSD1)

Source: 2406441-01

Prepared: 06/28/24 Analyzed: 07/03/24

C10-C28 (DRO)	464	50	mg/kg	500	ND	92.8	70-130	0.434	20		
Surrogate: <i>o</i> -Terphenyl	9.02		"	12.5		72.1	30-150				

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6855 W. 119th Ave.
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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHF0936 - EPA 5030 Soil MS

Blank (BHF0936-BLK1)

Prepared: 06/28/24 Analyzed: 07/03/24

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>0.0308</i>		"	<i>0.0333</i>		<i>92.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0337</i>		"	<i>0.0333</i>		<i>101</i>	<i>40-150</i>			

LCS (BHF0936-BS1)

Prepared: 06/28/24 Analyzed: 07/03/24

Acenaphthene	0.0304	0.00500	mg/kg	0.0333	91.3	31-137
Anthracene	0.0309	0.00500	"	0.0333	92.8	30-120
Benzo (a) anthracene	0.0369	0.00500	"	0.0333	111	30-120
Benzo (a) pyrene	0.0343	0.00500	"	0.0333	103	30-120
Benzo (b) fluoranthene	0.0349	0.00500	"	0.0333	105	30-120
Benzo (k) fluoranthene	0.0295	0.00500	"	0.0333	88.6	30-120
Chrysene	0.0319	0.00500	"	0.0333	95.7	30-120
Dibenz (a,h) anthracene	0.0338	0.00500	"	0.0333	101	30-120
Fluoranthene	0.0320	0.00500	"	0.0333	96.0	30-120
Fluorene	0.0299	0.00500	"	0.0333	89.8	30-120
Indeno (1,2,3-cd) pyrene	0.0363	0.00500	"	0.0333	109	30-120
Pyrene	0.0345	0.00500	"	0.0333	103	35-142
1-Methylnaphthalene	0.0382	0.00500	"	0.0333	115	35-142
2-Methylnaphthalene	0.0293	0.00500	"	0.0333	88.0	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0368</i>		"	<i>0.0333</i>	<i>110</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0344</i>		"	<i>0.0333</i>	<i>103</i>	<i>40-150</i>

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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 BHF0936 - EPA 5030 Soil MS

Matrix Spike (BHF0936-MS1)	Source: 2406429-01			Prepared: 06/28/24 Analyzed: 07/03/24						
Acenaphthene	0.0261	0.00500	mg/kg	0.0333	ND	78.2	31-137			
Anthracene	0.0253	0.00500	"	0.0333	ND	75.8	30-120			
Benzo (a) anthracene	0.0316	0.00500	"	0.0333	ND	94.8	30-120			
Benzo (a) pyrene	0.0295	0.00500	"	0.0333	ND	88.5	30-120			
Benzo (b) fluoranthene	0.0299	0.00500	"	0.0333	ND	89.7	30-120			
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120			
Chrysene	0.0261	0.00500	"	0.0333	ND	78.3	30-120			
Dibenz (a,h) anthracene	0.0306	0.00500	"	0.0333	ND	91.8	30-120			
Fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120			
Fluorene	0.0275	0.00500	"	0.0333	ND	82.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0254	0.00500	"	0.0333	ND	76.1	30-120			
Pyrene	0.0287	0.00500	"	0.0333	ND	86.1	35-142			
1-Methylnaphthalene	0.0302	0.00500	"	0.0333	ND	90.5	15-130			
2-Methylnaphthalene	0.0239	0.00500	"	0.0333	ND	71.6	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0320</i>		<i>"</i>	<i>0.0333</i>		<i>96.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0281</i>		<i>"</i>	<i>0.0333</i>		<i>84.2</i>	<i>40-150</i>			

Matrix Spike Dup (BHF0936-MSD1)	Source: 2406429-01			Prepared: 06/28/24 Analyzed: 07/03/24						
Acenaphthene	0.0283	0.00500	mg/kg	0.0333	ND	84.9	31-137	8.17	30	
Anthracene	0.0279	0.00500	"	0.0333	ND	83.7	30-120	9.87	30	
Benzo (a) anthracene	0.0341	0.00500	"	0.0333	ND	102	30-120	7.75	30	
Benzo (a) pyrene	0.0315	0.00500	"	0.0333	ND	94.5	30-120	6.63	30	
Benzo (b) fluoranthene	0.0322	0.00500	"	0.0333	ND	96.5	30-120	7.32	30	
Benzo (k) fluoranthene	0.0257	0.00500	"	0.0333	ND	77.1	30-120	5.93	30	
Chrysene	0.0285	0.00500	"	0.0333	ND	85.6	30-120	8.91	30	
Dibenz (a,h) anthracene	0.0328	0.00500	"	0.0333	ND	98.4	30-120	7.02	30	
Fluoranthene	0.0287	0.00500	"	0.0333	ND	86.1	30-120	7.85	30	
Fluorene	0.0277	0.00500	"	0.0333	ND	83.0	30-120	0.566	30	
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333	ND	83.2	30-120	8.81	30	
Pyrene	0.0320	0.00500	"	0.0333	ND	96.1	35-142	11.0	30	
1-Methylnaphthalene	0.0361	0.00500	"	0.0333	ND	108	15-130	17.9	50	
2-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.4	15-130	5.23	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0373</i>		<i>"</i>	<i>0.0333</i>		<i>112</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0305</i>		<i>"</i>	<i>0.0333</i>		<i>91.6</i>	<i>40-150</i>			

