

**THIRD QUARTER 2023 SITE MONITORING DATA**  
**HIGHLAND 12-20 (FAC)**

ECMC SPILL TRACKING # 483859  
ECMC REMEDIATION # 24052

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - HIGHLAND 12-20 FACILITY**



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft. BGS) <sup>(1)</sup>	Depth to LNAPL (ft.) <sup>(1)</sup>	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	05/24/23	4722.73	18.47	6.68	ND	ND	4716.23
BH01	08/10/23	4722.73	17.09	7.17	ND	ND	4715.74
BH02	05/24/23	4725.33	20.05	7.02	ND	ND	4715.95
BH02	08/10/23	4725.33	19.80	7.35	ND	ND	4715.62
BH03	05/24/23	4721.39	17.07	5.20	ND	ND	4716.33
BH03	08/10/23	4721.39	17.67	5.92	ND	ND	4715.61
BH04	05/24/23	4722.87	17.99	6.60	ND	ND	4716.43
BH04	08/10/23	4722.87	17.79	7.26	ND	ND	4715.77
BH05	05/24/23	4723.50	17.50	7.44	ND	ND	4716.24
BH05	08/10/23	4723.50	17.48	7.89	ND	ND	4715.79
BH06	05/24/23	4723.57	17.64	7.18	ND	ND	4716.59
BH06	08/10/23	4723.57	17.64	7.92	ND	ND	4715.85

**Notes:**

<sup>(1)</sup> Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

\* Groundwater elevation is corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be 0.75

**Definitions:**

ft. = Feet  
 AMSL = Above mean sea level  
 BTOC = Below top of casing  
 BGS = Below ground surface  
 LNAPL = Light non-aqueous phase liquid  
 ND = No LNAPL detected

TABLE 2  
GROUNDWATER ANALYTICAL DATA  
NOBLE ENERGY, INC. - HIGHLAND 12-20 FACILITY



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Benz(a) (µg/L)	1-M (µg/L)	2-M (µg/L)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
ECMC Standard <sup>(1)</sup>		5	560	700	1,400	140	67	67	0.16 <sup>(2)</sup>	1.1 <sup>(3)</sup>	3.6 <sup>(3)</sup>	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
BH01	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,120	452	1,870
BH01	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	1.83	0.574	3,060	570	2,040
BH02	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,490	493	2,160
BH02	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	2,980	521	2,310
BH03	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,080	419	1,970
BH03	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	2,220	296	1,450
BH04 <sup>(4)</sup>	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,620	580	2,260
BH04 <sup>(4)</sup>	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	2,500	203	2,250
BH05	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,190	449	2,000
BH05	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	2,770	474	2,000
BH06 <sup>(4)</sup>	05/24/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	2,590	259	1,220
BH06 <sup>(4)</sup>	08/10/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.100	<0.500	<0.500	3,410	702	2,480

**Notes:**

<sup>(1)</sup> Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).

<sup>(2)</sup> Groundwater standards referenced from 5 CCR 1002-41, Table A (June 30, 2020).

<sup>(3)</sup> Groundwater standards referenced from USEPA Regional Screening Level (RSL) Resident Tapwater Table (TR=1E-06, HQ=0.1) November 2022.

<sup>(4)</sup> Monitoring well used for inorganic background levels.

