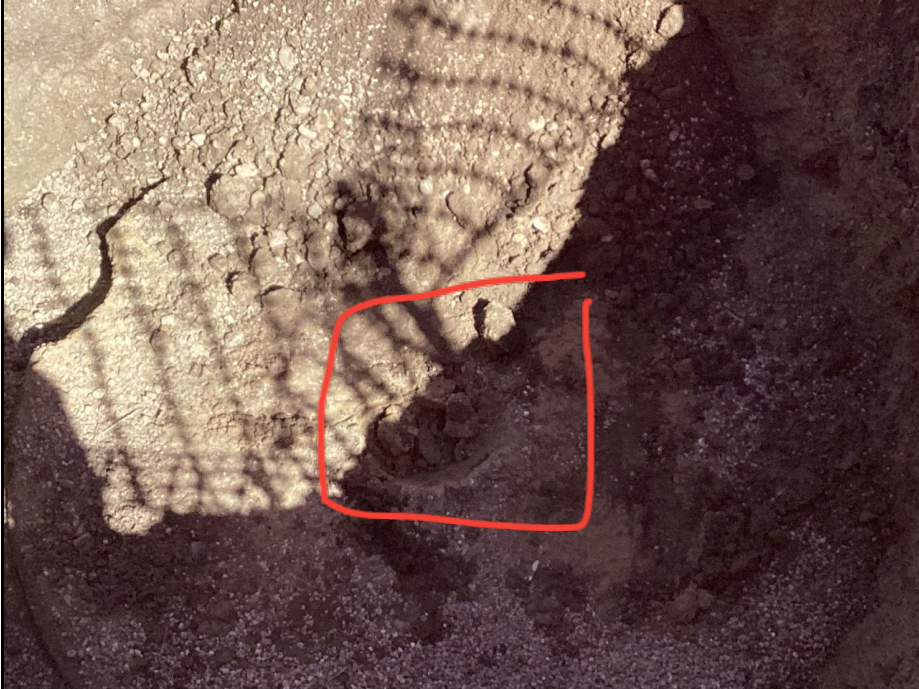
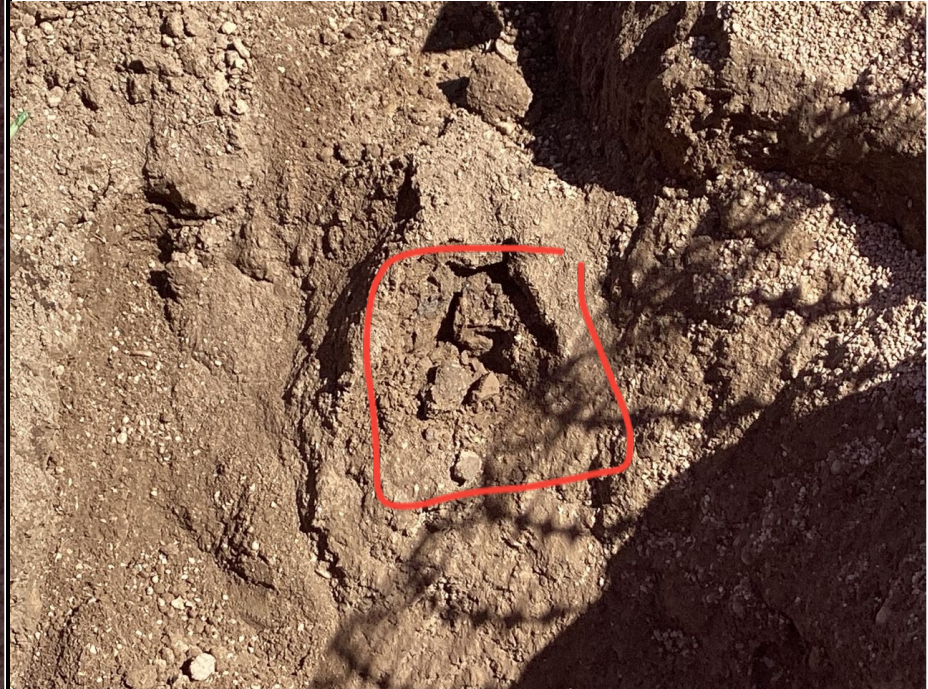