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BHF0942 - EPA 3050B

Blank (BHF0942-BLK1)				Prepared: 06/28/24 Analyzed: 07/02/24							
Boron	ND	2.00	mg/L								
LCS (BHF0942-BS1)				Prepared: 06/28/24 Analyzed: 07/02/24							
Boron	5.38	2.00	mg/L	5.00		108	80-120				
Duplicate (BHF0942-DUP1)				Source: 2406429-01 Prepared: 06/28/24 Analyzed: 07/02/24							
Boron	0.242	2.00	mg/L		0.265			9.18	20		
Matrix Spike (BHF0942-MS1)				Source: 2406429-01 Prepared: 06/28/24 Analyzed: 07/02/24							
Boron	5.31	2.00	mg/L	4.97	0.265	102	75-125				
Matrix Spike Dup (BHF0942-MSD1)				Source: 2406429-01 Prepared: 06/28/24 Analyzed: 07/02/24							
Boron	5.89	2.00	mg/L	4.97	0.265	113	75-125	10.3	25		

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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHF0951 - EPA 3050B

Blank (BHF0951-BLK1)

Prepared: 06/28/24 Analyzed: 07/02/24

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 (BHF0951-BS1)

Prepared: 06/28/24 Analyzed: 07/02/24

Arsenic	40.2	0.200	mg/kg wet	40.0	101	80-120
Barium	40.8	0.400	"	40.0	102	80-120
Cadmium	2.03	0.200	"	2.00	101	80-120
Copper	40.9	0.400	"	40.0	102	80-120
Lead	20.1	0.200	"	20.0	101	80-120
Nickel	42.6	0.400	"	40.0	106	80-120
Silver	2.02	0.0200	"	2.00	101	80-120
Zinc	40.0	0.400	"	40.0	99.9	80-120
Selenium	4.00	0.260	"	4.00	100	80-120

Duplicate (BHF0951-DUP1)

Source: 2406429-01

Prepared: 06/28/24 Analyzed: 07/02/24

Arsenic	2.89	0.200	mg/kg dry	2.73	5.48	20	
Barium	35.7	0.400	"	22.8	44.1	20	QR-04
Cadmium	0.856	0.200	"	0.411	70.2	20	QR-01
Copper	11.0	0.400	"	9.79	12.0	20	
Lead	15.0	0.200	"	8.69	53.5	20	QR-04
Nickel	15.9	0.400	"	8.19	64.0	20	QR-04
Silver	0.0240	0.0200	"	0.0238	1.01	20	
Zinc	59.1	0.400	"	54.3	8.40	20	
Selenium	ND	0.260	"	ND		20	

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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 BHF0951 - EPA 3050B

Matrix Spike (BHF0951-MS1)	Source: 2406429-01			Prepared: 06/28/24 Analyzed: 07/02/24								
Arsenic	48.2	0.200	mg/kg dry	45.4	2.73	100	75-125					
Barium	63.5	0.400	"	45.4	22.8	89.8	75-125					
Cadmium	2.79	0.200	"	2.27	0.411	105	75-125					
Copper	55.6	0.400	"	45.4	9.79	101	75-125					
Lead	31.1	0.200	"	22.7	8.69	98.9	75-125					
Nickel	30.3	0.400	"	45.4	8.19	48.8	75-125					QM-05
Silver	2.33	0.0200	"	2.27	0.0238	102	75-125					
Zinc	101	0.400	"	45.4	54.3	104	75-125					
Selenium	3.68	0.260	"	4.54	ND	81.2	75-125					

Matrix Spike Dup (BHF0951-MSD1)	Source: 2406429-01			Prepared: 06/28/24 Analyzed: 07/02/24								
Arsenic	51.3	0.200	mg/kg dry	48.6	2.73	100	75-125	6.37	25			
Barium	65.1	0.400	"	48.6	22.8	87.1	75-125	2.46	25			
Cadmium	2.94	0.200	"	2.43	0.411	104	75-125	5.24	25			
Copper	58.5	0.400	"	48.6	9.79	100	75-125	5.08	25			
Lead	33.2	0.200	"	24.3	8.69	101	75-125	6.37	25			
Nickel	34.3	0.400	"	48.6	8.19	53.7	75-125	12.2	25			QM-05
Silver	2.49	0.0200	"	2.43	0.0238	102	75-125	6.62	25			
Zinc	106	0.400	"	48.6	54.3	106	75-125	4.40	25			
Selenium	3.96	0.260	"	4.86	ND	81.5	75-125	7.35	25			