**Definitions:**

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

ECMC = Colorado Energy and Carbon Management Commission

mg/L = Milligrams per liter

µg/L = Micrograms per liter

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

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

Benz(a) = Benzantracene

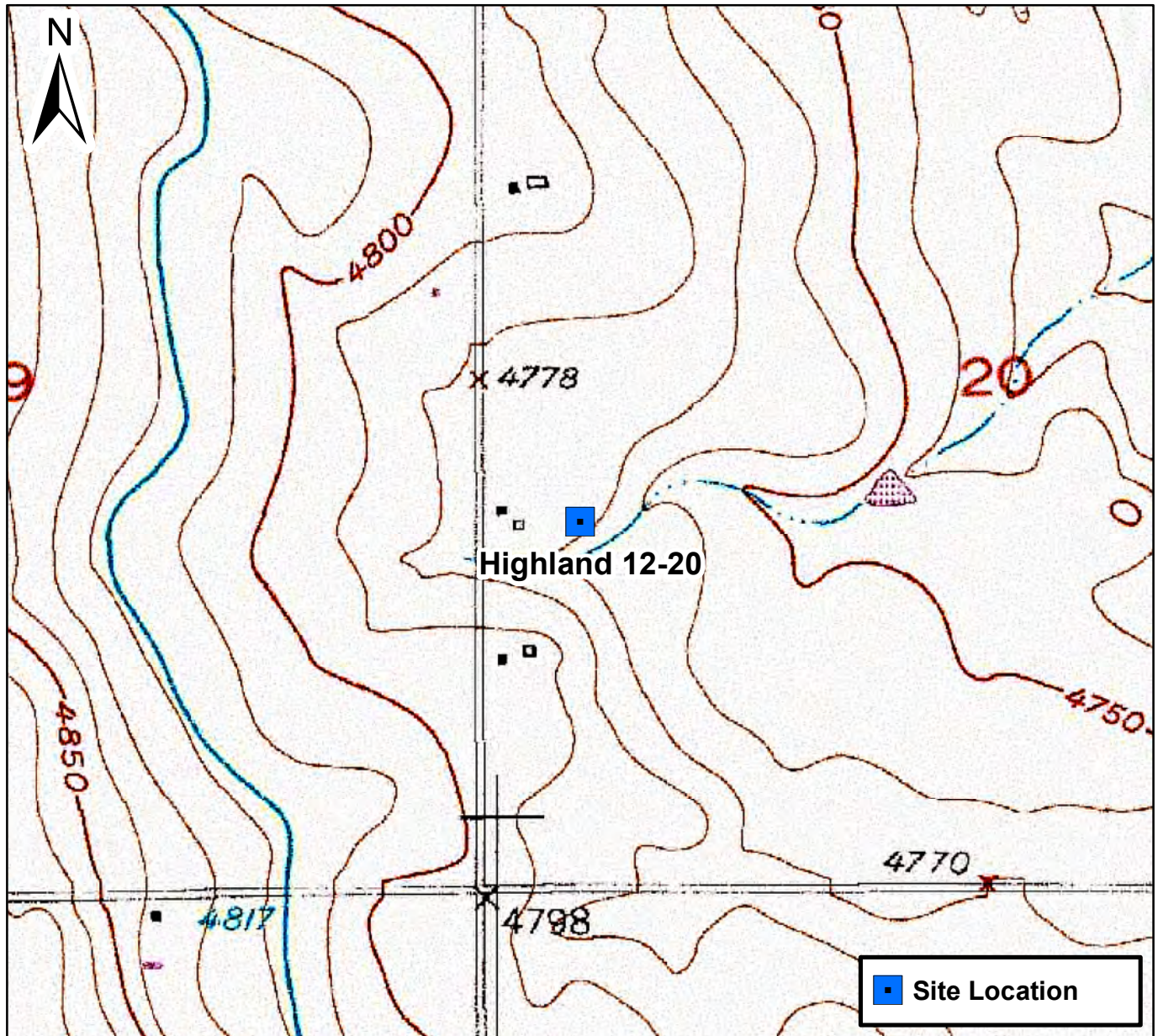
1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

TDS = Total Dissolved Solids

**Highlighted results are equal to or exceed the regulatory standard**

The site-specific background assessment is on-going for groundwater inorganic constituents.



0 1,000 2,000 Feet

## Figure 1

Site Location Map  
Highland 12-20  
NWSW S20 T4N R64W  
Weld County, Colorado







DATE:	07/25/2023
DESIGNED BY:	JW
DRAWN BY:	HM



**TASMAN**  
Tasman, Inc.  
6855 W 119<sup>th</sup> Avenue  
Broomfield, CO 80020


**Noble Energy, Inc. – DJ Basin**  
**Highland 12-20 Facility**  
NWSW, Section 20, Township 4 North, Range 64 West  
Weld County, Colorado

Site Overview Map

FIGURE  
2






DATE: 06/08/2023	 <b>TASMAN</b> Tasman Geosciences, Inc. 6855 W 119 <sup>th</sup> Ave. Broomfield, CO 80020	<b>Noble Energy, Inc. – DJ Basin</b> <b>Highland 12-20 FAC</b> NWSW, Section 20, Township 4 North, Range 64 West Weld County, Colorado	Site Assessment Groundwater Potentiometric Surface Contour Map (05/24/2023)	FIGURE 3
DESIGNED BY: JW				
DRAWN BY: JC				





DATE: 08/18/2023	 <b>TASMAN</b> Tasman, Inc. 6855 W 119 <sup>th</sup> Ave. Broomfield, CO 80020	<b>Noble Energy, Inc. – DJ Basin Highland 12-20 FAC</b> NWSW, Section 20, Township 4 North, Range 64 West Weld County, Colorado	Groundwater Potentiometric Surface Contour Map (08/10/2023)	FIGURE 4
DESIGNED BY: JW				
DRAWN BY: MK				







BH02	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	<0.500
2-M (ug/L)	<0.500
TDS (mg/L)	2,980
Chloride (mg/L)	521
Sulfate (mg/L)	2,310

