

FOURTH QUARTER 2020 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

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.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	08/23/19	4772.46	21.77	5.32	ND	ND	4765.17
BH01	11/15/19	4772.46	21.68	5.73	ND	ND	4764.76
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
BH02	08/23/19	4773.47	17.30	5.47	ND	ND	4765.14
BH02	11/15/19	4773.47	17.23	5.89	ND	ND	4764.72
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
BH03	08/23/19	4770.68	14.10	5.83	ND	ND	4765.26
BH03	11/15/19	4770.68	13.92	6.27	ND	ND	4764.82
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
BH04	08/23/19	4773.76	20.74	5.62	ND	ND	4765.20
BH04	11/15/19	4773.76	19.76	6.02	ND	ND	4764.80
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
BH05	08/23/19	4772.36	20.15	5.56	ND	ND	4765.12
BH05	11/15/19	4772.36	19.69	5.93	ND	ND	4764.75
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
BH06	08/23/19	4772.64	16.63	5.53	ND	ND	4765.18
BH06	11/15/19	4772.64	16.59	5.90	ND	ND	4764.81
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
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
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

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.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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

Notes:

BTOC = Below top of casing

ft. = Feet

ND = No LNAPL detected

AMSL = Above mean sea level

LNAPL = Light non-aqueous phase liquid

1) Depth to water measurements collected prior to third quarter 2019 were measured from top of well casing. Subsequent 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:

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

LNAPL relative density was estimated to be approximately 0.75

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)
COGCC Standard		5	560	700	1,400
GW01	12/10/18	970	3.2	560	3,800
BH01	08/23/19	440	<1.0	490	1,400
BH01	11/15/19	840	<1.0	420	1,200
BH01	02/05/20	<1.0	<1.0	<1.0	<2.0
BH01	05/04/20	1,100	<1.0	200	1,400
BH01	08/05/20	850	<1.0	800	1,700
BH01	11/25/20	700	<1.0	650	1,200
BH02	08/23/19	<1.0	<1.0	<1.0	<2.0
BH02	11/15/19	<1.0	<1.0	<1.0	<2.0
BH02	02/05/20	<1.0	<1.0	<1.0	<2.0
BH02	05/04/20	<1.0	<1.0	<1.0	<2.0
BH02	08/05/20	<1.0	<1.0	<1.0	<2.0
BH02	11/25/20	<1.0	<1.0	<1.0	<2.0
BH03	08/23/19	<1.0	<1.0	<1.0	<2.0
BH03	11/15/19	<1.0	<1.0	<1.0	<2.0
BH03	02/05/20	<1.0	<1.0	<1.0	<2.0
BH03	05/04/20	<1.0	<1.0	<1.0	<2.0
BH03	08/05/20	<1.0	<1.0	<1.0	<2.0
BH03	11/25/20	<1.0	<1.0	<1.0	<2.0
BH04	08/23/19	<1.0	<1.0	<1.0	<2.0
BH04	11/15/19	<1.0	<1.0	<1.0	<2.0
BH04	02/05/20	<1.0	<1.0	25	79
BH04	05/04/20	1.1	<1.0	5.9	14
BH04	08/05/20	1.2	<1.0	14	50
BH04	11/25/20	<1.0	<1.0	7.3	12
BH05	08/23/19	340	<1.0	500	1,700
BH05	11/15/19	530	<1.0	490	1,600
BH05	02/05/20	240	<1.0	450	1,100
BH05	05/04/20	380	<1.0	190	480
BH05	08/05/20	610	<1.0	740	1,900
BH05	11/25/20	320	<1.0	430	990
BH06	08/23/19	<1.0	<1.0	<1.0	<2.0
BH06	11/15/19	<1.0	<1.0	<1.0	<2.0
BH06	02/05/20	<1.0	<1.0	<1.0	<2.0
BH06	05/04/20	<1.0	<1.0	<1.0	<2.0
BH06	08/05/20	<1.0	<1.0	<1.0	<2.0
BH06	11/25/20	<1.0	<1.0	<1.0	<2.0
BH07	02/05/20	<1.0	<1.0	<1.0	<2.0
BH07	05/04/20	<1.0	<1.0	<1.0	<2.0
BH07	08/05/20	<1.0	<1.0	<1.0	<2.0
BH07	11/25/20	<1.0	<1.0	<1.0	<2.0
BH08	02/05/20	<1.0	<1.0	<1.0	2.5