Post Spike (BHF0951-PS1)	Source: 2406429-01			Prepared: 06/28/24 Analyzed: 07/03/24								
Arsenic	112		ug/l	100	5.58	106	75-125					
Barium	139		"	100	46.5	92.8	75-125					
Cadmium	6.19		"	5.00	0.840	107	75-125					
Copper	124		"	100	20.0	104	75-125					
Lead	69.8		"	50.0	17.7	104	75-125					
Nickel	73.4		"	100	16.7	56.7	75-125					QM-01
Silver	5.22		"	5.00	0.0485	103	75-125					
Zinc	223		"	100	111	112	75-125					
Selenium	8.75		"	10.0	0.183	85.7	75-125					

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHF0941 - 3060A Mod

Blank (BHF0941-BLK1)

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHF0941-BS1)

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 25.7 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BHF0941-DUP1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHF0941-MS1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 27.2 0.30 mg/kg dry 27.4 ND 99.4 75-125

Matrix Spike Dup (BHF0941-MSD1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 27.0 0.30 mg/kg dry 27.4 ND 98.4 75-125 1.01 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0080 - General Preparation

Blank (BHG0080-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHG0080-BS1)

Prepared: 07/02/24 Analyzed: 07/04/24

Calcium	5.29	0.0500	mg/L wet	5.00	106	70-130				
Magnesium	5.31	0.0500	"	5.00	106	70-130				
Sodium	5.15	0.0500	"	5.00	103	70-130				

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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 BHF0944 - General Preparation

Duplicate (BHF0944-DUP1)	Source: 2406430-01		Prepared: 06/28/24 Analyzed: 07/01/24	
% Solids	91.5	%	91.1	0.433 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0082 - General Preparation

Blank (BHG0082-BLK1)

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0082-BS1)

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHG0082-DUP1)

Source: 2406418-01

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) 5.37 0.0100 mmhos/cm 5.43 1.22 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0081 - General Preparation

LCS (BHG0081-BS1)

Prepared: 07/02/24 Analyzed: 07/08/24

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BHG0081-DUP1)

Source: 2406418-01

Prepared: 07/02/24 Analyzed: 07/08/24

pH	7.90	pH Units	7.89	0.127	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 09:17

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-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- 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

July 16, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

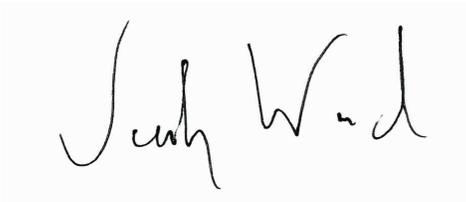
Broomfield, CO 80020

RE: Noble - Hanscome C28-29D Flowline

Work Order #2406462

Enclosed are the results of analyses for samples received by Summit Scientific on 06/28/24 17:56. 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 a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN

Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@1'	2406462-01	Soil	06/28/24 08:00	06/28/24 17:56
FL01-01@1'	2406462-02	Soil	06/28/24 08:06	06/28/24 17:56
BKG01@1'	2406462-03	Soil	06/28/24 08:10	06/28/24 17:56
BKG01@2'	2406462-04	Soil	06/28/24 08:12	06/28/24 17:56

Case Narrative

This revised report has been reissued per client request on 7/16/2024.
Original report sent on 7/10/2024 at 09:28 MT.

Summit Scientific

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

Lab ID	Page 1 of 1
2406462	

Client: Noble/Tasman		Project Manager: Jake Whritenour		Send Invoice To: Company: Chevron	
Address: 6855 W 119th Ave		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Hanscome C28-29D FL	
City/State/Zip: Broomfield / CO / 80020				AFE#: UWRWE - A3135 - ABN	
Phone: 970-214-7901		Project Name: Hanscome C28-29D Flowline		PO/Billing Codes:	
Sampler Name: Lillian Buck		Project Number:		Contact: Dan Peterson ^{us} Miguel Barron	

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		HOLD
1	FL01R-W e1'	6/28/24	0800	3			X			X			X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	FL01-O1 e1'	↓	0806	↓									X	X	X	X	X	X		
3	BH601 e1'	↓	0810	2											X	X	X			
4	BH601 e2'	↓	0812	↓											X	X	X			
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>Lillian Buck</u>	Date/Time: <u>6/28/24 1000</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>6/28/24 1000</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>6/28/24 1756</u>	Received by: <u>RAEL</u>	Date/Time: <u>6/28/24 1754</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>8.8</u>	Corrected Temperature: <u>8</u>	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2406462

