

FOURTH QUARTER 2022 SITE MONITORING DATA

WERNING 7-2 (WH)

COGCC SPILL TRACKING # 479589

COGCC REMEDIATION # 16540



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - Werning 7-2 WH



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01_WH	11/15/21	4665.18	14.72	3.59	ND	ND	4658.31
BH01_WH	03/09/22	4665.18	14.65	4.27	ND	ND	4657.63
BH01_WH	07/29/22	4665.18	14.68	2.73	ND	ND	4659.17
BH01_WH	10/27/22	4665.18	14.65	3.48	ND	ND	4658.42
BH02_WH	11/15/21	4665.20	14.84	3.40	ND	ND	4658.41
BH02_WH	03/09/22	4665.20	14.84	4.17	ND	ND	4657.64
BH02_WH	07/29/22	4665.20	14.84	2.62	ND	ND	4659.19
BH02_WH	10/27/22	4665.20	14.82	3.38	ND	ND	4658.43
BH03_WH	11/15/21	4665.40	14.89	3.66	ND	ND	4658.27
BH03_WH	03/09/22	4665.40	14.93	4.29	ND	ND	4657.64
BH03_WH	07/29/22	4665.40	14.86	2.78	ND	ND	4659.15
BH03_WH	10/27/22	4665.40	14.86	3.51	ND	ND	4658.42
BH04_WH	11/15/21	4665.22	14.83	3.29	ND	ND	4658.44
BH04_WH	03/09/22	4665.22	14.82	4.07	ND	ND	4657.66
BH04_WH	07/29/22	4665.22	14.83	2.56	ND	ND	4659.17
BH04_WH	10/27/22	4665.22	14.89	3.30	ND	ND	4658.43
BH05_WH	11/15/21	4665.23	14.90	3.56	ND	ND	4658.38
BH05_WH	03/09/22	4665.23	14.85	4.29	ND	ND	4657.65
BH05_WH	07/29/22	4665.23	14.81	2.74	ND	ND	4659.20
BH05_WH	10/27/22	4665.23	14.90	3.50	ND	ND	4658.44

Notes:

⁽¹⁾ 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 was corrected for product thickness (when present) using the following calculation:

$$\text{Groundwater elevation} = (\text{TOC Elevation} - \text{Measured Depth to Water}) + (\text{LNAPL Thickness in Well} \times \text{LNAPL Relative Density})$$

LNAPL relative density was estimated to be approximately 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. - Werning 7-2 WH**

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)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Groundwater Standard⁽¹⁾		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
GW01	02/23/21	<1.0	<1.0	2.1	8.2	<1.0	150	51	NA	NA	NA
BH01_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	937	27.6	131
BH01_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	928	108	191
BH01_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,110	117	199
BH01_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	814	105	123
BH02_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	889	51.4	173
BH02_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	855	92.0	99.2
BH02_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,040	124	210
BH02_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	805	122	175
BH03_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	892	166	388
BH03_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	832	97.8	137
BH03_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	990	115	235
BH03_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	800	103	135
BH04_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	841	153	364
BH04_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	844	107	142
BH04_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	913	106	215
BH04_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	791	105	133
⁽²⁾ BH05_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	879	16.4	99.0
⁽²⁾ BH05_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	832	106	136
⁽²⁾ BH05_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	953	106	220
⁽²⁾ BH05_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	796	117	151

Notes:

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

⁽²⁾ Monitoring well used to calculate inorganic background standards.

Definitions:

- < = Analytical result is less than the indicated laboratory reporting limit
- COGCC = Colorado Oil and Gas Conservation Commission
- µg/L = Micrograms per liter
- mg/L = Milligrams per liter
- NA = Not analyzed
- 1,2,4 - TMB = 1,2,4 Trimethylbenzene
- 1,3,5 - TMB = 1,3,5 Trimethylbenzene
- TDS = Total Dissolved Solids

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

Bold results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.