SITE NAME: HULLABALOO STATE Y21 ECONODE							DATE: 4/3/2024	REM. PROJECT #: 34326	WEATHER: 50S SUNNY		
SITE DIRECTIONS:							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.144295 / -104.558404							TASMAN PERSONNEL: CL				
SOIL TYPES: SW							SURFACE GRADIENT:				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity		
							Above Ground Storage Tank (AST)				
4/3/2024 11:16	FS01@4'	0.2	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		1		
4/3/2024 11:18	SS01@2'	0.2	No Staining	No Odor	Yes	On-hold	Separator				
4/3/2024 11:20	SS02@2'	0.2	No Staining	No Odor	Yes	On-hold	Emission Control Device (ECD)				
4/3/2024 11:23	SS03@2'	0.1	No Staining	No Odor	Yes	On-hold	Dump Line				
4/3/2024 11:25	SS04@2'	1.4	No Staining	No Odor	Yes	Lab	Wellhead				
							Flowline				
							Other:				
							Soil Loads Removed				
							IMPACTED SOIL IDENTIFIED?				
							ESTIMATED VOLUME OF IMPACTS:				
							Date	Number	CY		
							Total Removed		0	0	
							Disposal Facility:				
							Groundwater Recovery				
							DATE GW ENCOUNTERED:			DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date	BBLs			
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed		0		
							Disposal Facility:				

Photographic Log

					
<p>Material:</p>	<p>Volume:</p>	<p>Contents:</p>	<p>Equipment ID: SS01@2' Equipment Type:</p>		
<p>Material:</p>	<p>Volume:</p>	<p>Contents:</p>	<p>Material:</p>	<p>Volume:</p>	<p>Contents:</p>
<p>Notes/Conditions:</p>			<p>Notes/Conditions:</p>		

Photographic Log

					
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		

Photographic Log



Equipment ID: SS04@2'		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. (100322) - HULLABALOO STATE Y21 ECONODE

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FS01@4'	04/03/24	0.2	No Staining	No Odor	Lab	40.144287	-104.558391	0.9
SS01@2'	04/03/24	0.2	No Staining	No Odor	Grab	40.144294	-104.558385	0.9
SS02@2'	04/03/24	0.2	No Staining	No Odor	Grab	40.144286	-104.558380	0.9
SS03@2'	04/03/24	0.1	No Staining	No Odor	Grab	40.144276	-104.558392	0.9
SS04@2'	04/03/24	1.4	No Staining	No Odor	Lab	40.144283	-104.558401	0.9

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 6 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. (100322) - HULLABALOO STATE Y21 ECONODE

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 ^{1,2}		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 ^{1,2,3}		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
FS01@4'	04/03/24	<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@2'	04/03/24	<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)
SSR ^{1,2}		6 - 8.3	<6	<4mmhos/cm	2
FS01@4'	04/03/24	8.70	2.30	0.590	<2.00
SS04@2'	04/03/24	8.27	0.352	0.266	<2.00

Soil Sample ID	Date	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@4'	04/03/24	4.48	134	0.280	<0.30	9.76	8.03	11.7	<0.260	0.0408	19.0
SS04@2'	04/03/24	3.82	118	0.237	<0.30	8.39	6.95	9.03	<0.260	0.0390	18.2

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards 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 and Carbon Management 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
 < = Analytical result is less than the indicated laboratory reporting limit

1,2,4 - TMB = 1,2,4 Trimethylbenzene
 1,3,5 - TMB = 1,3,5 Trimethylbenzene
 Benz(a) = Benzo(a)anthracene
 Benzo(b) = Benzo(b)fluoranthene
 Benzo(k) = Benzo(k)fluoranthene
 Benzo(a) = Benzo(a)pyrene
 A,H = Dibenzo(a,h)anthracene
 1,2,3-CD = Indeno(1,2,3-cd)pyrene
 1-M = 1-methylnaphthalene
 2-M = 2-methylnaphthalene