Client: Nobel Casman Client Project ID: Hanscome C28-290 Flawline

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

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"/>	on site
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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 6/28/24
Custodian Printed Name Date/Time



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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01R-W@1'
2406462-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0077	07/02/24	07/02/24	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: **06/28/24 08:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0349	87.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0078	07/02/24	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.54	52.4 %		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 - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01R-W@1'
2406462-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0566	0.00500	mg/kg	1	BHG0006	07/01/24	07/02/24	EPA 8270D SIM	
Anthracene	0.0893	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.100	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0653	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.113	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0407	0.00500	"	"	"	"	"	"	
Chrysene	0.0915	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0101	0.00500	"	"	"	"	"	"	
Fluoranthene	0.244	0.00500	"	"	"	"	"	"	E
Fluorene	0.0667	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0268	0.00500	"	"	"	"	"	"	
Pyrene	0.268	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	0.00651	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0132	0.00500	"	"	"	"	"	"	

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	49.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0064	07/02/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.95	0.200	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01R-W@1'
2406462-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	75.0	0.400	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	
Cadmium	0.215	0.200	"	"	"	"	"	"	
Copper	5.05	0.400	"	"	"	"	"	"	
Lead	45.8	0.200	"	"	"	"	"	"	
Nickel	4.73	0.400	"	"	"	"	"	"	
Silver	0.0414	0.0200	"	"	"	"	"	"	
Zinc	20.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0061	07/02/24	07/02/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	103	0.0500	mg/L dry	1	BHG0122	07/03/24	07/09/24	EPA 6020B	
Magnesium	19.0	0.0500	"	"	"	"	"	"	
Sodium	16.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.394	0.00100	units	1	BHG0209	07/09/24	07/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BHG0033	07/01/24	07/02/24	Calculation	

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01R-W@1'
2406462-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.232	0.0100	mmhos/cm	1	BHG0132	07/03/24	07/08/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/28/24 08:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.53		pH Units	1	BHG0131	07/03/24	07/08/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01-01@1'
2406462-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0077	07/02/24	07/02/24	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: **06/28/24 08:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0440	110 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0078	07/02/24	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.18	73.5 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01-01@1'
2406462-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0126	0.00500	mg/kg	1	BHG0006	07/01/24	07/02/24	EPA 8270D SIM	
Anthracene	0.0260	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0308	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0220	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0364	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0121	0.00500	"	"	"	"	"	"	
Chrysene	0.0271	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00629	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0751	0.00500	"	"	"	"	"	"	
Fluorene	0.0162	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0112	0.00500	"	"	"	"	"	"	
Pyrene	0.0757	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0169	50.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0064	07/02/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.78	0.200	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01-01@1'
2406462-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	58.4	0.400	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	
Cadmium	0.241	0.200	"	"	"	"	"	"	
Copper	5.64	0.400	"	"	"	"	"	"	
Lead	8.80	0.200	"	"	"	"	"	"	
Nickel	3.99	0.400	"	"	"	"	"	"	
Silver	0.0325	0.0200	"	"	"	"	"	"	
Zinc	22.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0061	07/02/24	07/02/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.4	0.0500	mg/L dry	1	BHG0122	07/03/24	07/09/24	EPA 6020B	
Magnesium	11.0	0.0500	"	"	"	"	"	"	
Sodium	59.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.29	0.00100	units	1	BHG0209	07/09/24	07/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.9		%	1	BHG0033	07/01/24	07/02/24	Calculation	

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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

FL01-01@1'
2406462-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.922	0.0100	mmhos/cm	1	BHG0132	07/03/24	07/08/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/28/24 08:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BHG0131	07/03/24	07/08/24	EPA 9045D	

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Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

BKG01@1'
2406462-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHG0064	07/02/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.74	0.200	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	
Barium	42.9	0.400	"	"	"	"	"	"	
Cadmium	0.200	0.200	"	"	"	"	"	"	
Copper	4.39	0.400	"	"	"	"	"	"	
Lead	6.62	0.200	"	"	"	"	"	"	
Nickel	3.45	0.400	"	"	"	"	"	"	
Silver	0.0222	0.0200	"	"	"	"	"	"	
Zinc	15.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0061	07/02/24	07/02/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	121	0.0500	mg/L dry	1	BHG0122	07/03/24	07/09/24	EPA 6020B	
Magnesium	37.4	0.0500	"	"	"	"	"	"	
Sodium	54.9	0.0500	"	"	"	"	"	"	

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Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

BKG01@1'
2406462-03 (Soil)

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Calculated Analysis

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.12	0.00100	units	1	BHG0209	07/09/24	07/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	BHG0033	07/01/24	07/02/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.470	0.0100	mmhos/cm	1	BHG0132	07/03/24	07/08/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/28/24 08:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.55		pH Units	1	BHG0131	07/03/24	07/08/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