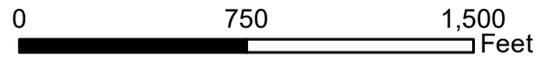
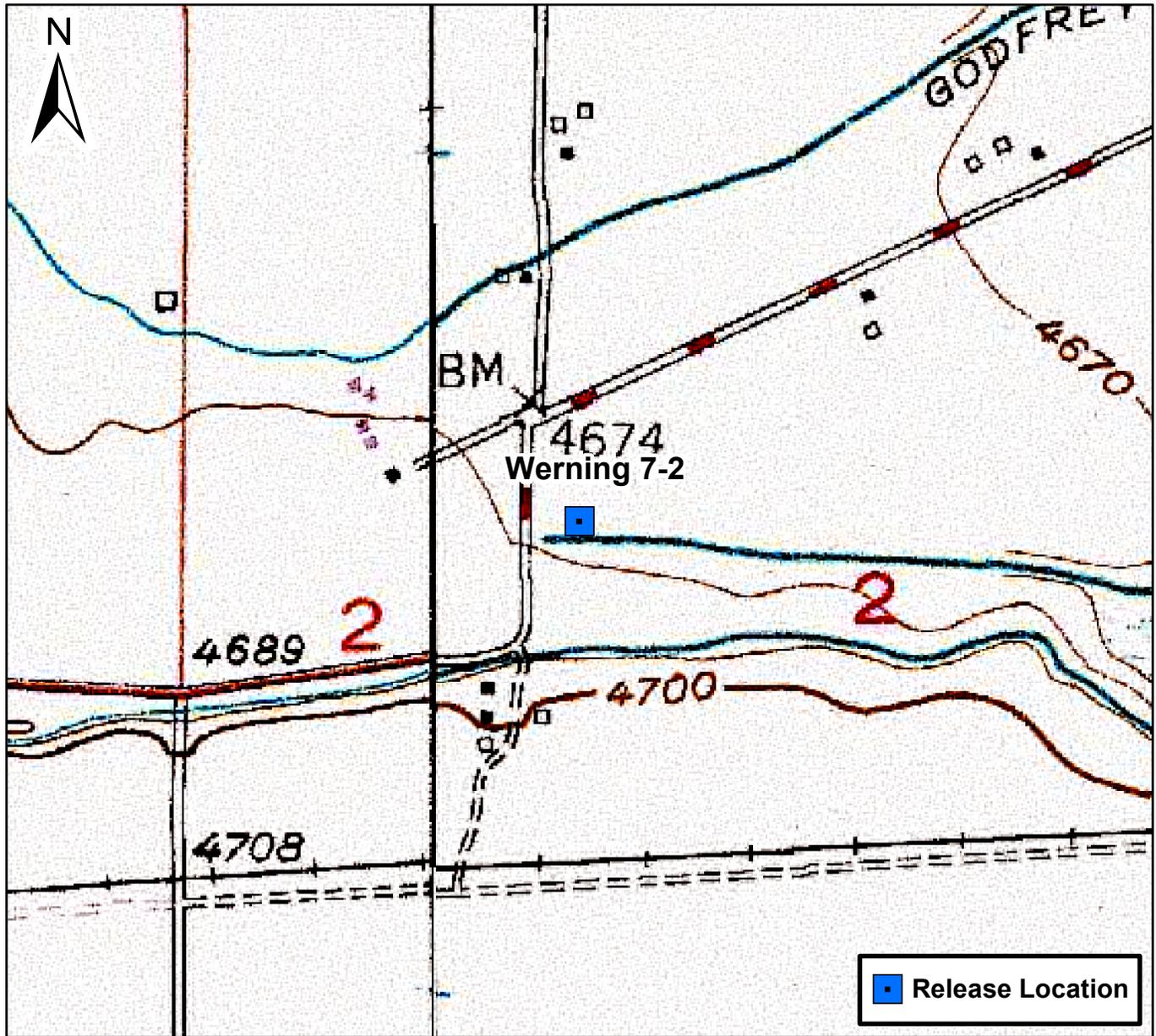


Figure 1

Site Location Map
 Werning 7-2
 SWNE S2 T4N R66W
 Weld County, Colorado





Legend

-  Monitoring Well Location (Collected via Trimble GPS)
-  Excavation Extent

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.

GPS – Global Positioning System

0 ft. 10 ft. 20 ft.