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



FS01@4'
(04/03/2024)
PID = 0.2 ppm
pH = **8.70**
Arsenic = **4.48** mg/kg
Barium = **134** mg/kg

SS01@2'
(04/03/2024)
PID = 0.2 ppm

SS02@3'
(04/03/2024)
PID = 0.2 ppm

SS04@3'
(04/03/2024)
PID = 1.4 ppm
Arsenic = **3.82** mg/kg
Barium = **118** mg/kg

SS03@3'
(04/03/2024)
PID = 0.1 ppm

- Legend**
- Excavation Extent (Collected via Trimble GPS)
 - ⊕ Soil Sample Location – Field Screen (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

0 ft. 10 ft. 20 ft.

Image Source: Google Earth; Google 2021

DATE:	04/10/2024
DESIGNED BY:	JW
DRAWN BY:	AC



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

Noble Energy, Inc. (100322) – DJ Basin
Hullabaloo State Y21 Econode
 NWNW, Section 16, Township 2 North, Range 64 West
 Weld County, Colorado

Tank Battery Closure & Soil
 Analytical Results Map
 (04/03/2024)

FIGURE
1

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 15, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Hullabaloo State Y 21 Econode

Work Order #2404059

Enclosed are the results of analyses for samples received by Summit Scientific on 04/03/24 17:47. 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 - Hullaballoo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@4'	2404059-01	Soil	04/03/24 11:16	04/03/24 17:47
SS04@2'	2404059-05	Soil	04/03/24 11:25	04/03/24 17:47

S₂

Sample Receipt Checklist

S2 Work Order# 2404059

Client: Noble Tashman Client Project ID: Hullabaloo State y21 Econode

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

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

Temp (°C) 0.1 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"/>	on 7/05
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

4/3/24
Date/Time



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

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

FS01@4'
2404059-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHD0222	04/08/24	04/09/24	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: **04/03/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0277	69.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0445	111 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0430	107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHD0226	04/08/24	04/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.40	75.2 %		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 - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

FS01@4'
2404059-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0207	04/08/24	04/09/24	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: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0256	76.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0173	52.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0402	04/12/24	05/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

FS01@4'
2404059-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.48	0.200	mg/kg dry	1	BHD0680	04/19/24	05/10/24	EPA 6020B
Barium	134	0.400	"	"	"	"	"	"
Cadmium	0.280	0.200	"	"	"	"	"	"
Copper	9.76	0.400	"	"	"	"	"	"
Lead	8.03	0.200	"	"	"	"	"	"
Nickel	11.7	0.400	"	"	"	"	"	"
Silver	0.0408	0.0200	"	"	"	"	"	"
Zinc	19.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0464	04/15/24	04/17/24	EPA 7196A	

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

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.8	0.0500	mg/L dry	1	BHD0701	04/20/24	04/30/24	EPA 6020B	
Magnesium	7.41	0.0500	"	"	"	"	"	"	
Sodium	56.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.30	0.00100	units	1	BHE0026	05/01/24	05/01/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/03/24 11:16**

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

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 - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

FS01@4'
2404059-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.5	%	1	BHD0362	04/11/24	04/12/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.590	0.0100	mmhos/cm	1	BHD0703	04/20/24	04/22/24	EPA 120.1	

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

Date Sampled: **04/03/24 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.70		pH Units	1	BHD0702	04/20/24	04/22/24	EPA 9045D	

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 - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

SS04@2'
2404059-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHD0222	04/08/24	04/09/24	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: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0274	68.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0448	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0441	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0226	04/08/24	04/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.39	59.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

SS04@2'
2404059-05 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0207	04/08/24	04/09/24	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: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0340	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0231	69.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0402	04/12/24	05/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

SS04@2'
2404059-05 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.82	0.200	mg/kg dry	1	BHD0680	04/19/24	05/10/24	EPA 6020B
Barium	118	0.400	"	"	"	"	"	"
Cadmium	0.237	0.200	"	"	"	"	"	"
Copper	8.39	0.400	"	"	"	"	"	"
Lead	6.95	0.200	"	"	"	"	"	"
Nickel	9.03	0.400	"	"	"	"	"	"
Silver	0.0390	0.0200	"	"	"	"	"	"
Zinc	18.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0464	04/15/24	04/17/24	EPA 7196A	