BH01	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	1.83
2-M (ug/L)	0.574
TDS (mg/L)	3,060
Chloride (mg/L)	570
Sulfate (mg/L)	2,040


BH05	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	<0.500
2-M (ug/L)	<0.500
TDS (mg/L)	2,770
Chloride (mg/L)	474
Sulfate (mg/L)	2,000

BH06	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	<0.500
2-M (ug/L)	<0.500
TDS (mg/L)	3,410
Chloride (mg/L)	702
Sulfate (mg/L)	2,480

BH04	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	<0.500
2-M (ug/L)	<0.500
TDS (mg/L)	2,500
Chloride (mg/L)	203
Sulfate (mg/L)	2,250

BH03	
Compound	08/10/23
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-TMB (ug/L)	<1.0
1,3,5-TMB (ug/L)	<1.0
Benz(a) (ug/L)	<0.100
1-M (ug/L)	<0.500
2-M (ug/L)	<0.500
TDS (mg/L)	2,220
Chloride (mg/L)	296
Sulfate (mg/L)	1,450

Legend

 Monitoring Well Location  
(Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.  
2) Site Infrastructure has been removed; shown for illustrative purposes only.  
3) **RED** value indicates organics concentration > regulatory groundwater standard  
4) Groundwater standards referenced from 5 CCR 1002-41, Table A (June 30,2020)  
5) Groundwater standards referenced from USEPA Regional Screening Levels (RSL) Residential Tapwater Table (TR=1E-06, HQ=0.1) November 2022.

GPS – Global Positioning System  
mg/L – Milligrams per liter  
µg/L – Micrograms per liter  
ECMC – Colorado Energy and Carbon Management Commission

Contaminant of Concern	ECMC Concentration Standard
B - Benzene	5 ug/L
T - Toluene	560 ug/L
E - Ethylbenzene	700 ug/L
X – Total Xylenes	1,400 ug/L
N – Naphthalene	140 ug/L
1,2,4-TMB – 1, 2, 4-Trimethylbenzene	67 ug/L
1,3,5-TMB – 1, 3, 5-Trimethylbenzene	67 ug/L
Benz(a) – Benzo(a)anthracene	0.16 ug/L <sup>(4)</sup>
1-M – 1-Methylnaphthalene	1.1 ug/L <sup>(5)</sup>
2-M – 2-Methylnaphthalene	3.6 ug/L <sup>(5)</sup>
TDS – Total Dissolved Solids	1.25 x background
Cl – Chloride Ion	250 mg/L or 1.25 x background
SO <sub>4</sub> – Sulfate Ion	250 mg/L or 1.25 x background

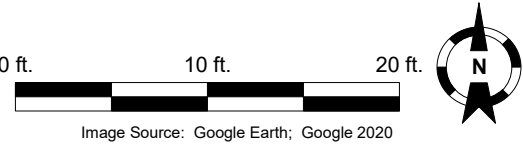


Image Source: Google Earth; Google 2020

DATE: 09/22/2023

DESIGNED BY: JW

DRAWN BY: HM



**TASMAN**

Tasman, Inc.  
6855 W 119<sup>th</sup> Avenue  
Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin  
Highland 12-20 Facility**  
NWSW, Section 20, Township 4 North, Range 64 West  
Weld County, Colorado

Groundwater Analytical  
Results Map  
(08/10/2023)

FIGURE  
6



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 05, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Highland 12-20

Work Order #2305577

Enclosed are the results of analyses for samples received by Summit Scientific on 05/24/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury  
President





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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2305577-01	Water	05/24/23 10:46	05/24/23 16:30
BH02	2305577-02	Water	05/24/23 10:11	05/24/23 16:30
BH03	2305577-03	Water	05/24/23 10:18	05/24/23 16:30
BH04	2305577-04	Water	05/24/23 10:24	05/24/23 16:30
BH05	2305577-05	Water	05/24/23 10:33	05/24/23 16:30
BH06	2305577-06	Water	05/24/23 10:38	05/24/23 16:30

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



# SUMMIT SCIENTIFIC





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

Lab ID	Page 1 of 1
2305579	

Client: Noble / Tasman Inc.		Send Data To: Project Manager: Jake Whritenour		Send Invoice To: Company: Noble Energy, Inc.	
Address: 6855 W. 119th. Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Highland 12-20	
City/State/Zip: Broomfield / CO / 80020		Project Name: Highland 12-20		AFE#:	
Phone: 303-487-1228		Project Number: N/A		PO/Billing Codes:	
Sampler Name: Dalton Hagen				Contact: Dan Peterson	

