

# FIRST QUARTER 2021 SITE MONITORING DATA

## DUNCAN D20-12, 20-13

COGCC SPILL TRACKING # 459804  
COGCC REMEDIATION # 12461

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 West 119th Avenue  
Broomfield, Colorado 80020

## **TABLES**

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13**



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	02/05/20	4772.46	21.47	5.38	ND	ND	4765.11
BH01	05/04/20	4772.46	21.21	3.15	ND	ND	4767.34
BH01	08/05/20	4772.46	21.14	5.84	ND	ND	4764.65
BH01	11/25/20	4772.46	20.85	6.07	ND	ND	4764.42
BH01	02/24/21	4772.46	19.87	6.33	ND	ND	4764.16
BH02	02/05/20	4773.47	17.20	5.58	ND	ND	4765.03
BH02	05/04/20	4773.47	17.17	3.33	ND	ND	4767.28
BH02	08/05/20	4773.47	17.16	6.05	ND	ND	4764.56
BH02	11/25/20	4773.47	17.15	6.29	ND	ND	4764.32
BH02	02/24/21	4773.47	17.13	6.49	ND	ND	4764.12
BH03	02/05/20	4770.68	13.94	5.94	ND	ND	4765.15
BH03	05/04/20	4770.68	13.87	3.67	ND	ND	4767.42
BH03	08/05/20	4770.68	13.74	6.38	ND	ND	4764.71
BH03	11/25/20	4770.68	13.73	6.62	ND	ND	4764.47
BH03	02/24/21	4770.68	13.60	6.85	ND	ND	4764.24
BH04	02/05/20	4773.76	20.42	5.69	ND	ND	4765.13
BH04	05/04/20	4773.76	19.72	3.44	ND	ND	4767.38
BH04	08/05/20	4773.76	19.75	6.21	ND	ND	4764.61
BH04	11/25/20	4773.76	19.74	6.49	ND	ND	4764.33
BH04	02/24/21	4773.76	19.97	6.70	ND	ND	4764.12
BH05	02/05/20	4772.36	19.40	5.61	ND	ND	4765.07
BH05	05/04/20	4772.36	19.23	3.36	ND	ND	4767.32
BH05	08/05/20	4772.36	19.05	6.07	ND	ND	4764.61
BH05	11/25/20	4772.36	18.95	6.29	ND	ND	4764.39
BH05	02/24/21	4772.36	18.85	6.53	ND	ND	4764.15
BH06	02/05/20	4772.64	16.52	5.55	ND	ND	4765.16
BH06	05/04/20	4772.64	16.60	3.32	ND	ND	4767.39
BH06	08/05/20	4772.64	16.58	6.07	ND	ND	4764.64
BH06	11/25/20	4772.64	16.55	6.28	ND	ND	4764.43
BH06	02/24/21	4772.64	16.55	6.48	ND	ND	4764.23
BH07	02/05/20	4772.12	16.01	5.03	ND	ND	4765.00
BH07	05/04/20	4772.12	16.09	2.77	ND	ND	4767.26
BH07	08/05/20	4772.12	16.08	5.53	ND	ND	4764.50
BH07	11/25/20	4772.12	16.61	5.80	ND	ND	4764.23
BH07	02/24/21	4772.12	16.04	6.01	ND	ND	4764.02
BH08	02/05/20	4770.79	12.65	6.00	ND	ND	4764.86
BH08	05/04/20	4770.79	12.66	3.78	ND	ND	4767.08
BH08	08/05/20	4770.79	12.60	6.48	ND	ND	4764.38
BH08	11/25/20	4770.79	12.61	6.75	ND	ND	4764.11
BH08	02/24/21	4770.79	12.66	6.97	ND	ND	4763.89

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13**



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)
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**Notes:**

<sup>(1)</sup> Groundwater elevation data collected prior to January 2020 can be referenced in *Duncan D20-12, 20-13 Fourth Quarter 2021 Site Monitoring Data* (COGCC Document # : 402616302)

<sup>(2)</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 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. - DUNCAN D20-12, 20-13**