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

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.6	0.0500	mg/L dry	1	BHD0701	04/20/24	04/30/24	EPA 6020B	
Magnesium	6.46	0.0500	"	"	"	"	"	"	
Sodium	9.85	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.352	0.00100	units	1	BHE0026	05/01/24	05/01/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

SS04@2'
2404059-05 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.7	%	1	BHD0362	04/11/24	04/12/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.266	0.0100	mmhos/cm	1	BHD0703	04/20/24	04/22/24	EPA 120.1	

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

Date Sampled: **04/03/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BHD0702	04/20/24	04/22/24	EPA 9045D	

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHD0222 - EPA 5030 Soil MS

Blank (BHD0222-BLK1)

Prepared: 04/08/24 Analyzed: 04/09/24

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>	0.0336		"	0.0400		84.0	50-150				
<i>Surrogate: Toluene-d8</i>	0.0431		"	0.0400		108	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0418		"	0.0400		105	50-150				

LCS (BHD0222-BS1)

Prepared: 04/08/24 Analyzed: 04/09/24

Benzene	0.0919	0.0020	mg/kg	0.100		91.9	70-130				
Toluene	0.130	0.0050	"	0.100		130	70-130				
Ethylbenzene	0.125	0.0050	"	0.100		125	70-130				
m,p-Xylene	0.253	0.010	"	0.200		126	70-130				
o-Xylene	0.124	0.0050	"	0.100		124	70-130				
1,2,4-Trimethylbenzene	0.114	0.0050	"	0.100		114	70-130				
1,3,5-Trimethylbenzene	0.119	0.0050	"	0.100		119	70-130				
Naphthalene	0.0802	0.0038	"	0.100		80.2	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0276		"	0.0400		69.0	50-150				
<i>Surrogate: Toluene-d8</i>	0.0447		"	0.0400		112	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0431		"	0.0400		108	50-150				

Matrix Spike (BHD0222-MS1)

Source: 2404059-01

Prepared: 04/08/24 Analyzed: 04/09/24

Benzene	0.0856	0.0020	mg/kg	0.100	ND	85.6	70-130				
Toluene	0.119	0.0050	"	0.100	ND	119	70-130				
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130				
m,p-Xylene	0.231	0.010	"	0.200	ND	115	70-130				
o-Xylene	0.115	0.0050	"	0.100	ND	115	70-130				
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130				
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130				
Naphthalene	0.0770	0.0038	"	0.100	ND	77.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0247		"	0.0400		61.7	50-150				
<i>Surrogate: Toluene-d8</i>	0.0442		"	0.0400		110	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0417		"	0.0400		104	50-150				

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHD0222 - EPA 5030 Soil MS

Matrix Spike Dup (BHD0222-MSD1)	Source: 2404059-01			Prepared: 04/08/24 Analyzed: 04/09/24						
Benzene	0.0874	0.0020	mg/kg	0.100	ND	87.4	70-130	2.05	30	
Toluene	0.126	0.0050	"	0.100	ND	126	70-130	5.57	30	
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	2.25	30	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	70-130	3.32	30	
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130	4.18	30	
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	4.35	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	3.01	30	
Naphthalene	0.0760	0.0038	"	0.100	ND	76.0	70-130	1.22	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0282</i>		<i>"</i>	<i>0.0400</i>		<i>70.6</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0461</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>50-150</i>			

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHD0226 - EPA 3550A

Blank (BHD0226-BLK1)

Prepared: 04/08/24 Analyzed: 04/09/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.7		"	12.5		102		30-150			

LCS (BHD0226-BS1)

Prepared: 04/08/24 Analyzed: 04/09/24

C10-C28 (DRO)	550	50	mg/kg	500		110		70-130			
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.4		30-150			

Matrix Spike (BHD0226-MS1)

Source: 2404059-01

Prepared: 04/08/24 Analyzed: 04/09/24

C10-C28 (DRO)	529	50	mg/kg	500	14.2	103		70-130			
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5		89.1		30-150			

Matrix Spike Dup (BHD0226-MSD1)