					Preservative				Matrix			Analysis Requested								Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate	PAH		
1	BHD1	5/24/23	1046	5	3		2		X				X	X	X	X	X	X	X	X		PAH list: 1-MN, 2-MN, Benzanthracene
2	BHD2		1011																			
3	BHD3		1018																			
4	BHD4		1024																			
5	BHD5		1033																			
6	BHD6		1038																			
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

PAH list:  
1-MN, 2-MN,  
Benzoanthracene

Relinquished by:  1430	Date/Time: 5/24/23	Received by: Summit North Office	Date/Time: 5/24/23 1430	TAT Business Days	Field DO	Notes:
Relinquished by:  52	Date/Time: 5/24/23 1630	Received by: 	Date/Time: 5/24/23 1630	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 87	Corrected Temperature: 	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order#

2305572

Client: Noble FushmanClient Project ID: Highland 12-20

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

Airbill #:

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

8.7

Thermometer #

1

	Yes	No	N/A	Comments (If any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$ ? <sup>(1)</sup> 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"/>	an ICE
If custody seals are present, are they intact? <sup>(1)</sup>	<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 ( $\text{Fe}^{2+}$ ), Hexavalent Chromium ( $\text{Cr}^{6+}$ , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, $\text{H}_2\text{SO}_4$ , NaOH, $\text{HNO}_3$ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the $\text{pH} \leq 2$ ? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Date/Time

5-24-23





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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH01**  
**2305577-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	11.6	87.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.7	95.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.7	95.4 %		21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzo (a) anthracene	ND	0.100		ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500		"	"	"	"	"	"	

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	1.47	73.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.49	74.4 %		40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH01**  
**2305577-01 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>452</b>	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
Sulfate	<b>1870</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>3120</b>	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH02**  
**2305577-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	11.7	87.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.8	95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.4	93.2 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.41	70.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.10	54.9 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH02**  
**2305577-02 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>493</b>	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
<b>Sulfate</b>	<b>2160</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3490</b>	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH03**  
**2305577-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	11.4	85.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.3	92.1 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.36	68.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.18	58.9 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH03**  
**2305577-03 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>419</b>	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
Sulfate	<b>1970</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>3080</b>	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH04**  
**2305577-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	11.9	89.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.4	93.4 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.44	72.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.19	59.5 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

06/05/23 15:16

**BH04**

**2305577-04 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>580</b>	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
<b>Sulfate</b>	<b>2260</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3620</b>	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH05**  
**2305577-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	11.8	88.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.4	92.6 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.38	68.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.24	62.2 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH05**  
**2305577-05 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>449</b>	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
<b>Sulfate</b>	<b>2000</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3190</b>	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH06**  
**2305577-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0974	05/26/23	05/27/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	11.7	88.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.5	93.9 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGE0944	05/26/23	05/27/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.37	68.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.19	59.6 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

**BH06**  
**2305577-06 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	259	12.0		mg/L	200	BGE0897	05/24/23	05/25/23	EPA 300.0	
Sulfate	1220	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/24/23 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2590	10.0		mg/L	1	BGE1019	05/30/23	05/30/23	SM2540C	

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGE0974 - EPA 5030 Water MS

##### Blank (BGE0974-BLK1)

Prepared: 05/26/23 Analyzed: 05/27/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		108	23-173			
Surrogate: Toluene-d8	14.5		"	13.3		109	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

##### LCS (BGE0974-BS1)

Prepared: 05/26/23 Analyzed: 05/27/23

Benzene	33.8	1.0	ug/l	33.3		101	51-132			
Toluene	34.8	1.0	"	33.3		104	51-138			
Ethylbenzene	45.9	1.0	"	33.3		138	58-146			
m,p-Xylene	91.0	2.0	"	66.7		136	57-144			
o-Xylene	39.6	1.0	"	33.3		119	53-146			
Naphthalene	24.8	1.0	"	33.3		74.6	70-130			
1,2,4-Trimethylbenzene	35.3	1.0	"	33.3		106	70-130			
1,3,5-Trimethylbenzene	32.7	1.0	"	33.3		98.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.3	20-170			
Surrogate: 4-Bromofluorobenzene	4.69		"	13.3		35.2	21-167			

##### Matrix Spike (BGE0974-MS1)

Source: 2305549-01

Prepared: 05/26/23 Analyzed: 05/27/23

Benzene	30.5	1.0	ug/l	33.3	ND	91.6	34-141			
Toluene	32.3	1.0	"	33.3	ND	96.8	27-151			
Ethylbenzene	34.9	1.0	"	33.3	ND	105	29-160			
m,p-Xylene	69.9	2.0	"	66.7	ND	105	20-166			
o-Xylene	33.6	1.0	"	33.3	ND	101	33-159			
Naphthalene	37.9	1.0	"	33.3	ND	114	70-130			
1,2,4-Trimethylbenzene	38.8	1.0	"	33.3	ND	116	70-130			
1,3,5-Trimethylbenzene	33.3	1.0	"	33.3	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.4	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.4	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