BKG01@2'
2406462-04 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHG0064	07/02/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.85	0.200	mg/kg dry	1	BHG0025	07/01/24	07/03/24	EPA 6020B	
Barium	49.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.61	0.400	"	"	"	"	"	"	
Lead	6.94	0.200	"	"	"	"	"	"	
Nickel	3.88	0.400	"	"	"	"	"	"	
Silver	0.0223	0.0200	"	"	"	"	"	"	
Zinc	16.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0061	07/02/24	07/02/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	31.4	0.0500	mg/L dry	1	BHG0122	07/03/24	07/09/24	EPA 6020B	
Magnesium	11.8	0.0500	"	"	"	"	"	"	
Sodium	25.8	0.0500	"	"	"	"	"	"	

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Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

BKG01@2'
2406462-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.996	0.00100	units	1	BHG0209	07/09/24	07/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	BHG0033	07/01/24	07/02/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.268	0.0100	mmhos/cm	1	BHG0132	07/03/24	07/08/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/28/24 08:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.67		pH Units	1	BHG0131	07/03/24	07/08/24	EPA 9045D	

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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0077 - EPA 5030 Soil MS

Blank (BHG0077-BLK1)

Prepared & Analyzed: 07/02/24

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0360</i>		<i>"</i>	<i>0.0400</i>		<i>90.0</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>				

LCS (BHG0077-BS1)

Prepared & Analyzed: 07/02/24

Benzene	0.0877	0.0020	mg/kg	0.100		87.7	70-130				
Toluene	0.0993	0.0050	"	0.100		99.3	70-130				
Ethylbenzene	0.0959	0.0050	"	0.100		95.9	70-130				
m,p-Xylene	0.189	0.010	"	0.200		94.5	70-130				
o-Xylene	0.0921	0.0050	"	0.100		92.1	70-130				
1,2,4-Trimethylbenzene	0.0884	0.0050	"	0.100		88.4	70-130				
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130				
Naphthalene	0.0852	0.0038	"	0.100		85.2	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>		<i>91.6</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0423</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0378</i>		<i>"</i>	<i>0.0400</i>		<i>94.5</i>	<i>50-150</i>				

Matrix Spike (BHG0077-MS1)

Source: 2406462-01

Prepared & Analyzed: 07/02/24

Benzene	0.0960	0.0020	mg/kg	0.100	ND	96.0	70-130				
Toluene	0.106	0.0050	"	0.100	ND	106	70-130				
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130				
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130				
o-Xylene	0.0998	0.0050	"	0.100	ND	99.8	70-130				
1,2,4-Trimethylbenzene	0.0973	0.0050	"	0.100	ND	97.3	70-130				
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130				
Naphthalene	0.0958	0.0038	"	0.100	ND	95.8	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>				

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Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0077 - EPA 5030 Soil MS

Matrix Spike Dup (BHG0077-MSD1)	Source: 2406462-01			Prepared & Analyzed: 07/02/24						
Benzene	0.0936	0.0020	mg/kg	0.100	ND	93.6	70-130	2.56	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	1.13	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	5.26	30	
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130	4.48	30	
o-Xylene	0.0985	0.0050	"	0.100	ND	98.5	70-130	1.36	30	
1,2,4-Trimethylbenzene	0.0929	0.0050	"	0.100	ND	92.9	70-130	4.67	30	
1,3,5-Trimethylbenzene	0.0935	0.0050	"	0.100	ND	93.5	70-130	4.88	30	
Naphthalene	0.100	0.0038	"	0.100	ND	100	70-130	4.41	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>50-150</i>			

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0078 - EPA 3550A

Blank (BHG0078-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	15.4		"	12.5		124		30-150			

LCS (BHG0078-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	413	50	mg/kg	500		82.6		70-130			
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		93.2		30-150			

Matrix Spike (BHG0078-MS1)

Source: 2406462-01

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	396	50	mg/kg	500	ND	79.1		70-130			
Surrogate: <i>o</i> -Terphenyl	9.62		"	12.5		77.0		30-150			

Matrix Spike Dup (BHG0078-MSD1)

Source: 2406462-01

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	441	50	mg/kg	500	ND	88.2		70-130	10.8	20	
Surrogate: <i>o</i> -Terphenyl	9.92		"	12.5		79.3		30-150			

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0006 - EPA 5030 Soil MS

Blank (BHG0006-BLK1)

Prepared: 07/01/24 Analyzed: 07/02/24

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>0.0195</i>		"	<i>0.0333</i>		<i>58.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0231</i>		"	<i>0.0333</i>		<i>69.4</i>	<i>40-150</i>			

LCS (BHG0006-BS1)