Source: 2404059-01

Prepared: 04/08/24 Analyzed: 04/09/24

C10-C28 (DRO)	473	50	mg/kg	500	14.2	91.8		70-130	11.0	20	
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.5		30-150			

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0207 - EPA 5030 Soil MS

Blank (BHD0207-BLK1)

Prepared & Analyzed: 04/08/24

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>0.0246</i>		<i>"</i>	<i>0.0333</i>		<i>73.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0316</i>		<i>"</i>	<i>0.0333</i>		<i>94.8</i>	<i>40-150</i>			

LCS (BHD0207-BS1)

Prepared & Analyzed: 04/08/24

Acenaphthene	0.0312	0.00500	mg/kg	0.0333	93.7	31-137
Anthracene	0.0287	0.00500	"	0.0333	86.2	30-120
Benzo (a) anthracene	0.0275	0.00500	"	0.0333	82.5	30-120
Benzo (a) pyrene	0.0276	0.00500	"	0.0333	82.9	30-120
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333	70.9	30-120
Benzo (k) fluoranthene	0.0261	0.00500	"	0.0333	78.2	30-120
Chrysene	0.0319	0.00500	"	0.0333	95.6	30-120
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333	58.6	30-120
Fluoranthene	0.0293	0.00500	"	0.0333	88.0	30-120
Fluorene	0.0307	0.00500	"	0.0333	92.0	30-120
Indeno (1,2,3-cd) pyrene	0.0206	0.00500	"	0.0333	61.8	30-120
Pyrene	0.0352	0.00500	"	0.0333	105	35-142
1-Methylnaphthalene	0.0353	0.00500	"	0.0333	106	35-142
2-Methylnaphthalene	0.0354	0.00500	"	0.0333	106	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0379</i>		<i>"</i>	<i>0.0333</i>	<i>114</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0301</i>		<i>"</i>	<i>0.0333</i>	<i>90.2</i>	<i>40-150</i>

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0207 - EPA 5030 Soil MS

Matrix Spike (BHD0207-MS1)	Source: 2404046-01			Prepared & Analyzed: 04/08/24						
Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	57.9	31-137			
Anthracene	0.0195	0.00500	"	0.0333	ND	58.5	30-120			
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120			
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	48.0	30-120			
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.7	30-120			
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	30-120			
Chrysene	0.0182	0.00500	"	0.0333	ND	54.7	30-120			
Dibenz (a,h) anthracene	0.0161	0.00500	"	0.0333	ND	48.4	30-120			
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120			
Fluorene	0.0200	0.00500	"	0.0333	ND	60.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0169	0.00500	"	0.0333	ND	50.6	30-120			
Pyrene	0.0201	0.00500	"	0.0333	ND	60.4	35-142			
1-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.5	15-130			
2-Methylnaphthalene	0.0262	0.00500	"	0.0333	ND	78.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0261		"	0.0333		78.4	40-150			
Surrogate: Fluoranthene-d10	0.0203		"	0.0333		60.9	40-150			

Matrix Spike Dup (BHD0207-MSD1)	Source: 2404046-01			Prepared & Analyzed: 04/08/24						
Acenaphthene	0.0305	0.00500	mg/kg	0.0333	ND	91.6	31-137	45.0	30	QR-02
Anthracene	0.0360	0.00500	"	0.0333	ND	108	30-120	59.5	30	QR-02
Benzo (a) anthracene	0.0326	0.00500	"	0.0333	ND	97.9	30-120	52.1	30	QR-02
Benzo (a) pyrene	0.0256	0.00500	"	0.0333	ND	76.9	30-120	46.3	30	QR-02
Benzo (b) fluoranthene	0.0322	0.00500	"	0.0333	ND	96.5	30-120	75.2	30	QR-02
Benzo (k) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120	13.4	30	
Chrysene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	5.95	30	
Dibenz (a,h) anthracene	0.0265	0.00500	"	0.0333	ND	79.6	30-120	48.8	30	QR-02
Fluoranthene	0.0284	0.00500	"	0.0333	ND	85.2	30-120	37.0	30	QR-02
Fluorene	0.0380	0.00500	"	0.0333	ND	114	30-120	62.1	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	33.2	30	QR-02
Pyrene	0.0180	0.00500	"	0.0333	ND	54.1	35-142	11.0	30	
1-Methylnaphthalene	0.0322	0.00500	"	0.0333	ND	96.6	15-130	22.0	50	
2-Methylnaphthalene	0.0410	0.00500	"	0.0333	ND	123	15-130	44.1	50	
Surrogate: 2-Methylnaphthalene-d10	0.0384		"	0.0333		115	40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.3	40-150			