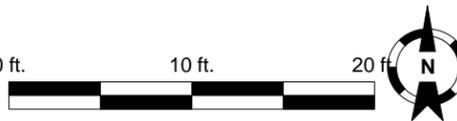


Image Source: Google Earth; Google 2020

DATE:	07/20/2022
DESIGNED BY:	JW
DRAWN BY:	DQ



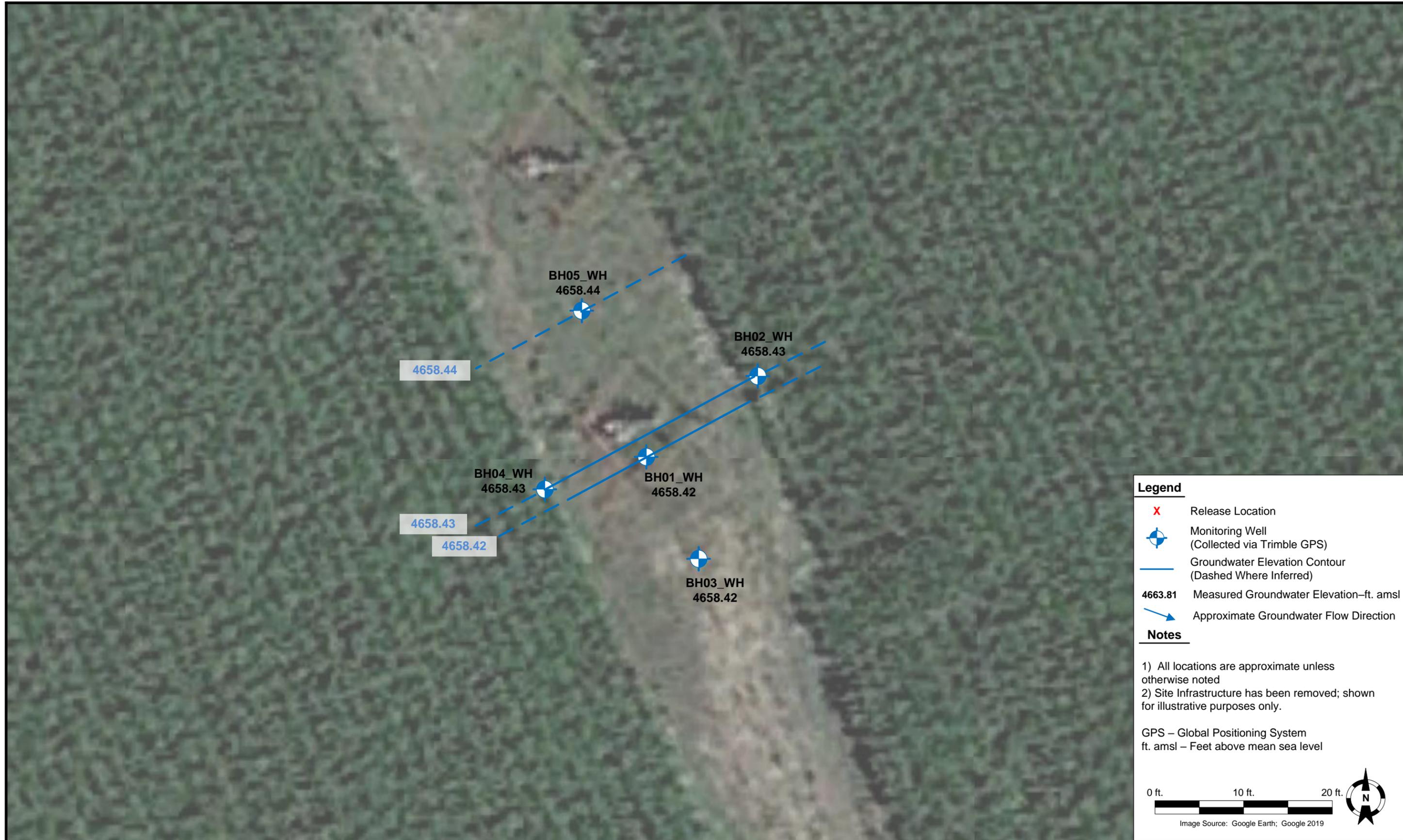
TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Werning 7-2
SWNE, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Site Overview Map

FIGURE
2



DATE: 01/25/2023

DESIGNED BY: JW

DRAWN BY: MK



**Noble Energy, Inc. – DJ Basin
Werning 7-2**
SENW, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Groundwater Potentiometric
Surface Contour Map
(10/27/2022)

FIGURE
3

BH04_WH	
Compound	10/27/22
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-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	791
Chloride (mg/L)	105
Sulfate (mg/L)	133