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

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

**Batch BGE0974 - EPA 5030 Water MS**

Matrix Spike Dup (BGE0974-MSD1)	Source: 2305549-01			Prepared: 05/26/23 Analyzed: 05/27/23						
Benzene	31.2	1.0	ug/l	33.3	ND	93.6	34-141	2.17	30	
Toluene	32.5	1.0	"	33.3	ND	97.6	27-151	0.771	30	
Ethylbenzene	35.2	1.0	"	33.3	ND	106	29-160	0.969	30	
m,p-Xylene	71.0	2.0	"	66.7	ND	107	20-166	1.56	30	
o-Xylene	33.6	1.0	"	33.3	ND	101	33-159	0.0298	30	
Naphthalene	30.2	1.0	"	33.3	ND	90.6	70-130	22.7	30	
1,2,4-Trimethylbenzene	38.8	1.0	"	33.3	ND	116	70-130	0.00	30	
1,3,5-Trimethylbenzene	33.6	1.0	"	33.3	ND	101	70-130	0.837	30	
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.3		94.6	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	21-167			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGE0944 - EPA 5030 Water MS

##### Blank (BGE0944-BLK1)

Prepared & Analyzed: 05/26/23

Acenaphthene	ND	0.500	ug/l								
Acenaphthylene	ND	0.200	"								
Anthracene	ND	0.200	"								
Benzo (a) anthracene	ND	0.100	"								
Benzo (b) fluoranthene	ND	0.200	"								
Benzo (k) fluoranthene	ND	0.200	"								
Benzo (g,h,i) perylene	ND	0.200	"								
Benzo (a) pyrene	ND	0.200	"								
Chrysene	ND	0.200	"								
Dibenz (a,h) anthracene	ND	0.200	"								
Fluoranthene	ND	2.00	"								
Fluorene	ND	0.200	"								
Indeno (1,2,3-cd) pyrene	ND	0.300	"								
Phenanthrene	ND	0.500	"								
Pyrene	ND	1.00	"								
1-Methylnaphthalene	ND	0.500	"								
2-Methylnaphthalene	ND	0.500	"								
Surrogate: 2-Methylnaphthalene-d10	1.48		"	2.00		73.8		40-150			
Surrogate: Fluoranthene-d10	1.49		"	2.00		74.5		40-150			

##### LCS (BGE0944-BS1)

Prepared & Analyzed: 05/26/23

Acenaphthene	1.90	0.500	ug/l	2.00		94.9		30-120			
Acenaphthylene	2.07	0.200	"	2.00		104		30-120			
Anthracene	1.61	0.200	"	2.00		80.7		30-120			
Benzo (a) anthracene	1.48	0.100	"	2.00		73.8		30-120			
Benzo (b) fluoranthene	1.48	0.200	"	2.00		74.0		30-120			
Benzo (k) fluoranthene	1.71	0.200	"	2.00		85.6		30-120			
Benzo (g,h,i) perylene	1.56	0.200	"	2.00		78.0		30-120			
Benzo (a) pyrene	1.54	0.200	"	2.00		77.2		30-120			
Chrysene	1.73	0.200	"	2.00		86.3		30-120			
Dibenz (a,h) anthracene	1.52	0.200	"	2.00		76.0		30-120			
Fluoranthene	1.73	2.00	"	2.00		86.3		30-120			
Fluorene	1.66	0.200	"	2.00		82.9		30-120			
Indeno (1,2,3-cd) pyrene	2.00	0.300	"	2.00		99.8		30-120			
Phenanthrene	1.62	0.500	"	2.00		81.0		30-120			
Pyrene	1.74	1.00	"	2.00		86.8		30-120			
1-Methylnaphthalene	1.67	0.500	"	2.00		83.4		30-120			
2-Methylnaphthalene	1.61	0.500	"	2.00		80.5		0-200			

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 - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

### PAH by EPA Method 8270D SIM - Quality Control

#### Summit Scientific

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

#### Batch BGE0944 - EPA 5030 Water MS

##### LCS (BGE0944-BS1)

Prepared & Analyzed: 05/26/23

Surrogate: 2-Methylnaphthalene-d10	1.68	ug/l	2.00	84.2	40-150
Surrogate: Fluoranthene-d10	1.66	"	2.00	82.8	40-150