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0402 - EPA 3050B

Blank (BHD0402-BLK1)

Prepared: 04/12/24 Analyzed: 05/05/24

Boron ND 2.00 mg/L

LCS (BHD0402-BS1)

Prepared: 04/12/24 Analyzed: 05/05/24

Boron 4.88 2.00 mg/L 5.00 97.6 80-120

Duplicate (BHD0402-DUP1)

Source: 2404051-01

Prepared: 04/12/24 Analyzed: 05/05/24

Boron 0.535 2.00 mg/L 0.569 6.13 20

Matrix Spike (BHD0402-MS1)

Source: 2404051-01

Prepared: 04/12/24 Analyzed: 05/05/24

Boron 5.48 2.00 mg/L 4.98 0.569 98.6 75-125

Matrix Spike Dup (BHD0402-MSD1)

Source: 2404051-01

Prepared: 04/12/24 Analyzed: 05/05/24

Boron 5.55 2.00 mg/L 4.98 0.569 100 75-125 1.35 25

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

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0680 - EPA 3050B

Blank (BHD0680-BLK1)

Prepared: 04/19/24 Analyzed: 05/10/24

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 (BHD0680-BS1)

Prepared: 04/19/24 Analyzed: 05/10/24

Arsenic	43.0	0.200	mg/kg wet	40.0	107	80-120
Barium	37.8	0.400	"	40.0	94.5	80-120
Cadmium	1.90	0.200	"	2.00	95.2	80-120
Copper	42.4	0.400	"	40.0	106	80-120
Lead	19.5	0.200	"	20.0	97.7	80-120
Nickel	42.0	0.400	"	40.0	105	80-120
Silver	1.94	0.0200	"	2.00	97.1	80-120
Zinc	39.5	0.400	"	40.0	98.8	80-120
Selenium	4.26	0.260	"	4.00	107	80-120

Duplicate (BHD0680-DUP1)

Source: 2404058-01

Prepared: 04/19/24 Analyzed: 05/10/24

Arsenic	1.08	0.200	mg/kg dry	1.03	4.60	20
Barium	33.9	0.400	"	33.5	1.18	20
Cadmium	0.0680	0.200	"	0.0708	4.10	20
Copper	2.60	0.400	"	2.54	2.35	20
Lead	2.86	0.200	"	2.81	1.85	20
Nickel	2.43	0.400	"	2.33	4.17	20
Silver	0.0140	0.0200	"	0.0141	0.546	20
Zinc	7.68	0.400	"	7.27	5.51	20
Selenium	ND	0.260	"	ND		20

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0680 - EPA 3050B

Matrix Spike (BHD0680-MS1)

Source: 2404058-01

Prepared: 04/19/24 Analyzed: 05/10/24

Arsenic	42.9	0.200	mg/kg dry	39.0	1.03	107	75-125			
Barium	66.0	0.400	"	39.0	33.5	83.2	75-125			
Cadmium	2.00	0.200	"	1.95	0.0708	98.7	75-125			
Copper	43.6	0.400	"	39.0	2.54	105	75-125			
Lead	21.9	0.200	"	19.5	2.81	97.9	75-125			
Nickel	43.2	0.400	"	39.0	2.33	105	75-125			
Silver	1.93	0.0200	"	1.95	0.0141	98.3	75-125			
Zinc	39.5	0.400	"	39.0	7.27	82.7	75-125			
Selenium	4.07	0.260	"	3.90	ND	104	75-125			

Matrix Spike Dup (BHD0680-MSD1)