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)
COGCC Standard		5	560	700	1,400
BH08	05/04/20	<1.0	<1.0	<1.0	<2.0
BH08	08/05/20	<1.0	<1.0	<1.0	<2.0
BH08	11/25/20	<1.0	<1.0	<1.0	<2.0

Notes:

µg/L = Micrograms per liter

COGCC = Colorado Oil and Gas Conservation Commission

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

Highlighted results are equal to or exceed the COGCC Table 910-1 standard

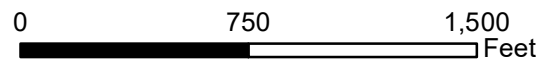
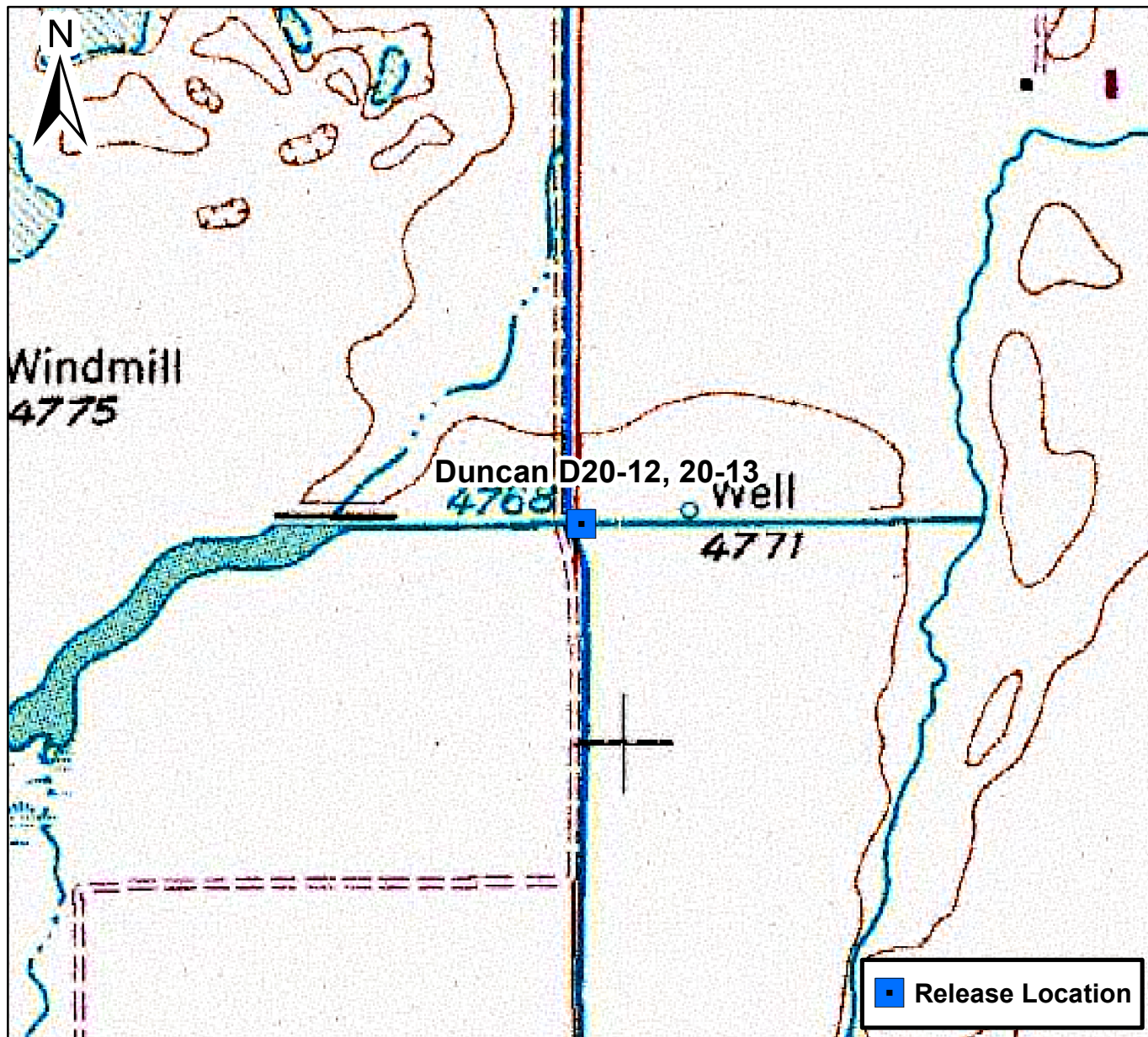
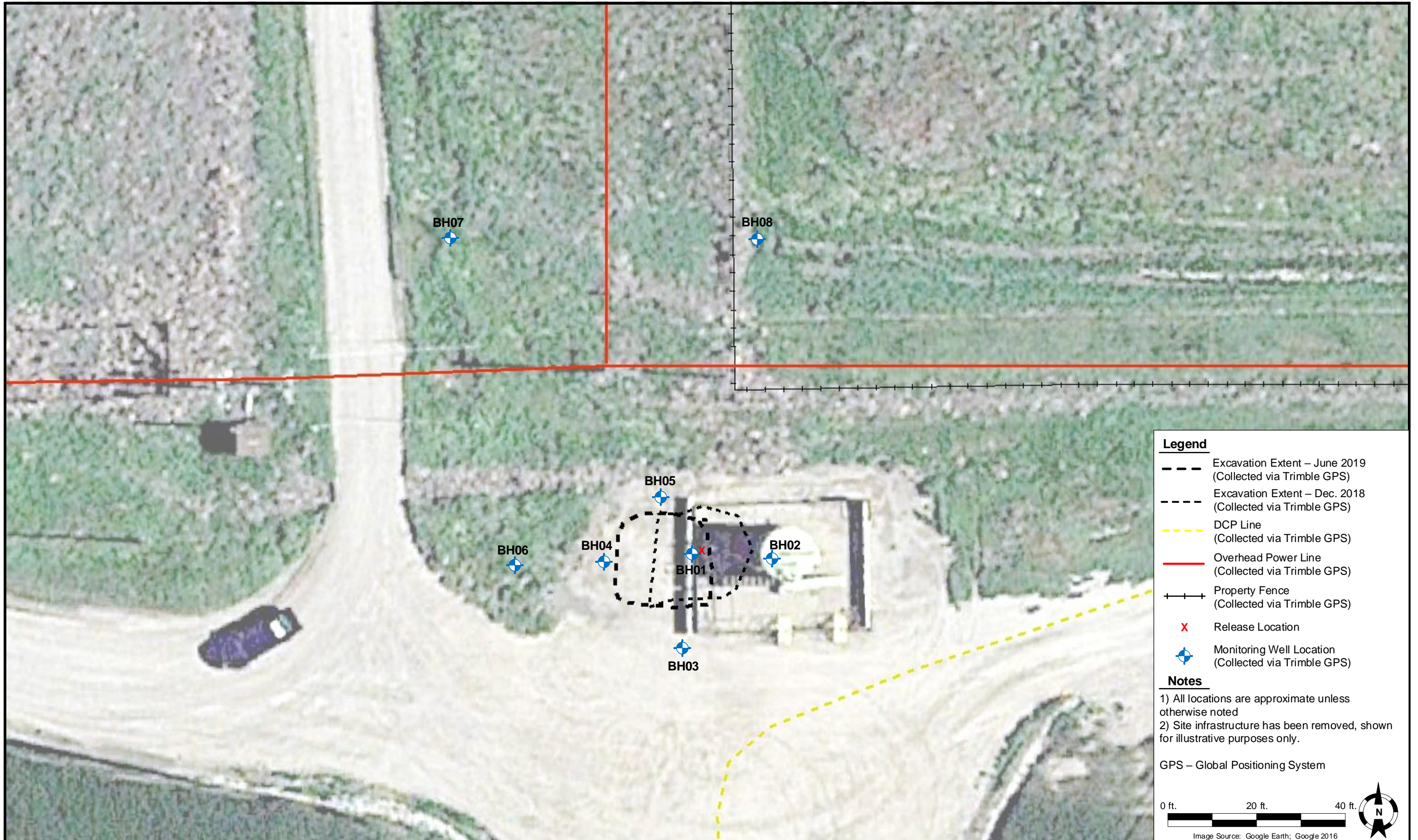