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 <sup>(1)</sup>		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
BH01	02/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH01	05/04/20	1,100	<1.0	200	1,400	NA	NA	NA	NA	NA	NA
BH01	08/05/20	850	<1.0	800	1,700	NA	NA	NA	NA	NA	NA
BH01	11/25/20	700	<1.0	650	1,200	NA	NA	NA	NA	NA	NA
BH01	02/24/21	560	<1.0	650	1,400	330	780	1.4	2,620	731	1,070
BH02	02/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH02	05/04/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH02	08/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH02	11/25/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH02	02/24/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,610	563	2,270
BH03	02/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH03	05/04/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH03	08/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH03	11/25/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH03	02/24/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,470	507	2,070
BH04	02/05/20	<1.0	<1.0	25	79	NA	NA	NA	NA	NA	NA
BH04	05/04/20	1.1	<1.0	5.9	14	NA	NA	NA	NA	NA	NA
BH04	08/05/20	1.2	<1.0	14	50	NA	NA	NA	NA	NA	NA
BH04	11/25/20	<1.0	<1.0	7.3	12	NA	NA	NA	NA	NA	NA
BH04	02/24/21	<1.0	<1.0	<1.0	12	5.8	14	1.1	2,790	668	2,510
BH05	02/05/20	240	<1.0	450	1,100	NA	NA	NA	NA	NA	NA
BH05	05/04/20	380	<1.0	190	480	NA	NA	NA	NA	NA	NA
BH05	08/05/20	610	<1.0	740	1,900	NA	NA	NA	NA	NA	NA
BH05	11/25/20	320	<1.0	430	990	NA	NA	NA	NA	NA	NA
BH05	02/24/21	280	<1.0	630	1,400	300	570	1.6	2,530	592	1,260
BH06	02/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH06	05/04/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH06	08/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH06	11/25/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH06	02/24/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3,160	827	2,770
BH07	02/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH07	05/04/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH07	08/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH07	11/25/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH07	02/24/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3,490	1,150	2,680
BH08	02/05/20	<1.0	<1.0	<1.0	2.5	NA	NA	NA	NA	NA	NA
BH08	05/04/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH08	08/05/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH08	11/25/20	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	NA	NA	NA
BH08	02/24/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3,110	764	2,600

**TABLE 2  
GROUNDWATER ANALYTICAL DATA  
NOBLE ENERGY, INC. - DUNCAN D20-12, 20-13**

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 <sup>(1)</sup>		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background

**Notes:**

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

<sup>(2)</sup> Groundwater analytical data received prior to January 2020 can be referenced in *Duncan D20-12, 20-13 Fourth Quarter 2020 Site Monitoring Data* (COGCC Document # : 402616302)