Source: 2404058-01

Prepared: 04/19/24 Analyzed: 05/10/24

Arsenic	43.1	0.200	mg/kg dry	39.0	1.03	108	75-125	0.437	25
Barium	65.7	0.400	"	39.0	33.5	82.6	75-125	0.385	25
Cadmium	1.99	0.200	"	1.95	0.0708	98.4	75-125	0.274	25
Copper	43.7	0.400	"	39.0	2.54	105	75-125	0.157	25
Lead	21.9	0.200	"	19.5	2.81	97.6	75-125	0.250	25
Nickel	43.3	0.400	"	39.0	2.33	105	75-125	0.122	25
Silver	1.92	0.0200	"	1.95	0.0141	97.8	75-125	0.527	25
Zinc	38.5	0.400	"	39.0	7.27	80.0	75-125	2.70	25
Selenium	3.93	0.260	"	3.90	ND	101	75-125	3.51	25

Post Spike (BHD0680-PS1)

Source: 2404058-01

Prepared: 04/19/24 Analyzed: 05/10/24

Arsenic	112		ug/l	100	2.47	109	75-125		
Barium	189		"	100	80.7	109	75-125		
Cadmium	5.29		"	5.00	0.171	102	75-125		
Copper	111		"	100	6.12	105	75-125		
Lead	58.7		"	50.0	6.77	104	75-125		
Nickel	111		"	100	5.61	105	75-125		
Silver	5.21		"	5.00	0.0339	103	75-125		
Zinc	105		"	100	17.5	87.2	75-125		
Selenium	10.5		"	10.0	0.0979	104	75-125		

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHD0464 - 3060A Mod

Blank (BHD0464-BLK1)

Prepared: 04/15/24 Analyzed: 04/17/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHD0464-BS1)

Prepared: 04/15/24 Analyzed: 04/17/24

Chromium, Hexavalent 25.4 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHD0464-DUP1)

Source: 2404055-01

Prepared: 04/15/24 Analyzed: 04/17/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHD0464-MS1)

Source: 2404055-01

Prepared: 04/15/24 Analyzed: 04/17/24

Chromium, Hexavalent 27.4 0.30 mg/kg dry 28.2 ND 97.4 75-125

Matrix Spike Dup (BHD0464-MSD1)

Source: 2404055-01

Prepared: 04/15/24 Analyzed: 04/17/24

Chromium, Hexavalent 27.4 0.30 mg/kg dry 28.2 ND 97.4 75-125 0.00 20

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0701 - General Preparation

Blank (BHD0701-BLK1)

Prepared: 04/20/24 Analyzed: 04/30/24

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

LCS (BHD0701-BS1)

Prepared: 04/20/24 Analyzed: 04/30/24

Calcium	5.82	0.0500	mg/L wet	5.00		116	70-130			
Magnesium	5.11	0.0500	"	5.00		102	70-130			
Sodium	5.11	0.0500	"	5.00		102	70-130			

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
 Project Manager: Jacob Whritenour

Reported:
 05/15/24 10:26

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 BHD0362 - General Preparation

Duplicate (BHD0362-DUP1)

Source: 2404058-01

Prepared: 04/11/24 Analyzed: 04/12/24

% Solids	96.4		%		96.3			0.0766		20	
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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0703 - General Preparation

Blank (BHD0703-BLK1)

Prepared: 04/20/24 Analyzed: 04/22/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHD0703-BS1)

Prepared: 04/20/24 Analyzed: 04/22/24

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BHD0703-DUP1)

Source: 2404038-01

Prepared: 04/20/24 Analyzed: 04/22/24

Specific Conductance (EC) 2.24 0.0100 mmhos/cm 2.29 2.03 20

Summit Scientific

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Project: Noble - Hullabaloo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

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 BHD0702 - General Preparation

LCS (BHD0702-BS1)

Prepared: 04/20/24 Analyzed: 04/22/24

pH	9.22	pH Units	9.18	100	95-105
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Duplicate (BHD0702-DUP1)

Source: 2402519-02

Prepared: 04/20/24 Analyzed: 04/22/24

pH	5.68	pH Units	5.75	1.22	20
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Project: Noble - Hullaballoo State Y 21 Econode

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/15/24 10:26

Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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