



INTRODUCTION

This Second Quarter 2021 Site Monitoring and Well Installation Data presents the results of soil and groundwater sampling activities completed at the Munds 13-29, Dickerson 14-29A site (Site).

Sampling activities were performed by Tasman Geosciences, Inc on behalf of Noble Energy, Inc to delineate soil impacts and evaluate groundwater conditions the Site. The data collected was used to develop the soil and groundwater summary tables, figures, and logs.

PROJECT INFORMATION

Spill Tracking # 459197
Remediation # 12255

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MUNDS 13-29, DICKERSON 14-29A

SECOND QUARTER 2021 SITE MONITORING AND WELL INSTALLATION DATA

SOIL SAMPLING SUMMARY

Soil Boring Activities

Between February 24 and April 27, 2021, Tasman advanced 19 soil borings (BH16 – BH27, SVE-01 – SVE-07) and installed a total of seven Soil-Vapor Extraction (SVE) remediation wells in the area of the former Munds 13-29, Dickerson 14-29A tank battery. A total of four soil samples were collected from soil borings BH23 and BH27 for lab analysis of applicable COGCC Table 915-1 analytes.

Soil Analytical Results

Laboratory analytical results indicate petroleum hydrocarbon soil impacts in exceedance of COGCC Table 915-1 standards are present at BH23 and BH27 between 7 and 14 feet below ground surface.

GROUNDWATER SAMPLING SUMMARY

Monitoring Well Installation and Sampling

During soil boring activities, groundwater was encountered between approximately 5 and 12 feet below ground surface. As a result, Tasman installed monitoring wells in 12 of the 19 boreholes (BH16 – BH27) to monitor groundwater quality. Monitoring wells BH16 and BH17 were sampled on April 7, 2021, and a Site-wide groundwater sampling event was conducted on June 15, 2021. Monitoring wells BH23 and BH27 were unable to be sampled due to insufficient water volume. Due to landowner constraints, Tasman installed a temporary monitoring well (BH18) via hand auger and subsequently abandoned the well following the collection of groundwater samples. Tasman will continue to hand auger and abandon this monitoring well location to obtain groundwater samples during future quarterly sampling events.

Groundwater Analytical Results

Laboratory analytical results indicate dissolved phase petroleum hydrocarbon groundwater impacts are in exceedance of applicable COGCC Table 915-1 groundwater standards for benzene (BH16, BH17, BH21, BH22, BH25, BH26), ethylbenzene (BH22), total xylenes (BH17, BH21, BH22, BH26), 1,2,4-trimethylbenzene (BH16, BH17, BH21, BH22, BH26) and 1,3,5-trimethylbenzene (BHBH16, BH17, BHBH22, BH26).

Based on background inorganic levels at monitoring well BH20, monitoring wells BH16 – BH18, BH22 and BH24 – BH26 are in exceedance of applicable COGCC Table 915-1 inorganic groundwater standards.

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TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - MUNDS 13-29, DICKERSON 14-29A

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
BH23@8.5'-10'	04/27/21	<0.0020	<0.0050	0.012	<0.010	0.15	0.12	0.018	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0100	<0.00500	<0.00500	<0.0100	<0.00500	0.00675	0.0132
BH23@12'-14'	04/27/21	<0.0020	<0.0050	0.048	<0.010	0.20	0.16	0.012	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0100	<0.00500	<0.00500	<0.0100	<0.00500	<0.0100	<0.0100
BH27@7'-10'	04/27/21	<0.0020	<0.0050	0.11	3.9	0.52	0.46	0.053	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0100	<0.00500	<0.00500	<0.0100	<0.00500	0.0265	0.0555
BH2712'-14'	04/27/21	<0.0020	0.071	0.087	<0.010	0.25	0.20	0.019	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0100	<0.00500	<0.00500	<0.0100	<0.00500	<0.0100	0.00669

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for
- SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

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

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

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

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

Benz(a) = Benzanthracene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MUNDS 13-29, DICKERSON 14-29A