##### LCS Dup (BGE0944-BSD1)

Prepared & Analyzed: 05/26/23

Acenaphthene	1.77	0.500	ug/l	2.00	88.3	30-120	7.22	30
Acenaphthylene	2.17	0.200	"	2.00	109	30-120	4.62	30
Anthracene	1.62	0.200	"	2.00	80.9	30-120	0.178	30
Benzo (a) anthracene	1.49	0.100	"	2.00	74.4	30-120	0.752	30
Benzo (b) fluoranthene	1.47	0.200	"	2.00	73.7	30-120	0.371	30
Benzo (k) fluoranthene	1.69	0.200	"	2.00	84.4	30-120	1.34	30
Benzo (g,h,i) perylene	1.66	0.200	"	2.00	83.1	30-120	6.41	30
Benzo (a) pyrene	1.56	0.200	"	2.00	78.1	30-120	1.15	30
Chrysene	1.74	0.200	"	2.00	86.8	30-120	0.568	30
Dibenz (a,h) anthracene	1.59	0.200	"	2.00	79.7	30-120	4.67	30
Fluoranthene	1.68	2.00	"	2.00	84.2	30-120	2.52	30
Fluorene	1.76	0.200	"	2.00	87.8	30-120	5.71	30
Indeno (1,2,3-cd) pyrene	2.00	0.300	"	2.00	99.8	30-120	0.0481	30
Phenanthrene	1.61	0.500	"	2.00	80.5	30-120	0.644	30
Pyrene	1.82	1.00	"	2.00	90.8	30-120	4.48	30
1-Methylnaphthalene	1.66	0.500	"	2.00	83.2	30-120	0.282	30
2-Methylnaphthalene	1.55	0.500	"	2.00	77.4	0-200	3.98	200
Surrogate: 2-Methylnaphthalene-d10	1.72		"	2.00	86.0	40-150		
Surrogate: Fluoranthene-d10	1.66		"	2.00	82.9	40-150		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

### Anions by EPA Method 300.0 - Quality Control

#### Summit Scientific

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

#### Batch BGE0897 - General Preparation

##### Blank (BGE0897-BLK1)

Prepared: 05/24/23 Analyzed: 05/25/23

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

##### LCS (BGE0897-BS1)

Prepared: 05/24/23 Analyzed: 05/25/23

Chloride	2.82	0.0600	mg/L	3.00	94.0	90-110
Sulfate	14.2	0.300	"	15.0	94.8	90-110

##### Duplicate (BGE0897-DUP1)

Source: 2305532-01

Prepared: 05/24/23 Analyzed: 05/25/23

Chloride	8.80	12.0	mg/L	8.40	4.65	20
Sulfate	91.4	60.0	"	94.6	3.44	20

##### Matrix Spike (BGE0897-MS1)

Source: 2305532-01

Prepared: 05/24/23 Analyzed: 05/25/23

Chloride	691	12.0	mg/L	600	8.40	114	80-120
Sulfate	3540	60.0	"	3000	94.6	115	80-120

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 - Highland 12-20

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

06/05/23 15:16

### Total Dissolved Solids by SM2540C - Quality Control

#### Summit Scientific

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

#### Batch BGE1019 - General Preparation

##### Blank (BGE1019-BLK1)

Prepared & Analyzed: 05/30/23

Total Dissolved Solids ND 10.0 mg/L

##### Duplicate (BGE1019-DUP1)

Source: 2305575-01

Prepared & Analyzed: 05/30/23

Total Dissolved Solids 1340 10.0 mg/L 1290 4.04 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





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

Project: Noble - Highland 12-20

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/05/23 15:16

### Notes and Definitions

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



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 31, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Highland 12-20 Wellhead

Work Order #2308246

Enclosed are the results of analyses for samples received by Summit Scientific on 08/10/23 17:34. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2308246-01	Water	08/10/23 12:48	08/10/23 17:34
BH02	2308246-02	Water	08/10/23 12:22	08/10/23 17:34
BH03	2308246-03	Water	08/10/23 12:22	08/10/23 17:34
BH04	2308246-04	Water	08/10/23 12:33	08/10/23 17:34
BH05	2308246-05	Water	08/10/23 12:34	08/10/23 17:34
BH06	2308246-06	Water	08/10/23 12:46	08/10/23 17:34

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2308246	

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020		AFE#:	
Phone: 602-881-5716	Project Name: Highland 12-20 wellhead	PO/Billing Codes:	
Sampler Name: Aiden Franklin	Project Number:	Contact:	