Prepared: 07/01/24 Analyzed: 07/02/24

Acenaphthene	0.0288	0.00500	mg/kg	0.0333		86.4	31-137			
Anthracene	0.0282	0.00500	"	0.0333		84.6	30-120			
Benzo (a) anthracene	0.0326	0.00500	"	0.0333		97.8	30-120			
Benzo (a) pyrene	0.0313	0.00500	"	0.0333		93.8	30-120			
Benzo (b) fluoranthene	0.0364	0.00500	"	0.0333		109	30-120			
Benzo (k) fluoranthene	0.0317	0.00500	"	0.0333		95.1	30-120			
Chrysene	0.0284	0.00500	"	0.0333		85.1	30-120			
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333		61.0	30-120			
Fluoranthene	0.0288	0.00500	"	0.0333		86.3	30-120			
Fluorene	0.0277	0.00500	"	0.0333		83.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0207	0.00500	"	0.0333		62.0	30-120			
Pyrene	0.0345	0.00500	"	0.0333		103	35-142			
1-Methylnaphthalene	0.0279	0.00500	"	0.0333		83.7	35-142			
2-Methylnaphthalene	0.0276	0.00500	"	0.0333		82.9	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0283</i>		"	<i>0.0333</i>		<i>84.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0306</i>		"	<i>0.0333</i>		<i>91.7</i>	<i>40-150</i>			

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0006 - EPA 5030 Soil MS

Matrix Spike (BHG0006-MS1)

Source: 2406239-19

Prepared: 07/01/24 Analyzed: 07/02/24

Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	58.0	31-137			
Anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120			
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120			
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	ND	74.7	30-120			
Benzo (b) fluoranthene	0.0300	0.00500	"	0.0333	ND	90.0	30-120			
Benzo (k) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.6	30-120			
Chrysene	0.0186	0.00500	"	0.0333	ND	55.8	30-120			
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120			
Fluoranthene	0.0188	0.00500	"	0.0333	ND	56.3	30-120			
Fluorene	0.0173	0.00500	"	0.0333	ND	52.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.2	30-120			
Pyrene	0.0228	0.00500	"	0.0333	ND	68.5	35-142			
1-Methylnaphthalene	0.0178	0.00500	"	0.0333	ND	53.3	15-130			
2-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.4	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0180		"	0.0333		54.0	40-150			
Surrogate: Fluoranthene-d10	0.0200		"	0.0333		60.1	40-150			

Matrix Spike Dup (BHG0006-MSD1)

Source: 2406239-19

Prepared: 07/01/24 Analyzed: 07/02/24

Acenaphthene	0.0245	0.00500	mg/kg	0.0333	ND	73.6	31-137	23.8	30
Anthracene	0.0212	0.00500	"	0.0333	ND	63.7	30-120	15.4	30
Benzo (a) anthracene	0.0255	0.00500	"	0.0333	ND	76.5	30-120	15.7	30
Benzo (a) pyrene	0.0253	0.00500	"	0.0333	ND	76.0	30-120	1.73	30
Benzo (b) fluoranthene	0.0322	0.00500	"	0.0333	ND	96.6	30-120	7.07	30
Benzo (k) fluoranthene	0.0271	0.00500	"	0.0333	ND	81.3	30-120	4.71	30
Chrysene	0.0219	0.00500	"	0.0333	ND	65.8	30-120	16.6	30
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	5.97	30
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.4	30-120	14.9	30
Fluorene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	13.6	30
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	6.67	30
Pyrene	0.0289	0.00500	"	0.0333	ND	86.8	35-142	23.5	30
1-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130	9.39	50
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130	10.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0208		"	0.0333		62.3	40-150		
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.2	40-150		

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0293 - EPA 5030 Soil MS

Blank (BHG0293-BLK1)

Prepared & Analyzed: 07/11/24

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>0.0254</i>		"	<i>0.0333</i>		<i>76.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0251</i>		"	<i>0.0333</i>		<i>75.3</i>	<i>40-150</i>			

LCS (BHG0293-BS1)

Prepared & Analyzed: 07/11/24

Acenaphthene	0.0240	0.00500	mg/kg	0.0333		72.1	31-137			
Anthracene	0.0240	0.00500	"	0.0333		72.1	30-120			
Benzo (a) anthracene	0.0251	0.00500	"	0.0333		75.4	30-120			
Benzo (a) pyrene	0.0229	0.00500	"	0.0333		68.6	30-120			
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333		70.8	30-120			
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333		73.4	30-120			
Chrysene	0.0242	0.00500	"	0.0333		72.7	30-120			
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333		58.4	30-120			
Fluoranthene	0.0245	0.00500	"	0.0333		73.6	30-120			
Fluorene	0.0243	0.00500	"	0.0333		72.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333		54.6	30-120			
Pyrene	0.0270	0.00500	"	0.0333		81.1	35-142			
1-Methylnaphthalene	0.0267	0.00500	"	0.0333		80.1	35-142			
2-Methylnaphthalene	0.0244	0.00500	"	0.0333		73.2	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0268</i>		"	<i>0.0333</i>		<i>80.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0255</i>		"	<i>0.0333</i>		<i>76.5</i>	<i>40-150</i>			