Figure 1

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	 TASMAN GEOSCIENCES	Tasman Geosciences, Inc. 6855 W. 119 th 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
DESIGNED BY: JW					
DRAWN BY: TC					



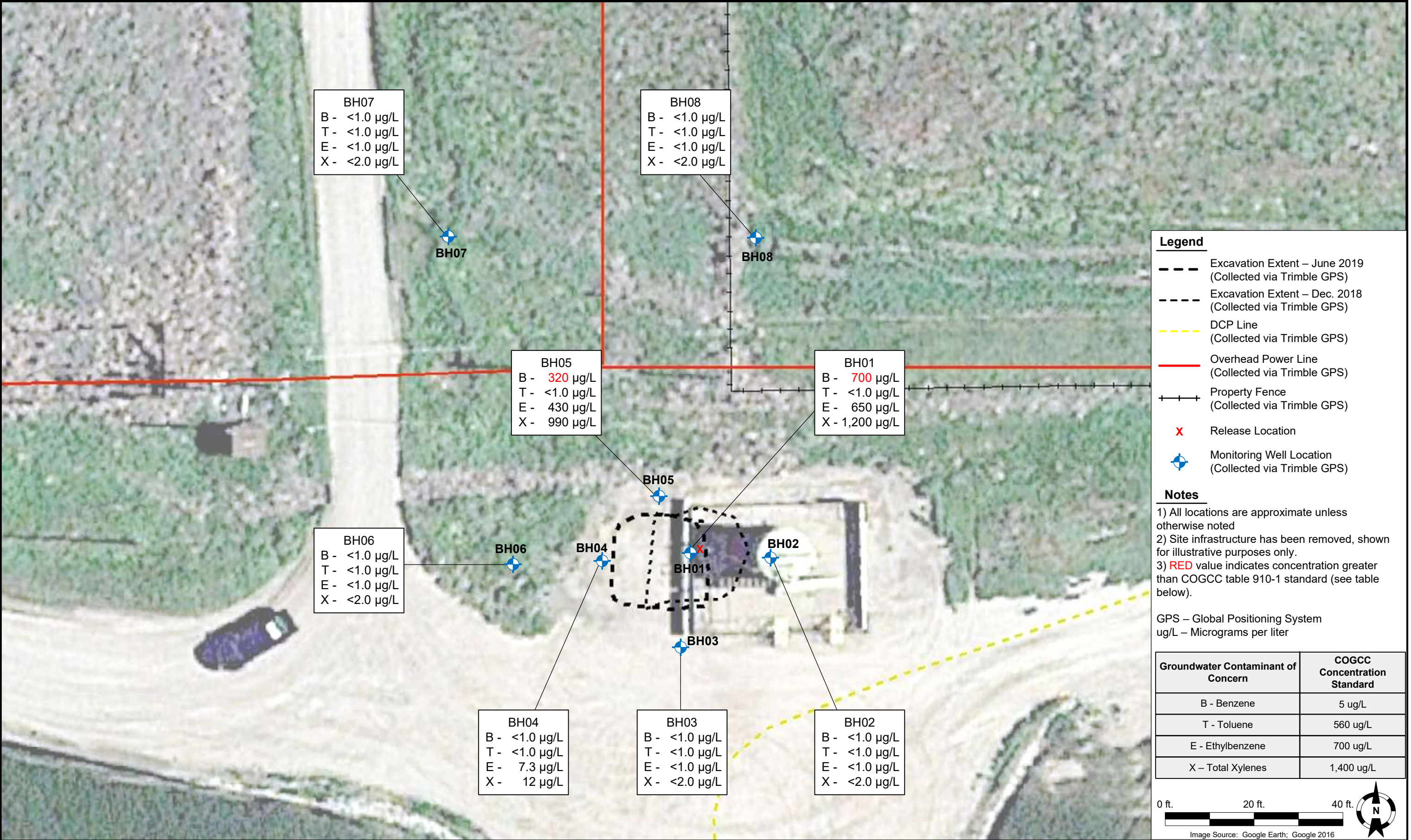
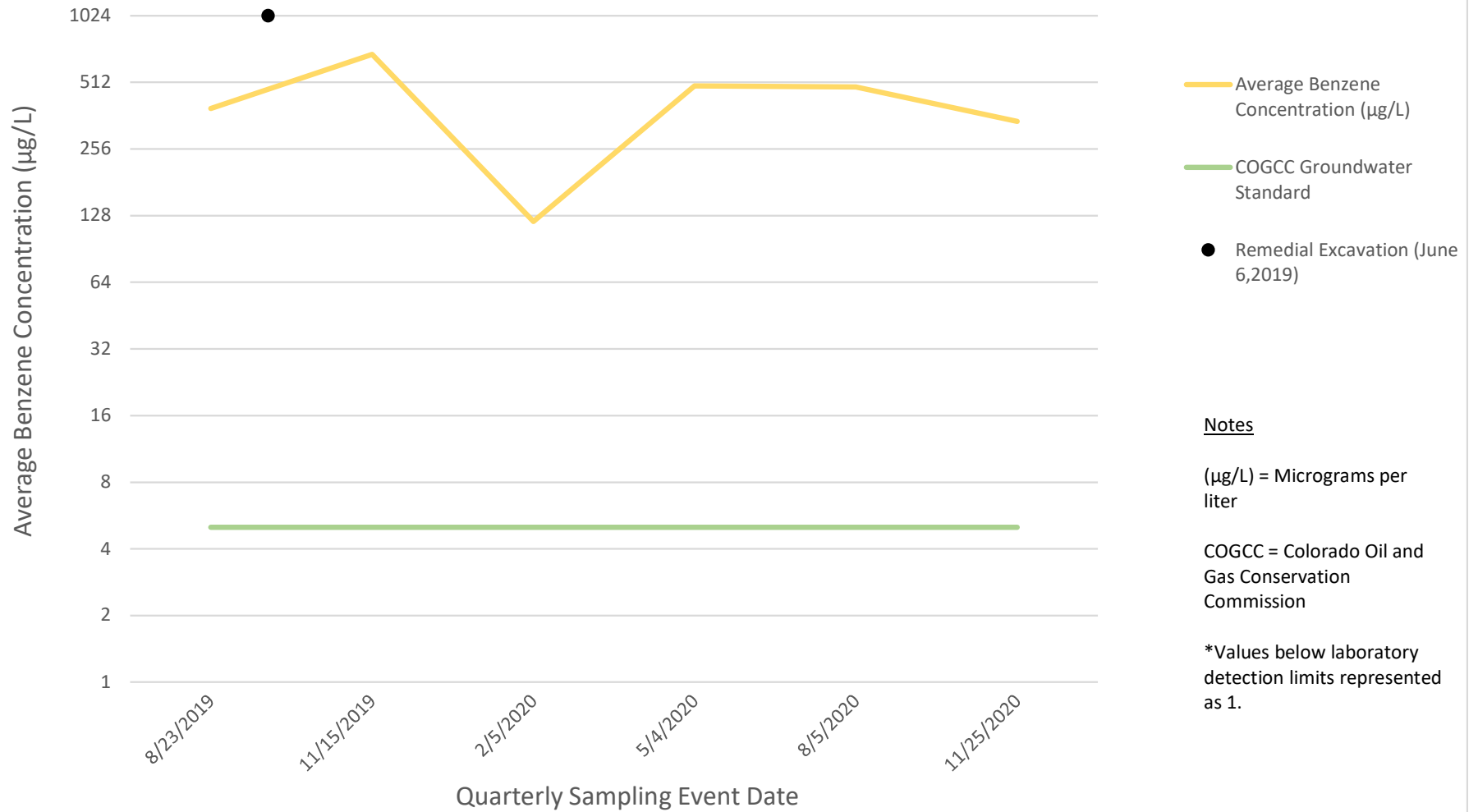