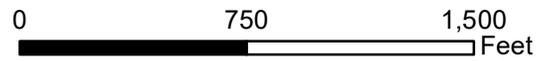
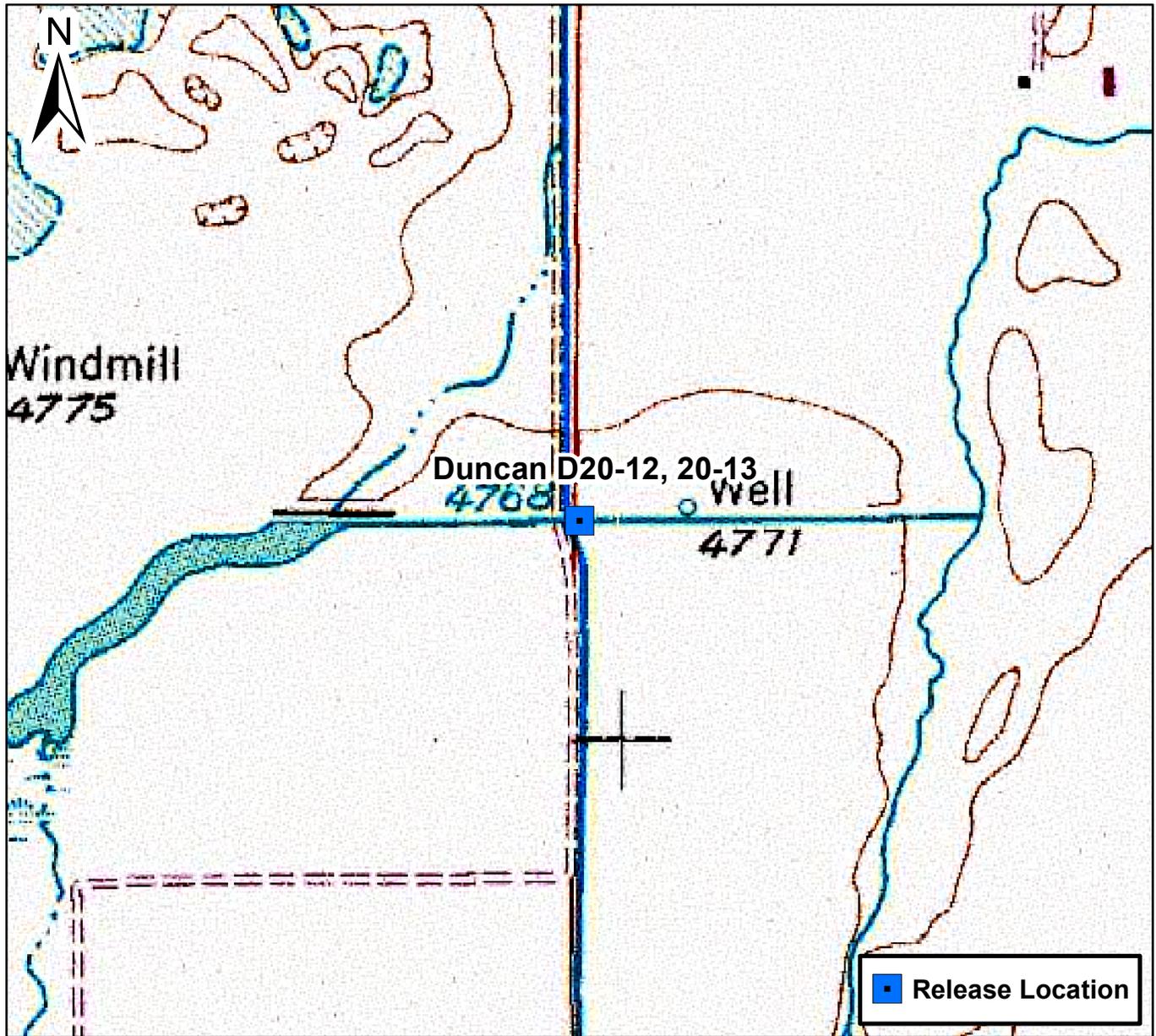
3.) BH03 used as background well location

**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**

## **FIGURES**



### Figure 1

Site Location Map  
 Duncan D20-12, 20-13  
 NWSW S20 T3N R64W  
 Weld County, Colorado





- Legend**
- - - Excavation Extent – June 2019 (Collected via Trimble GPS)
  - - - Excavation Extent – Dec. 2018 (Collected via Trimble GPS)
  - - - DCP Line (Collected via Trimble GPS)
  - Overhead Power Line (Collected via Trimble GPS)
  - + + + Property Fence (Collected via Trimble GPS)
  - X Release Location
  - ◆ 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.

GPS – Global Positioning System

0 ft.      20 ft.      40 ft.

Image Source: Google Earth; Google 2016

DATE:	12/28/2020
DESIGNED BY:	JW
DRAWN BY:	TC

**TASMAN**  
GEOSCIENCES

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

**Noble Energy, Inc. – DJ Basin**  
**Duncan D20-12, 20-13**  
NWSW, Section 20, Township 3 North, Range 64 West  
Weld County, Colorado

Site Overview Map

FIGURE  
2



DATE: 03/31/2021

DESIGNED BY: JW

DRAWN BY: TC



**Noble Energy, Inc. – DJ Basin**  
**Duncan D20-12, 20-13**  
 NWSW, Section 20, Township 3 North, Range 64 West  
 Weld County, Colorado

Groundwater Potentiometric  
 Surface Contour Figure  
 (02/24/2021)

FIGURE  
 3

BH07	
Compound	2/24/2021
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)	3,490
Chloride (mg/L)	1,150
Sulfate (mg/L)	2,680

BH08	
Compound	2/24/2021
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)	3,110
Chloride (mg/L)	764
Sulfate (mg/L)	2,600

BH01	
Compound	2/24/2021
Benzene (ug/L)	560
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	650
Total Xylenes (ug/L)	1,400
Naphthalene (ug/L)	330
1,2,4-Trimethylbenzene (ug/L)	780
1,3,5-Trimethylbenzene (ug/L)	1.4
Total Dissolved Solids (mg/L)	2,620
Chloride (mg/L)	731
Sulfate (mg/L)	1,070