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)
BH16	04/07/21	4887.84	13.26	4.68	ND	ND	4883.42
BH16	06/15/21	4887.84	13.26	5.13	ND	ND	4882.97
BH17	04/07/21	4890.50	14.45	5.73	ND	ND	4885.09
BH17	06/15/21	4890.50	12.34	5.46	ND	ND	4885.36
BH18	06/15/21	Temporary Monitoring Well - Elevation Data Not Collected					
BH19	06/15/21	4892.11	12.18	3.77	ND	ND	4888.69
BH20	06/15/21	4892.66	11.76	2.83	ND	ND	4890.00
BH21	06/15/21	4890.86	13.18	4.90	ND	ND	4886.18
BH22	06/15/21	4888.83	9.48	5.41	5.39	0.02	4883.66
BH23	06/15/21	4887.00	12.34	12.46	ND	ND	4874.88
BH24	06/15/21	4888.54	13.51	9.87	ND	ND	4878.84
BH25	06/15/21	4889.28	11.01	4.27	ND	ND	4885.27
BH26	06/15/21	4888.15	11.63	5.25	ND	ND	4883.06
BH27	06/15/21	4887.09	13.27			DRY	

Notes:

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 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MUNDS 13-29, DICKERSON 14-29A**

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
BH16	04/07/21	750	<1.0	69	430	4	60	76	1,740	251	283
BH16	06/15/21	1,500	<1.0	150	850	8	150	96	1,640	369	504
BH17	04/07/21	20	3	920	12,000	21	150	180	2,420	735	518
BH17	06/15/21	11	<1.0	470	6,400	15	500	400	1,500	339	321
BH18	06/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,510	385	515
BH19	06/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	805	184	178
BH20	06/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	820	171	206
BH21	06/15/21	350	<1.0	600	1,500	35	670	14	893	69	256
BH22	06/15/21	1,800	38	94,000	36,000	43	630	490	1,570	426	449
BH23	06/15/21	Monitoring Well Not Sampled - DRY									
BH24	06/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,800	219	984
BH25	06/15/21	420	<1.0	36	83	22	60	7.7	2,980	718	1,460
BH26	06/15/21	2,500	<1.0	430	2,100	14	390	220	892	311	97.0
BH27	06/15/21	Monitoring Well Not Sampled - DRY									

Notes:

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

Monitoring well BH20 used to calculate background concentration limits

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

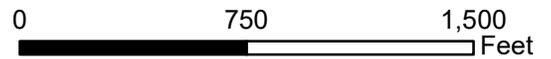
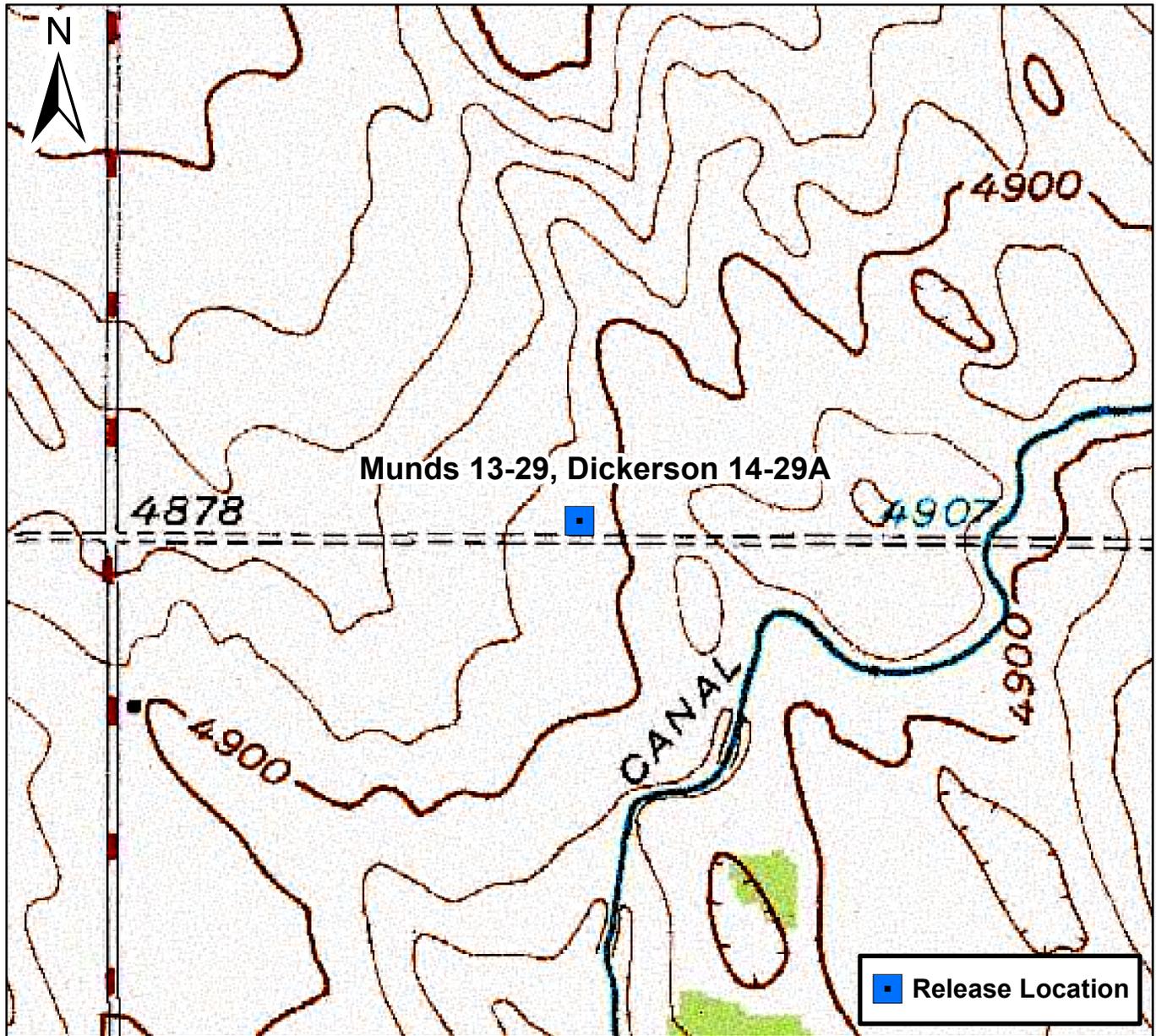


Figure 1

Site Location Map
 Munds 13-29, Dickerson 14-29A
 SESW S29 T4N R65W
 Weld County, Colorado





Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Temporary Monitoring Well Location
- Soil Vapor Extraction (SVE) Well Location (Collected via Trimble GPS)
- Water/Irrigation Line (Collected via Trimble GPS)
- Excavation Extent - 2019 (Collected via Trimble GPS)
- APC Line (Collected via Trimble GPS)
- Noble Line (Collected via Trimble GPS)
- Release Location

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Site infrastructure has been removed and is shown for illustrative purposes only