Figure 5
Duncan D20-12, 20-13
Average Quarterly Benzene Concentrations



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 04, 2020

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

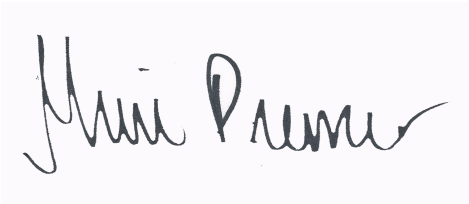
Broomfield, CO 80020

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

Work Order #2011343

Enclosed are the results of analyses for samples received by Summit Scientific on 11/25/20 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier 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:
12/04/20 15:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2011343-01	Water	11/25/20 11:00	11/25/20 17:00
BH02	2011343-02	Water	11/25/20 11:20	11/25/20 17:00
BH03	2011343-03	Water	11/25/20 11:10	11/25/20 17:00
BH04	2011343-04	Water	11/25/20 11:00	11/25/20 17:00
BH05	2011343-05	Water	11/25/20 10:50	11/25/20 17:00
BH06	2011343-06	Water	11/25/20 10:50	11/25/20 17:00
BH07	2011343-07	Water	11/25/20 10:40	11/25/20 17:00
BH08	2011343-08	Water	11/25/20 10:35	11/25/20 17:00

Summit Scientific

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Summit Scientific

2011343

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1 ...