BH05	
Compound	2/24/2021
Benzene (ug/L)	280
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	630
Total Xylenes (ug/L)	1,400
Naphthalene (ug/L)	300
1,2,4-Trimethylbenzene (ug/L)	570
1,3,5-Trimethylbenzene (ug/L)	1.6
Total Dissolved Solids (mg/L)	2,530
Chloride (mg/L)	592
Sulfate (mg/L)	1,260

BH02	
Compound	2/24/2021
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)	2,610
Chloride (mg/L)	563
Sulfate (mg/L)	2,270

BH06	
Compound	2/24/2021
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)	3,160
Chloride (mg/L)	827
Sulfate (mg/L)	2,770

BH04	
Compound	2/24/2021
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	12
Naphthalene (ug/L)	5.8
1,2,4-Trimethylbenzene (ug/L)	14
1,3,5-Trimethylbenzene (ug/L)	1.1
Total Dissolved Solids (mg/L)	2,790
Chloride (mg/L)	668
Sulfate (mg/L)	2,510

BH03	
Compound	2/24/2021
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)	2,470
Chloride (mg/L)	507
Sulfate (mg/L)	2,070

**Legend**

- Excavation Extent – June 2019 (Collected via Trimble GPS)
- Excavation Extent – Dec. 2018 (Collected via Trimble GPS)
- - - DCP Line (Collected via Trimble GPS)
- Overhead Power Line (Collected via Trimble GPS)
- + + + Property Fence (Collected via Trimble GPS)
- X Release Location
- Monitoring Well Location (Collected via Trimble GPS)

**Notes**

- All locations are approximate unless otherwise noted
- Site infrastructure has been removed, shown for illustrative purposes only.
- RED value indicates concentration greater than COGCC table 915-1 standard (see table below).

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

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 <sub>4</sub> – Sulfate Ion	<250 mg/L or 1.25 x background