GPS – Global Positioning System

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2016

DATE:	7/9/2021
DESIGNED BY:	MG
DRAWN BY:	MG

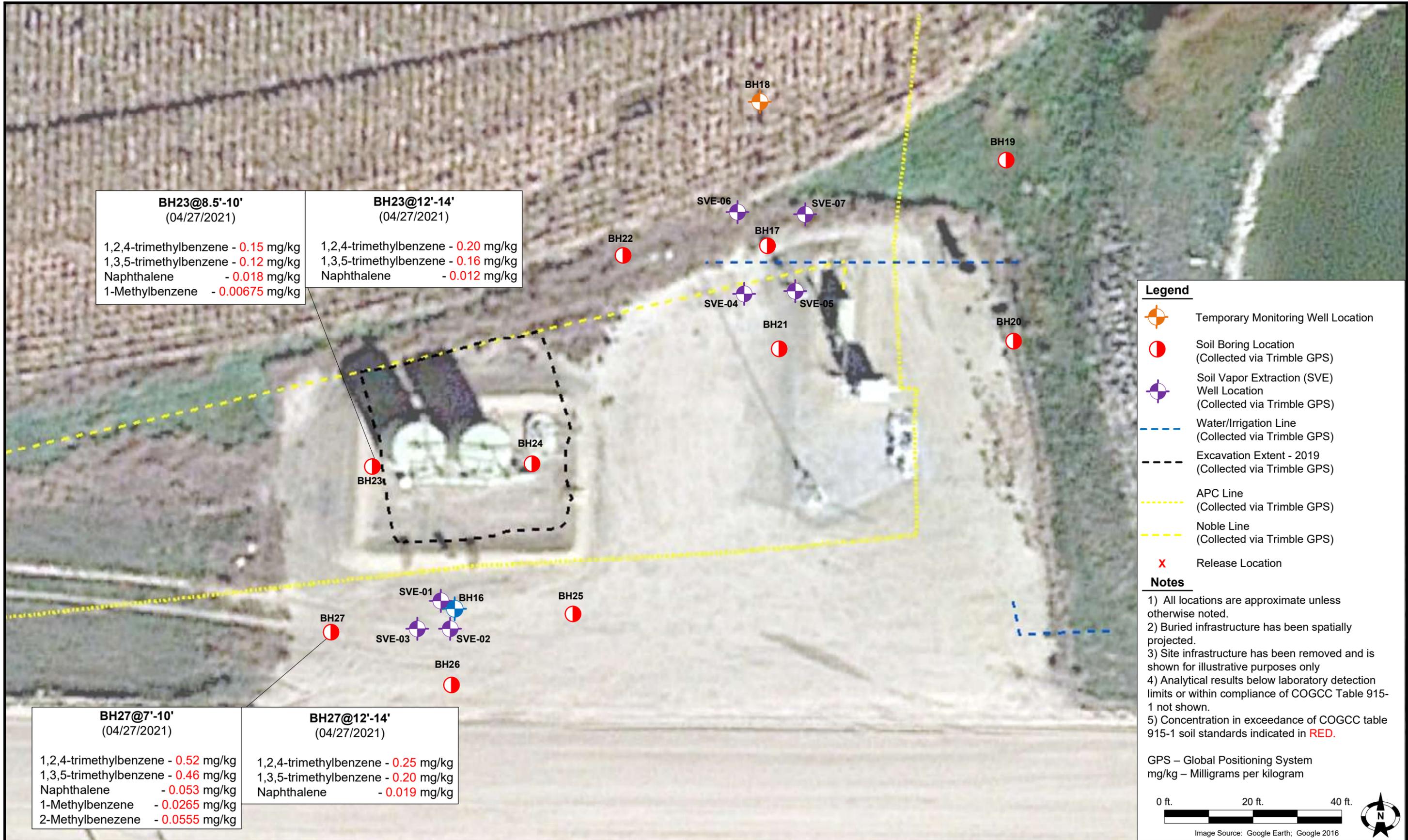
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Noble Energy, Inc. – DJ Basin
Munds 13-29, Dickerson 14-29A
 SESW, Section 29, Township 4 North, Range 65 West
 Weld County, Colorado

Site Overview Map

Figure
2



BH23@8.5'-10' (04/27/2021)	
1,2,4-trimethylbenzene	- 0.15 mg/kg
1,3,5-trimethylbenzene	- 0.12 mg/kg
Naphthalene	- 0.018 mg/kg
1-Methylbenzene	- 0.00675 mg/kg

BH23@12'-14' (04/27/2021)	
1,2,4-trimethylbenzene	- 0.20 mg/kg
1,3,5-trimethylbenzene	- 0.16 mg/kg
Naphthalene	- 0.012 mg/kg

BH27@7'-10' (04/27/2021)	
1,2,4-trimethylbenzene	- 0.52 mg/kg
1,3,5-trimethylbenzene	- 0.46 mg/kg
Naphthalene	- 0.053 mg/kg
1-Methylbenzene	- 0.0265 mg/kg
2-Methylbenzene	- 0.0555 mg/kg

BH27@12'-14' (04/27/2021)	
1,2,4-trimethylbenzene	- 0.25 mg/kg
1,3,5-trimethylbenzene	- 0.20 mg/kg
Naphthalene	- 0.019 mg/kg