					Preservative				Matrix			Analysis Requested								Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX	Napthalene	1,2,4 TMB	1,3,5 TMB	TDS	Chloride	Sulfate	Mn-1, Mn-2	SAR, EC, pH by saturated paste	
1	BH01	8/10/23	12:48	5	3		2		X				X	X	X	X	X	X	X	X		
2	BH02	↓	12:22	↓	↓		↓		↓				↓	↓	↓	↓	↓	↓	↓	↓		
3	BH03	↓	12:22	↓	↓		↓		↓				↓	↓	↓	↓	↓	↓	↓	↓		
4	BH04	↓	12:33	↓	↓		↓		↓				↓	↓	↓	↓	↓	↓	↓	↓		
5	BH05	↓	12:34	↓	↓		↓		↓				↓	↓	↓	↓	↓	↓	↓	↓		
6	BH06	↓	12:46																			
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: Aiden Franklin	Date/Time: 8/10/23 14:30	Received by: Tasman Lock Box	Date/Time:	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 8/10/23 1734	Received by: [Signature]	Date/Time: 8/10/23 1734	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 10.1	Corrected Temperature: 6	IR gun #:		HNO3 lot #:		



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2308246Client: Noble GasmanClient Project ID: Highland 12-20 wellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: \_\_\_\_\_

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

10.1

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Josh  
Custodian Printed Name

08/10/23  
Date/Time

111



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH01**  
**2308246-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	20.0	150 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.9	104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.4	108 %		21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzo (a) anthracene	ND	0.100		ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	1.83	0.500		"	"	"	"	"	"	
2-Methylnaphthalene	0.574	0.500		"	"	"	"	"	"	

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	1.93	96.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.43	71.7 %		40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH01**  
**2308246-01 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>570</b>	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
<b>Sulfate</b>	<b>2040</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3060</b>	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH02**  
**2308246-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	16.4	123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	15.2	114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.02	101 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.16	57.8 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH02**  
**2308246-02 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	521	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
Sulfate	2310	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2980	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH03**  
**2308246-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	19.5	147 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	17.6	132 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	100 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.22	111 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.46	72.9 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH03**  
**2308246-03 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>296</b>	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
Sulfate	<b>1450</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2220</b>	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH04**  
**2308246-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	18.3	137 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.4	108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.2	106 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.99	99.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.31	65.6 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH04**

**2308246-04 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	203	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
Sulfate	2250	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2500	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH05**  
**2308246-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	17.4	131 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	14.9	112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.25	62.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.79	89.7 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH05**  
**2308246-05 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>474</b>	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
Sulfate	<b>2000</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>2770</b>	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH06**  
**2308246-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGH0475	08/11/23	08/12/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	19.4	145 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	17.0	128 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %	21-167		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzo (a) anthracene	ND	0.100	ug/l	1	BGH0521	08/14/23	08/15/23	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.20	110 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	1.20	60.0 %	40-150		"	"	"	"	

**Anions by EPA Method 300.0**

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**BH06**  
**2308246-06 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>702</b>	12.0		mg/L	200	BGH0481	08/11/23	08/12/23	EPA 300.0	
<b>Sulfate</b>	<b>2480</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **08/10/23 12:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3410</b>	10.0		mg/L	1	BGH0485	08/11/23	08/11/23	SM2540C	

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 - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGH0475 - EPA 5030 Water MS

##### Blank (BGH0475-BLK1)

Prepared: 08/11/23 Analyzed: 08/12/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	17.6		"	13.3		132	23-173			
Surrogate: Toluene-d8	17.8		"	13.3		133	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

##### LCS (BGH0475-BS1)

Prepared: 08/11/23 Analyzed: 08/12/23

Benzene	37.3	1.0	ug/l	50.0		74.7	51-132			
Toluene	35.1	1.0	"	50.0		70.2	51-138			
Ethylbenzene	46.6	1.0	"	50.0		93.2	58-146			
m,p-Xylene	112	2.0	"	100		112	57-144			
o-Xylene	68.0	1.0	"	50.0		136	53-146			
Naphthalene	46.4	1.0	"	50.0		92.8	70-130			
1,2,4-Trimethylbenzene	57.6	1.0	"	50.0		115	70-130			
1,3,5-Trimethylbenzene	57.5	1.0	"	50.0		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.4	23-173			
Surrogate: Toluene-d8	8.42		"	13.3		63.2	20-170			
Surrogate: 4-Bromofluorobenzene	15.4		"	13.3		115	21-167			

##### Matrix Spike (BGH0475-MS1)

Source: 2308193-01

Prepared: 08/11/23 Analyzed: 08/12/23

Benzene	51.7	1.0	ug/l	50.0	ND	103	34-141			
Toluene	49.2	1.0	"	50.0	ND	98.3	27-151			
Ethylbenzene	40.1	1.0	"	50.0	ND	80.2	29-160			
m,p-Xylene	84.1	2.0	"	100	ND	84.1	20-166			
o-Xylene	56.9	1.0	"	50.0	ND	114	33-159			
Naphthalene	50.8	1.0	"	50.0	9.01	83.6	70-130			
1,2,4-Trimethylbenzene	58.2	1.0	"	50.0	ND	116	70-130			
1,3,5-Trimethylbenzene	59.5	1.0	"	50.0	ND	119	70-130			
Surrogate: 1,2-Dichloroethane-d4	18.6		"	13.3		139	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGH0475 - EPA 5030 Water MS