BH05_WH	
Compound	10/27/22
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-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	796
Chloride (mg/L)	117
Sulfate (mg/L)	151

BH02_WH	
Compound	10/27/22
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-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	805
Chloride (mg/L)	122
Sulfate (mg/L)	175

BH03_WH	
Compound	10/27/22
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-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	800
Chloride (mg/L)	103
Sulfate (mg/L)	135

BH01_WH	
Compound	10/27/22
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-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	814
Chloride (mg/L)	105
Sulfate (mg/L)	123

Legend

- Monitoring Well (Collected via Trimble GPS)
- Excavation Extent
- Groundwater Sample 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 concentration greater than COGCC table 915-1 groundwater standard (see table below)
- 4) **Bold** results exceed the COGCC Table 915-1 groundwater inorganic standard, site-specific background inorganic assessment is on-going.

GPS – Global Positioning System
 COGCC – Colorado Oil and Gas Conservation Commission
 ug/L – Microgram per liter
 mg/L – Milligrams per liter

Contaminant of Concern	COGCC 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
TDS – Total Dissolved Solids	<1.25 x background
Cl – Chloride Ion	<250 mg/L or 1.25 x background
SO ₄ – Sulfate Ion	<250 mg/L or 1.25 x background

0 ft. 10 ft. 20 ft.

Image Source: Google Earth; Google 2020

DATE: 09/16/2022
 DESIGNED BY: JW
 DRAWN BY: RA

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

Noble Energy, Inc. – DJ Basin
Werning 7-2
 SENW, Section 2, Township 4 North, Range 66 West
 Weld County, Colorado

Groundwater Analytical
 Results Map
 (10/27/2022)

Figure
 4

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 03, 2022

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

RE: Noble - Werning 7-2 WH

Work Order #2210531

Enclosed are the results of analyses for samples received by Summit Scientific on 10/27/22 17:10. 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 - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01_WH	2210531-01	Water	10/27/22 13:58	10/27/22 17:10
BH02_WH	2210531-02	Water	10/27/22 13:36	10/27/22 17:10
BH03_WH	2210531-03	Water	10/27/22 13:47	10/27/22 17:10
BH04_WH	2210531-04	Water	10/27/22 13:46	10/27/22 17:10
BH05_WH	2210531-05	Water	10/27/22 13:35	10/27/22 17:10

Summit Scientific

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

Summit Scientific

S₂

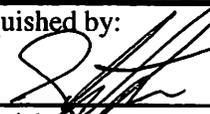
2210531

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Noble / Tasman Geoscience Project Manager: Jake Whritenour
Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
City/State/Zip: Broomfield / CO / 80020
Phone: 303-487-1228 Project Name: Werning 7-2 WH
Sampler Name: Patrick Kline Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride		Sulfate	
1	BH01-WH	10/27/22	1358	4	3				X					X	X	X	X	X	X	X	
2	BH02-WH		1336																		
3	BH03-WH		1347																		
4	BH04-WH		1346																		
5	BH05-WH		1335																		
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 10/27/22 1600	Received by: Tasman's Lock Box	Date/Time: 10/27/22 1600	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>6.3</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 10/27/22 1710	Received by: 	Date/Time: 10/27/22 1710		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S2 Work Order# 2210231

Sample Receipt Checklist

Client: Noble/Tasman Geoscience Client Project ID: Werning 7-2 WHShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____ Matrix (Check all that apply) Air Soil/Solid Water Other Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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.

Custodian Printed Name

Date/Time

10-27-22 1716



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

Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

BH01_WH
2210531-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.9 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	105	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	123	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	814	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	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 - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

BH02_WH
2210531-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		71.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	122	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	175	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	805	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

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

Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

BH03_WH
2210531-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		76.1 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	103	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	135	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	800	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

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

Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

BH04_WH
2210531-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	105	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	133	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	791	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

Summit Scientific

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Tasman Geosciences
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Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

BH05_WH
2210531-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		91.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		61.5 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	117	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	151	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	796	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

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Tasman Geosciences
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Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0821 - EPA 5030 Water MS

Blank (BFJ0821-BLK1)

Prepared: 10/28/22 Analyzed: 10/29/22

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.8		"	13.3		104	23-173			
<i>Surrogate: Toluene-d8</i>	15.7		"	13.3		118	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	10.4		"	13.3		78.0	21-167			

LCS (BFJ0821-BS1)