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0293 - EPA 5030 Soil MS

Matrix Spike (BHG0293-MS1)

Source: 2406465-05

Prepared & Analyzed: 07/11/24

Acenaphthene	0.0176	0.00500	mg/kg	0.0333	ND	52.7	31-137		
Anthracene	0.0175	0.00500	"	0.0333	ND	52.4	30-120		
Benzo (a) anthracene	0.0177	0.00500	"	0.0333	ND	53.2	30-120		
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120		
Benzo (b) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.6	30-120		
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120		
Chrysene	0.0167	0.00500	"	0.0333	ND	50.2	30-120		
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.2	30-120		
Fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120		
Fluorene	0.0172	0.00500	"	0.0333	ND	51.5	30-120		
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.2	30-120		
Pyrene	0.0203	0.00500	"	0.0333	ND	60.9	35-142		
1-Methylnaphthalene	0.0194	0.00500	"	0.0333	ND	58.1	15-130		
2-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.0	40-150		
Surrogate: Fluoranthene-d10	0.0170		"	0.0333		50.9	40-150		

Matrix Spike Dup (BHG0293-MSD1)

Source: 2406465-05

Prepared & Analyzed: 07/11/24

Acenaphthene	0.0209	0.00500	mg/kg	0.0333	ND	62.8	31-137	17.6	30
Anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	16.8	30
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	17.9	30
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	15.9	30
Benzo (b) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.0	30-120	18.2	30
Benzo (k) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	14.9	30
Chrysene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	23.1	30
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.6	30-120	14.2	30
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	13.4	30
Fluorene	0.0220	0.00500	"	0.0333	ND	66.0	30-120	24.6	30
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	23.0	30
Pyrene	0.0256	0.00500	"	0.0333	ND	76.9	35-142	23.2	30
1-Methylnaphthalene	0.0277	0.00500	"	0.0333	ND	83.2	15-130	35.6	50
2-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.4	15-130	34.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.9	40-150		
Surrogate: Fluoranthene-d10	0.0197		"	0.0333		59.0	40-150		

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BHG0064 - EPA 3050B

Blank (BHG0064-BLK1)				Prepared: 07/02/24 Analyzed: 07/04/24							
Boron	ND	2.00	mg/L								
LCS (BHG0064-BS1)				Prepared: 07/02/24 Analyzed: 07/04/24							
Boron	5.33	2.00	mg/L	5.00	107	80-120					
Duplicate (BHG0064-DUP1)				Source: 2406447-01		Prepared: 07/02/24 Analyzed: 07/04/24					
Boron	0.401	2.00	mg/L		0.426			6.13	20		
Matrix Spike (BHG0064-MS1)				Source: 2406447-01		Prepared: 07/02/24 Analyzed: 07/04/24					
Boron	5.62	2.00	mg/L	4.97	0.426	105	75-125				
Matrix Spike Dup (BHG0064-MSD1)				Source: 2406447-01		Prepared: 07/02/24 Analyzed: 07/04/24					
Boron	6.17	2.00	mg/L	4.97	0.426	116	75-125	9.31	25		

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHG0025 - EPA 3050B

Blank (BHG0025-BLK1)

Prepared: 07/01/24 Analyzed: 07/03/24

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 (BHG0025-BS1)

Prepared: 07/01/24 Analyzed: 07/03/24

Arsenic	38.1	0.200	mg/kg wet	40.0	95.3	80-120
Barium	39.1	0.400	"	40.0	97.8	80-120
Cadmium	1.95	0.200	"	2.00	97.4	80-120
Copper	42.2	0.400	"	40.0	106	80-120
Lead	19.8	0.200	"	20.0	98.9	80-120
Nickel	41.3	0.400	"	40.0	103	80-120
Silver	1.96	0.0200	"	2.00	98.2	80-120
Zinc	40.9	0.400	"	40.0	102	80-120
Selenium	3.84	0.260	"	4.00	96.0	80-120

Duplicate (BHG0025-DUP1)

Source: 2406450-01

Prepared: 07/01/24 Analyzed: 07/03/24

Arsenic	4.77	0.200	mg/kg dry	4.47	6.56	20
Barium	75.0	0.400	"	75.2	0.305	20
Cadmium	0.289	0.200	"	0.311	7.51	20
Copper	8.06	0.400	"	7.72	4.38	20
Lead	11.9	0.200	"	11.0	7.96	20
Nickel	8.13	0.400	"	7.63	6.37	20
Silver	0.0832	0.0200	"	0.0847	1.70	20
Zinc	25.9	0.400	"	24.7	4.95	20
Selenium	0.179	0.260	"	ND	200	20