Matrix Spike Dup (BGH0475-MSD1)	Source: 2308193-01			Prepared: 08/11/23 Analyzed: 08/12/23						
Benzene	39.6	1.0	ug/l	50.0	ND	79.1	34-141	26.6	30	
Toluene	40.2	1.0	"	50.0	ND	80.5	27-151	20.0	30	
Ethylbenzene	36.7	1.0	"	50.0	ND	73.4	29-160	8.85	30	
m,p-Xylene	81.0	2.0	"	100	ND	81.0	20-166	3.73	30	
o-Xylene	51.7	1.0	"	50.0	ND	103	33-159	9.61	30	
Naphthalene	48.9	1.0	"	50.0	9.01	79.7	70-130	3.91	30	
1,2,4-Trimethylbenzene	42.6	1.0	"	50.0	ND	85.2	70-130	30.9	30	QM-07
1,3,5-Trimethylbenzene	43.8	1.0	"	50.0	ND	87.6	70-130	30.4	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	19.9		"	13.3		149	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	16.2		"	13.3		122	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

### PAH by EPA Method 8270D SIM - Quality Control

#### Summit Scientific

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

#### Batch BGH0521 - EPA 5030 Water MS

##### Blank (BGH0521-BLK1)

Prepared: 08/14/23 Analyzed: 08/15/23

Benzo (a) anthracene	ND	0.100	ug/l							
1-Methylnaphthalene	ND	0.500	"							
2-Methylnaphthalene	ND	0.500	"							
Surrogate: 2-Methylnaphthalene-d10	1.26		"	2.00		62.8	40-150			
Surrogate: Fluoranthene-d10	1.88		"	2.00		93.9	40-150			

##### LCS (BGH0521-BS1)

Prepared: 08/14/23 Analyzed: 08/15/23

Benzo (a) anthracene	2.21	0.100	ug/l	2.00		110	30-120			
1-Methylnaphthalene	2.04	0.500	"	2.00		102	30-120			
2-Methylnaphthalene	2.32	0.500	"	2.00		116	0-200			
Surrogate: 2-Methylnaphthalene-d10	2.45		"	2.00		123	40-150			
Surrogate: Fluoranthene-d10	2.16		"	2.00		108	40-150			

##### LCS Dup (BGH0521-BSD1)

Prepared: 08/14/23 Analyzed: 08/15/23

Benzo (a) anthracene	1.93	0.100	ug/l	2.00		96.3	30-120	13.6	30	
1-Methylnaphthalene	2.37	0.500	"	2.00		119	30-120	15.1	30	
2-Methylnaphthalene	2.45	0.500	"	2.00		122	0-200	5.30	200	
Surrogate: 2-Methylnaphthalene-d10	2.27		"	2.00		114	40-150			
Surrogate: Fluoranthene-d10	2.28		"	2.00		114	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

### Anions by EPA Method 300.0 - Quality Control

#### Summit Scientific

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

#### Batch BGH0481 - General Preparation

##### Blank (BGH0481-BLK1)

Prepared & Analyzed: 08/11/23

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

##### LCS (BGH0481-BS1)

Prepared & Analyzed: 08/11/23

Chloride	3.04	0.0600	mg/L	3.00	101	90-110
Sulfate	13.7	0.300	"	15.0	91.3	90-110

##### Duplicate (BGH0481-DUP1)

Source: 2308242-21

Prepared & Analyzed: 08/11/23

Chloride	23.4	12.0	mg/L	16.2	36.4	20	QR-01
Sulfate	89.2	60.0	"	80.6	10.1	20	

##### Matrix Spike (BGH0481-MS1)

Source: 2308242-21

Prepared & Analyzed: 08/11/23

Chloride	596	12.0	mg/L	600	16.2	96.7	80-120
Sulfate	2700	60.0	"	3000	80.6	87.2	80-120

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 - Highland 12-20 Wellhead

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

**Total Dissolved Solids by SM2540C - Quality Control**

**Summit Scientific**

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

**Batch BGH0485 - General Preparation**

**Blank (BGH0485-BLK1)**

Prepared & Analyzed: 08/11/23

Total Dissolved Solids ND 10.0 mg/L

**Duplicate (BGH0485-DUP1)**

Source: 2308223-01

Prepared & Analyzed: 08/11/23

Total Dissolved Solids 446 10.0 mg/L 462 3.59 20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Highland 12-20 Wellhead

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
10/31/23 13:16

### 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.
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