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2016

DATE: 03/24/2021  
 DESIGNED BY: JW  
 DRAWN BY: TC

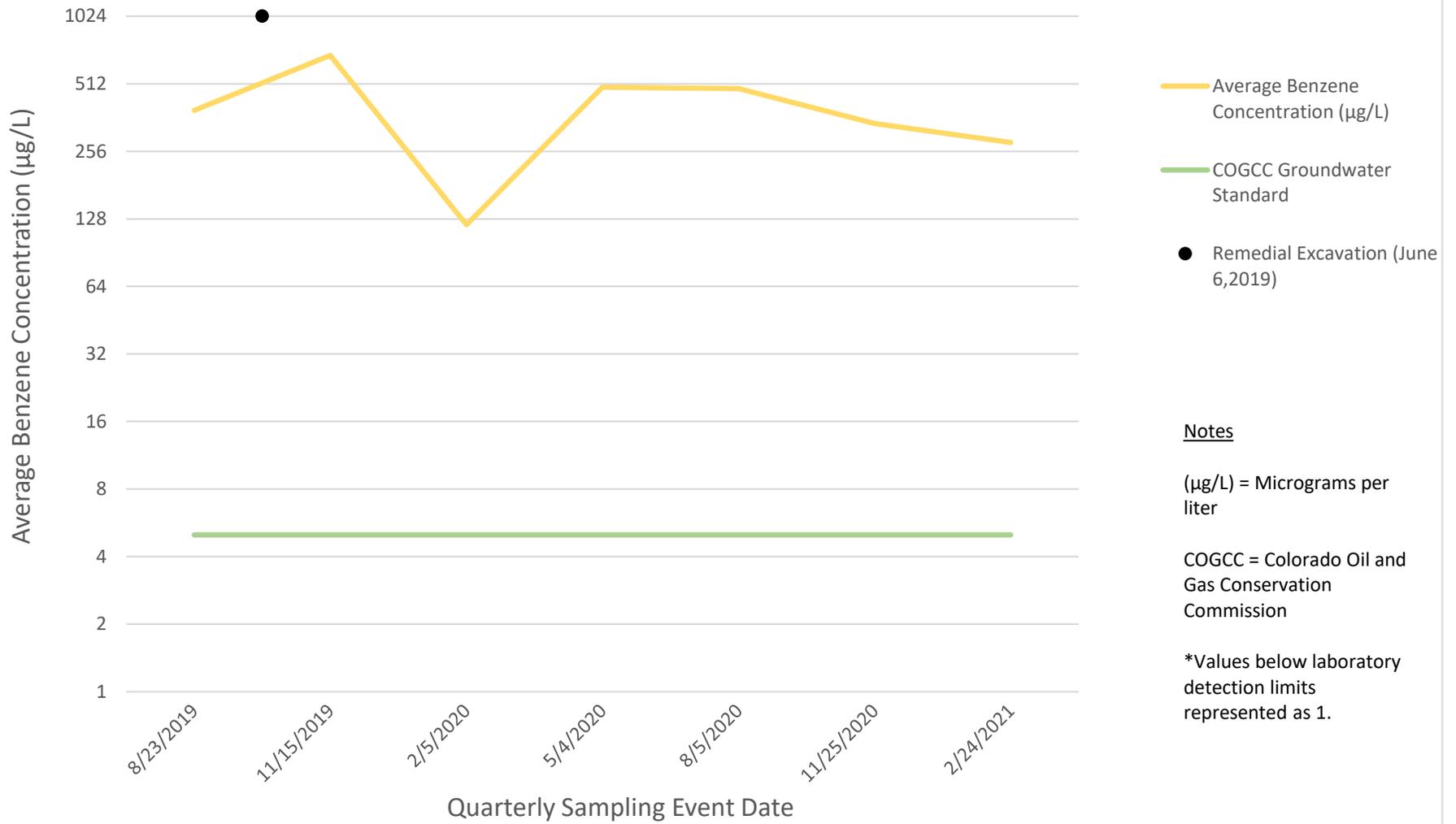
**TASMAN GEOSCIENCES**  
 Tasman Geosciences, Inc.  
 6855 W. 119<sup>th</sup> Avenue  
 Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin**  
**Duncan D20-12, 20-13**  
 NWSW, Section 20, Township 3 North, Range 64 West  
 Weld County, Colorado

Groundwater Analytical  
 Results Map  
 (02/24/2021)

FIGURE  
 4

Figure 5  
Duncan D20-12, 20-13  
Average Quarterly Benzene Concentrations



**ATTACHMENT A**

**LABORATORY ANALYTICAL DATA REPORT**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 03, 2021

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Duncan D20-12, 20-13

Work Order #2102339

Enclosed are the results of analyses for samples received by Summit Scientific on 02/24/21 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M".

Muri Premer For Paul Shrewsbury  
President



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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2102339-01	Water	02/24/21 13:56	02/24/21 17:40
BH02	2102339-02	Water	02/24/21 13:41	02/24/21 17:40
BH03	2102339-03	Water	02/24/21 13:31	02/24/21 17:40
BH04	2102339-04	Water	02/24/21 13:24	02/24/21 17:40
BH05	2102339-05	Water	02/24/21 13:49	02/24/21 17:40
BH06	2102339-06	Water	02/24/21 13:17	02/24/21 17:40
BH07	2102339-07	Water	02/24/21 13:10	02/24/21 17:40
BH08	2102339-08	Water	02/24/21 12:59	02/24/21 17:40

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.*

2102339

# Summit Scientific

S<sub>2</sub>

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

Client: Noble / Tasman	Project Manager: Brandon Bruns, Invoice: Jacob Evans
Address: 6855 W 119th Ave.	E-Mail: bbruns@tasman-geo.com
City/State/Zip: Broomfield, CO 80020	
Phone: 303-487-1228	Project Name: Duncan D20-12, 20-13
Sampler Name: Yianni Tsambis	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	NAP	1,2,4 TMB	1,3,5 TMB	TDS	Chloride	Sulfate		
1	BH01	2/24/2021	1356	4			X		X					X	X	X	X	X	X	X	915 Standards
2	BH02	2/24/2021	1341	4			X		X					X	X	X	X	X	X	X	
3	BH03	2/24/2021	1331	4			X		X					X	X	X	X	X	X	X	
4	BH04	2/24/2021	1324	4			X		X					X	X	X	X	X	X	X	
5	BH05	2/24/2021	1349	4			X		X					X	X	X	X	X	X	X	
6	BH06	2/24/2021	1317	4			X		X					X	X	X	X	X	X	X	
7	BH07	2/24/2021	1310	4			X		X					X	X	X	X	X	X	X	
8	BH08	2/24/2021	1259	4			X		X					X	X	X	X	X	X	X	
9																					
10																					