Client: Noble / Tasman

Project Manager: Brandon Bruns, Invoice: Jacob Evans

Address: 6855 W 119th Avenue

E-Mail: Bbruns@tasman-geo.com

City/State/Zip: Broomfield, CO, 80020

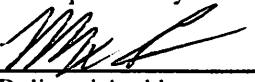
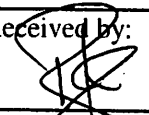
Phone: 979-255-4235

Project Name: Duncan D20-12, 20-13

Sampler Name: Max Garza

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	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	BH01	11/25/20	11:00	3	X				X				X				
2	BH02		11:20														
3	BH03		11:10														
4	BH04		11:00														
5	BH05		10:50														
6	BH06		10:50														
7	BH07		10:40														
8	BH08		10:35														
9																	
10																	

Relinquished by: 	Date/Time: 11/25/20 15:15	Received by: Tasman's Lock Box	Date/Time: 11/25/20 15:15	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>2.1</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 11/25/20 17:00	Received by: 	Date/Time: 11/25/20 17:00		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2011343

Client: NOBLE/TASMAN

Client Project ID: DUNCAN D20-12, 20-13

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

Airbill #: _____

Matrix (check all that apply):

☐ Air

☐ Soil/Solid

☒ Water

☐ Other: _____

(Describe)

Temp (°C)	2.1
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<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"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	
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"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽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, H2SO4, NaOH, HNO3, ect	<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.

RICHARD ZENTNER

Custodian Printed Name or Initials

Signature of Custodian

Date/Time

11/27/2020



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

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

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

BH01
2011343-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	700	100		ug/l	100	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	650	100		"	100	"	"	"	"	
Xylenes (total)	1200	200		"	"	"	"	"	"	

Date Sampled: **11/25/20 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		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 - Duncan D20-12, 20-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

BH02
2011343-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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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:
12/04/20 15:53

BH03
2011343-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

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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:
12/04/20 15:53

BH04
2011343-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	7.3	1.0	"	"	"	"	"	"	
Xylenes (total)	12	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	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 Bruns

Reported:
12/04/20 15:53

BH05
2011343-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	320	100	ug/l	100	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	430	100	"	100	"	"	"	"	
Xylenes (total)	990	200	"	"	"	"	"	"	

Date Sampled: **11/25/20 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		117 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		99.7 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167	"	"	"	"	

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

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

BH06
2011343-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

BH07
2011343-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

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

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

BH08
2011343-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/25/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BDL0003	12/01/20	12/02/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/25/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

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

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/04/20 15:53

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BDL0003 - EPA 5030 Water MS

Blank (BDL0003-BLK1)

Prepared: 12/01/20 Analyzed: 12/02/20

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.2	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	21-167			

LCS (BDL0003-BS1)

Prepared: 12/01/20 Analyzed: 12/02/20

Benzene	26.9	1.0	ug/l	33.3		80.6	51-132			
Toluene	27.8	1.0	"	33.3		83.5	51-138			
Ethylbenzene	28.0	1.0	"	33.3		84.0	58-146			
m,p-Xylene	58.7	2.0	"	66.7		88.0	57-144			
o-Xylene	30.2	1.0	"	33.3		90.8	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.3	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.2	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

Matrix Spike (BDL0003-MS1)

Source: 2011293-01

Prepared: 12/01/20 Analyzed: 12/02/20

Benzene	17.6	1.0	ug/l	33.3	ND	52.7	34-141			
Toluene	29.8	1.0	"	33.3	ND	89.6	27-151			
Ethylbenzene	29.4	1.0	"	33.3	ND	88.1	29-160			
m,p-Xylene	63.7	2.0	"	66.7	ND	95.6	20-166			
o-Xylene	32.7	1.0	"	33.3	ND	98.2	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		96.1	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

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

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/04/20 15:53

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 BDL0003 - EPA 5030 Water MS

Matrix Spike Dup (BDL0003-MSD1)	Source: 2011293-01			Prepared: 12/01/20 Analyzed: 12/02/20						
Benzene	17.5	1.0	ug/l	33.3	ND	52.4	34-141	0.571	30	
Toluene	27.7	1.0	"	33.3	ND	83.2	27-151	7.40	30	
Ethylbenzene	29.2	1.0	"	33.3	ND	87.7	29-160	0.546	30	
m,p-Xylene	60.8	2.0	"	66.7	ND	91.2	20-166	4.74	30	
o-Xylene	32.2	1.0	"	33.3	ND	96.5	33-159	1.70	30	
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.4	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		93.2	20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	21-167			

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

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/04/20 15:53

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