Prepared: 10/28/22 Analyzed: 10/29/22

Benzene	30.7	1.0	ug/l	41.7		73.6	51-132			
Toluene	39.8	1.0	"	41.7		95.4	51-138			
Ethylbenzene	39.2	1.0	"	41.7		94.2	58-146			
m,p-Xylene	81.7	2.0	"	83.3		98.1	57-144			
o-Xylene	40.6	1.0	"	41.7		97.5	53-146			
Naphthalene	30.9	1.0	"	41.7		74.2	70-130			
1,2,4-Trimethylbenzene	40.8	1.0	"	41.7		98.0	70-130			
1,3,5-Trimethylbenzene	44.0	1.0	"	41.7		106	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.9		"	13.3		96.7	23-173			
<i>Surrogate: Toluene-d8</i>	13.5		"	13.3		101	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.5		"	13.3		86.0	21-167			

Matrix Spike (BFJ0821-MS1)

Source: 2210480-01

Prepared: 10/28/22 Analyzed: 10/29/22

Benzene	28.5	1.0	ug/l	41.7	ND	68.4	34-141			
Toluene	41.0	1.0	"	41.7	ND	98.5	27-151			
Ethylbenzene	39.4	1.0	"	41.7	ND	94.5	29-160			
m,p-Xylene	82.5	2.0	"	83.3	ND	99.0	20-166			
o-Xylene	41.6	1.0	"	41.7	ND	99.7	33-159			
Naphthalene	36.6	1.0	"	41.7	ND	87.8	70-130			
1,2,4-Trimethylbenzene	41.6	1.0	"	41.7	ND	99.7	70-130			
1,3,5-Trimethylbenzene	45.1	1.0	"	41.7	ND	108	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.0		"	13.3		90.1	23-173			
<i>Surrogate: Toluene-d8</i>	13.6		"	13.3		102	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.6		"	13.3		86.9	21-167			

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

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 BFJ0821 - EPA 5030 Water MS

Matrix Spike Dup (BFJ0821-MSD1)	Source: 2210480-01			Prepared: 10/28/22 Analyzed: 10/29/22						
Benzene	31.5	1.0	ug/l	41.7	ND	75.5	34-141	9.83	30	
Toluene	43.2	1.0	"	41.7	ND	104	27-151	5.10	30	
Ethylbenzene	39.5	1.0	"	41.7	ND	94.8	29-160	0.254	30	
m,p-Xylene	83.2	2.0	"	83.3	ND	99.8	20-166	0.869	30	
o-Xylene	41.3	1.0	"	41.7	ND	99.1	33-159	0.579	30	
Naphthalene	40.1	1.0	"	41.7	ND	96.3	70-130	9.20	30	
1,2,4-Trimethylbenzene	41.9	1.0	"	41.7	ND	101	70-130	0.767	30	
1,3,5-Trimethylbenzene	45.0	1.0	"	41.7	ND	108	70-130	0.222	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.3</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.8</i>		<i>"</i>	<i>13.3</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>11.5</i>		<i>"</i>	<i>13.3</i>		<i>86.5</i>	<i>21-167</i>			

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

Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BFJ0805 - General Preparation

Blank (BFJ0805-BLK1)

Prepared: 10/28/22 Analyzed: 11/02/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BFJ0805-BS1)

Prepared: 10/28/22 Analyzed: 11/02/22

Chloride	2.89	0.0600	mg/L	3.00	96.5	90-110		
Sulfate	14.3	0.300	"	15.0	95.6	90-110		

Duplicate (BFJ0805-DUP1)

Source: 2210511-04

Prepared & Analyzed: 10/28/22

Chloride	120	12.0	mg/L		110		8.89	20
Sulfate	895	60.0	"		740		19.0	20

Matrix Spike (BFJ0805-MS1)

Source: 2210511-04

Prepared & Analyzed: 10/28/22

Chloride	712	12.0	mg/L	600	110	100	80-120	
Sulfate	3850	60.0	"	3000	740	104	80-120	

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFJ0804 - General Preparation

Blank (BFJ0804-BLK1)

Prepared & Analyzed: 10/28/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFJ0804-DUP1)

Source: 2210531-01

Prepared & Analyzed: 10/28/22

Total Dissolved Solids 818 10.0 mg/L 814 0.527 20

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

Project: Noble - Werning 7-2 WH

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
11/03/22 10:11

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