- Legend**
- Temporary Monitoring Well Location
 - Soil Boring Location (Collected via Trimble GPS)
 - Soil Vapor Extraction (SVE) Well Location (Collected via Trimble GPS)
 - Water/Irrigation Line (Collected via Trimble GPS)
 - Excavation Extent - 2019 (Collected via Trimble GPS)
 - APC Line (Collected via Trimble GPS)
 - Noble Line (Collected via Trimble GPS)
 - Release Location

- Notes**
- 1) All locations are approximate unless otherwise noted.
 - 2) Buried infrastructure has been spatially projected.
 - 3) Site infrastructure has been removed and is shown for illustrative purposes only
 - 4) Analytical results below laboratory detection limits or within compliance of COGCC Table 915-1 not shown.
 - 5) Concentration in exceedance of COGCC table 915-1 soil standards indicated in RED.
- GPS – Global Positioning System
mg/kg – Milligrams per kilogram



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DRAWN BY:	MG

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SESW, Section 29, Township 4 North, Range 65 West
Weld County, Colorado

Soil Boring Analytical
Results Map
(04/27/2021)

Figure
3



Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Temporary Monitoring Well Location
- Water/Irrigation Line (Collected via Trimble GPS)
- Excavation Extent - 2019 (Collected via Trimble GPS)
- APC Line (Collected via Trimble GPS)
- Noble Line (Collected via Trimble GPS)
- Release Location
- Groundwater Elevation Contour (Dashed Where Inferred)
- 4818.39** Measured Groundwater Elevation—ft. amsl
- Approximate Groundwater Flow Direction

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Site infrastructure has been removed and is shown for illustrative purposes only

GPS – Global Positioning System
 Ft. amsl – Feet above mean sea level
 NM – Elevation Data Not Collected

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2016

DATE:	7/9/2021
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DRAWN BY:	MG



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Noble Energy, Inc. – DJ Basin
Munds 13-29, Dickerson 14-29A
 SESW, Section 29, Township 4 North, Range 65 West
 Weld County, Colorado

Groundwater Potentiometric
 Surface Map
 (06/15/2021)

Figure
 4

BH17	
Compound	04/07/21
Benzene (ug/L)	20
Toluene (ug/L)	3.0
Ethylbenzene (ug/L)	920
Total Xylenes (ug/L)	12,000
Naphthalene (ug/L)	21
1,2,4-Trimethylbenzene (ug/L)	150
1,3,5-Trimethylbenzene (ug/L)	180
Total Dissolved Solids (mg/L)	2,420
Chloride (mg/L)	735
Sulfate (mg/L)	518

BH16	
Compound	04/07/21
Benzene (ug/L)	750
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	69
Total Xylenes (ug/L)	430
Naphthalene (ug/L)	3.9
1,2,4-Trimethylbenzene (ug/L)	60
1,3,5-Trimethylbenzene (ug/L)	76
Total Dissolved Solids (mg/L)	1,740
Chloride (mg/L)	251
Sulfate (mg/L)	283

Legend

-  Monitoring Well Location (Collected via Trimble GPS)
-  Water/Irrigation Line (Collected via Trimble GPS)
-  Excavation Extent - 2019 (Collected via Trimble GPS)
-  APC Line (Collected via Trimble GPS)
-  Noble Line (Collected via Trimble GPS)
-  Release Location

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) **RED** value indicates concentration greater than COGCC table 915-1 groundwater standard (see table below)