Relinquished by: <i>Y</i>	Date/Time: 2/24/21 1940	Received by: Tasman's Lock Box	Date/Time: 2/24/21 1540	Turn Around Time (Check)	Notes:	
				Same Day <input type="checkbox"/>	72 hours <input type="checkbox"/>	
				24 hours <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	
				48 hours <input type="checkbox"/>		
				Sample Integrity:		
				Temperature Upon Receipt: <i>2.8</i>		
				Samples Intact: Yes No		

**Sample Receipt Checklist**

S2 Work Order 2102339

Client: Noble/Tasman Client Project ID: Duncan D20-12,20-13

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	2.8
-----------	-----

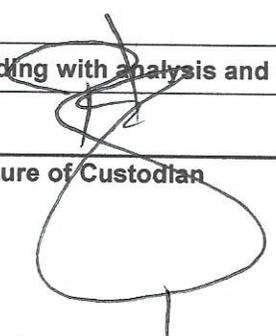
Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>		✓		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

2/24/21  
Date/Time



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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH01**  
**2102339-01 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>560</b>	100		ug/l	100	BEB0396	02/25/21	02/26/21	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>650</b>	100		"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>1400</b>	200		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>330</b>	100		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>780</b>	100		"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>1.4</b>	1.0		"	1	"	"	"	"	

Date Sampled: **02/24/21 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		117 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>731</b>	12.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Sulfate</b>	<b>1070</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2620</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH02**  
**2102339-02 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEB0396	02/25/21	02/26/21	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: **02/24/21 13:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		124 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>2270</b>	60.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Chloride</b>	<b>563</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2610</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH03**  
**2102339-03 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEB0396	02/25/21	02/26/21	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: **02/24/21 13:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		122 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>507</b>	12.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
Sulfate	<b>2070</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2470</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH04**  
**2102339-04 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BEB0396	02/25/21	02/26/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>12</b>	2.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>5.8</b>	1.0	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>14</b>	1.0	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>1.1</b>	1.0	"	"	"	"	"	"	

Date Sampled: **02/24/21 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sulfate</b>	<b>2510</b>	60.0	mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Chloride</b>	<b>668</b>	12.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Total Dissolved Solids</b>	<b>2790</b>	10.0	mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH05**  
**2102339-05 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>280</b>	100	ug/l	100	BEB0396	02/25/21	02/26/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
<b>Ethylbenzene</b>	<b>630</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>1400</b>	200	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>300</b>	100	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>570</b>	100	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>1.6</b>	1.0	"	1	"	"	"	"	

Date Sampled: **02/24/21 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Chloride</b>	<b>592</b>	12.0	mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Sulfate</b>	<b>1260</b>	60.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Total Dissolved Solids</b>	<b>2530</b>	10.0	mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH06**  
**2102339-06 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEB0396	02/25/21	02/26/21	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: **02/24/21 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		125 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>2770</b>	60.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Chloride</b>	<b>827</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3160</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH07**  
**2102339-07 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEB0396	02/25/21	02/26/21	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: **02/24/21 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		125 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>1150</b>	12.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
Sulfate	<b>2680</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3490</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**BH08**  
**2102339-08 (Water)**

**Summit Scientific**

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

Date Sampled: **02/24/21 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEB0396	02/25/21	02/26/21	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: **02/24/21 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		127 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/24/21 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Sulfate</b>	<b>2600</b>	60.0		mg/L	200	BEC0043	03/02/21	03/03/21	EPA 300.0	
<b>Chloride</b>	<b>764</b>	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/24/21 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3110</b>	10.0		mg/L	1	BEC0065	03/03/21	03/03/21	SM2540C	

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/03/21 12:58

### 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 BEB0396 - EPA 5030 Water MS

##### Blank (BEB0396-BLK1)

Prepared: 02/25/21 Analyzed: 02/27/21

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	16.0		"	13.3		120	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		93.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