QR-01

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

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 BHG0025 - EPA 3050B

Matrix Spike (BHG0025-MS1)

Source: 2406450-01

Prepared: 07/01/24 Analyzed: 07/03/24

Arsenic	44.4	0.179	mg/kg dry	43.1	4.47	92.8	75-125				
Barium	108	0.357	"	43.1	75.2	76.0	75-125				
Cadmium	2.34	0.179	"	2.15	0.311	94.4	75-125				
Copper	24.6	0.357	"	43.1	7.72	39.3	75-125				QM-05
Lead	31.1	0.179	"	21.5	11.0	93.7	75-125				
Nickel	25.6	0.357	"	43.1	7.63	41.6	75-125				QM-05
Silver	2.15	0.0179	"	2.15	0.0847	96.1	75-125				
Zinc	43.2	0.357	"	43.1	24.7	43.0	75-125				QM-05
Selenium	3.23	0.232	"	4.31	0.157	71.3	75-125				QM-07

Matrix Spike Dup (BHG0025-MSD1)

Source: 2406450-01

Prepared: 07/01/24 Analyzed: 07/03/24

Arsenic	46.4	0.200	mg/kg dry	45.7	4.47	91.7	75-125	4.30	25		
Barium	115	0.400	"	45.7	75.2	87.6	75-125	6.53	25		
Cadmium	2.52	0.200	"	2.28	0.311	96.9	75-125	7.38	25		
Copper	27.2	0.400	"	45.7	7.72	42.6	75-125	9.68	25		QM-05
Lead	31.8	0.200	"	22.8	11.0	91.4	75-125	2.22	25		
Nickel	28.0	0.400	"	45.7	7.63	44.6	75-125	9.11	25		QM-05
Silver	2.26	0.0200	"	2.28	0.0847	95.4	75-125	4.92	25		
Zinc	47.0	0.400	"	45.7	24.7	48.9	75-125	8.49	25		QM-05
Selenium	3.49	0.260	"	4.57	ND	76.4	75-125	7.82	25		

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline
Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHG0061 - 3060A Mod

Blank (BHG0061-BLK1)

Prepared & Analyzed: 07/02/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHG0061-BS1)

Prepared & Analyzed: 07/02/24

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.8 80-120

Duplicate (BHG0061-DUP1)

Source: 2406462-01

Prepared & Analyzed: 07/02/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHG0061-MS1)

Source: 2406462-01

Prepared & Analyzed: 07/02/24

Chromium, Hexavalent 27.6 0.30 mg/kg dry 28.4 ND 97.4 75-125

Matrix Spike Dup (BHG0061-MSD1)

Source: 2406462-01

Prepared & Analyzed: 07/02/24

Chromium, Hexavalent 27.0 0.30 mg/kg dry 28.4 ND 95.4 75-125 2.07 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0122 - General Preparation

Blank (BHG0122-BLK1)

Prepared: 07/03/24 Analyzed: 07/08/24

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHG0122-BS1)

Prepared: 07/03/24 Analyzed: 07/08/24

Calcium	5.15	0.0500	mg/L wet	5.00	103	70-130				
Magnesium	5.29	0.0500	"	5.00	106	70-130				
Sodium	5.29	0.0500	"	5.00	106	70-130				

Summit Scientific



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
 Project Manager: Jacob Whritenour

Reported:
 07/16/24 08:45

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

Summit Scientific

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

Batch BHG0033 - General Preparation

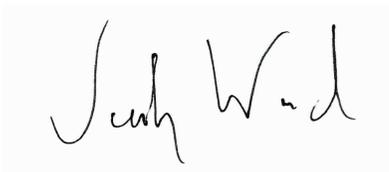
Duplicate (BHG0033-DUP2)

Source: 2406462-01

Prepared: 07/01/24 Analyzed: 07/02/24

% Solids	88.9		%		88.2			0.770	20	
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Summit Scientific



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0132 - General Preparation

Blank (BHG0132-BLK1)

Prepared: 07/03/24 Analyzed: 07/08/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0132-BS1)

Prepared: 07/03/24 Analyzed: 07/08/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHG0132-DUP1)

Source: 2406239-19

Prepared: 07/03/24 Analyzed: 07/08/24

Specific Conductance (EC) 0.0288 0.0100 mmhos/cm 0.0290 0.588 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHG0131 - General Preparation

LCS (BHG0131-BS1)

Prepared: 07/03/24 Analyzed: 07/08/24

pH	9.22	pH Units	9.18	100	95-105
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Duplicate (BHG0131-DUP1)

Source: 2406239-19

Prepared: 07/03/24 Analyzed: 07/08/24

pH	7.43	pH Units	7.55	1.60	20
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Summit Scientific



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN
Project Manager: Jacob Whritenour

Reported:
07/16/24 08:45

Notes and Definitions

- 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.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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