##### LCS (BEB0396-BS1)

Prepared: 02/25/21 Analyzed: 02/27/21

Benzene	41.7	1.0	ug/l	41.7		100	51-132			
Toluene	38.0	1.0	"	41.7		91.1	51-138			
Ethylbenzene	42.1	1.0	"	41.7		101	58-146			
m,p-Xylene	77.6	2.0	"	83.3		93.2	57-144			
o-Xylene	41.1	1.0	"	41.7		98.7	53-146			
Naphthalene	45.3	1.0	"	41.7		109	70-130			
1,2,4-Trimethylbenzene	43.7	1.0	"	41.7		105	70-130			
1,3,5-Trimethylbenzene	41.8	1.0	"	41.7		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.3		116	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		105	21-167			

##### Matrix Spike (BEB0396-MS1)

Source: 2102324-01

Prepared: 02/25/21 Analyzed: 02/28/21

Benzene	42.2	1.0	ug/l	41.7	ND	101	34-141			
Toluene	39.2	1.0	"	41.7	ND	94.1	27-151			
Ethylbenzene	42.7	1.0	"	41.7	ND	102	29-160			
m,p-Xylene	79.1	2.0	"	83.3	ND	95.0	20-166			
o-Xylene	41.6	1.0	"	41.7	ND	99.8	33-159			
Naphthalene	51.4	1.0	"	41.7	ND	123	70-130			
1,2,4-Trimethylbenzene	45.0	1.0	"	41.7	ND	108	70-130			
1,3,5-Trimethylbenzene	42.4	1.0	"	41.7	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/03/21 12:58

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

**Summit Scientific**

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

**Batch BEB0396 - EPA 5030 Water MS**

**Matrix Spike Dup (BEB0396-MSD1)**

Source: 2102324-01

Prepared: 02/25/21 Analyzed: 02/28/21

Benzene	43.1	1.0	ug/l	41.7	ND	103	34-141	2.21	30	
Toluene	42.9	1.0	"	41.7	ND	103	27-151	8.95	30	
Ethylbenzene	42.9	1.0	"	41.7	ND	103	29-160	0.607	30	
m,p-Xylene	79.8	2.0	"	83.3	ND	95.8	20-166	0.893	30	
o-Xylene	41.5	1.0	"	41.7	ND	99.6	33-159	0.169	30	
Naphthalene	52.8	1.0	"	41.7	ND	127	70-130	2.71	30	
1,2,4-Trimethylbenzene	45.6	1.0	"	41.7	ND	110	70-130	1.35	30	
1,3,5-Trimethylbenzene	42.5	1.0	"	41.7	ND	102	70-130	0.0942	30	
Surrogate: 1,2-Dichloroethane-d4	15.5		"	13.3		116	23-173			
Surrogate: Toluene-d8	14.3		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
03/03/21 12:58

**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 BEC0043 - General Preparation**

**Blank (BEC0043-BLK1)**

Prepared: 03/02/21 Analyzed: 03/03/21

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

**LCS (BEC0043-BS1)**

Prepared: 03/02/21 Analyzed: 03/03/21

Sulfate	14.9	0.300	mg/L	15.0	99.6	90-110				
Chloride	2.78	0.0600	"	3.00	92.6	90-110				

**Duplicate (BEC0043-DUP1)**

Source: 2103018-01

Prepared: 03/02/21 Analyzed: 03/03/21

Sulfate	23.4	0.300	mg/L		23.6		0.762	20		
Chloride	4380	0.0600	"		4410		0.701	20		

**Matrix Spike (BEC0043-MS1)**

Source: 2103018-01

Prepared: 03/02/21 Analyzed: 03/03/21

Chloride	3790	0.0600	mg/L	3.00	4410	NR	80-120			QM-02
Sulfate	37.7	0.300	"	15.0	23.6	94.4	80-120			

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

**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 BEC0065 - General Preparation**

**Blank (BEC0065-BLK1)**

Prepared & Analyzed: 03/03/21

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (BEC0065-DUP1)**

Source: 2102339-01

Prepared & Analyzed: 03/03/21

Total Dissolved Solids      2610      10.0      mg/L      2620      0.650      20

Summit Scientific

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

Project: Noble - Duncan D20-12, 20-13

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
03/03/21 12:58

### Notes and Definitions

- QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- 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