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

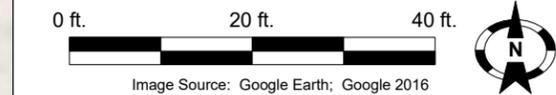


Image Source: Google Earth; Google 2016

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DRAWN BY:	MG

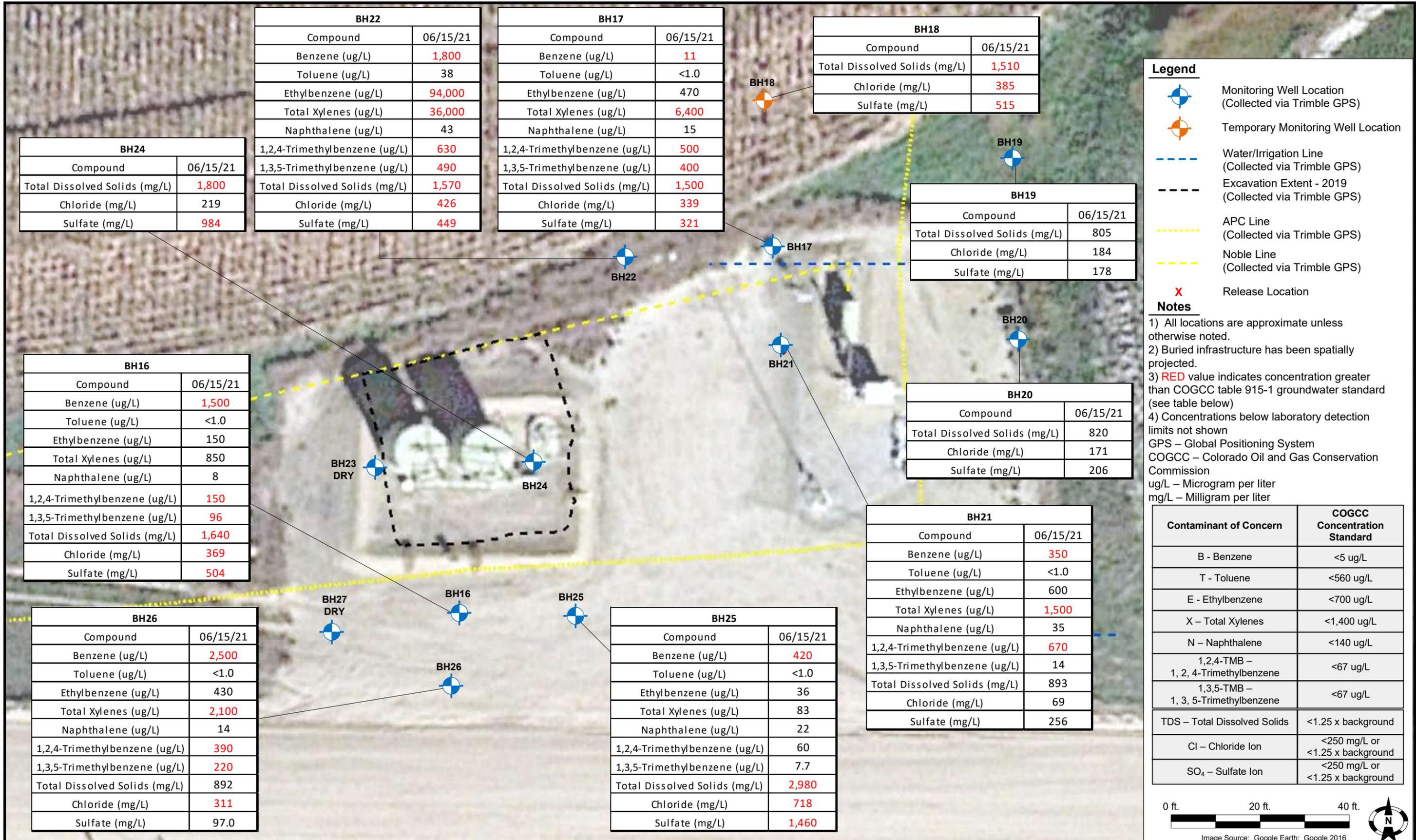


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Munds 13-29, Dickerson 14-29A
 SESW, Section 29, Township 4 North, Range 65 West
 Weld County, Colorado

Groundwater Analytical
 Results Map
 (04/07/2021)

Figure
 5A



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 DRAWN BY: MG



Noble Energy, Inc. – DJ Basin
Munds 13-29, Dickerson 14-29A
 SESW, Section 29, Township 4 North, Range 65 West
 Weld County, Colorado

Groundwater Analytical
 Results Map
 (06/15/2021)

Figure
 5B



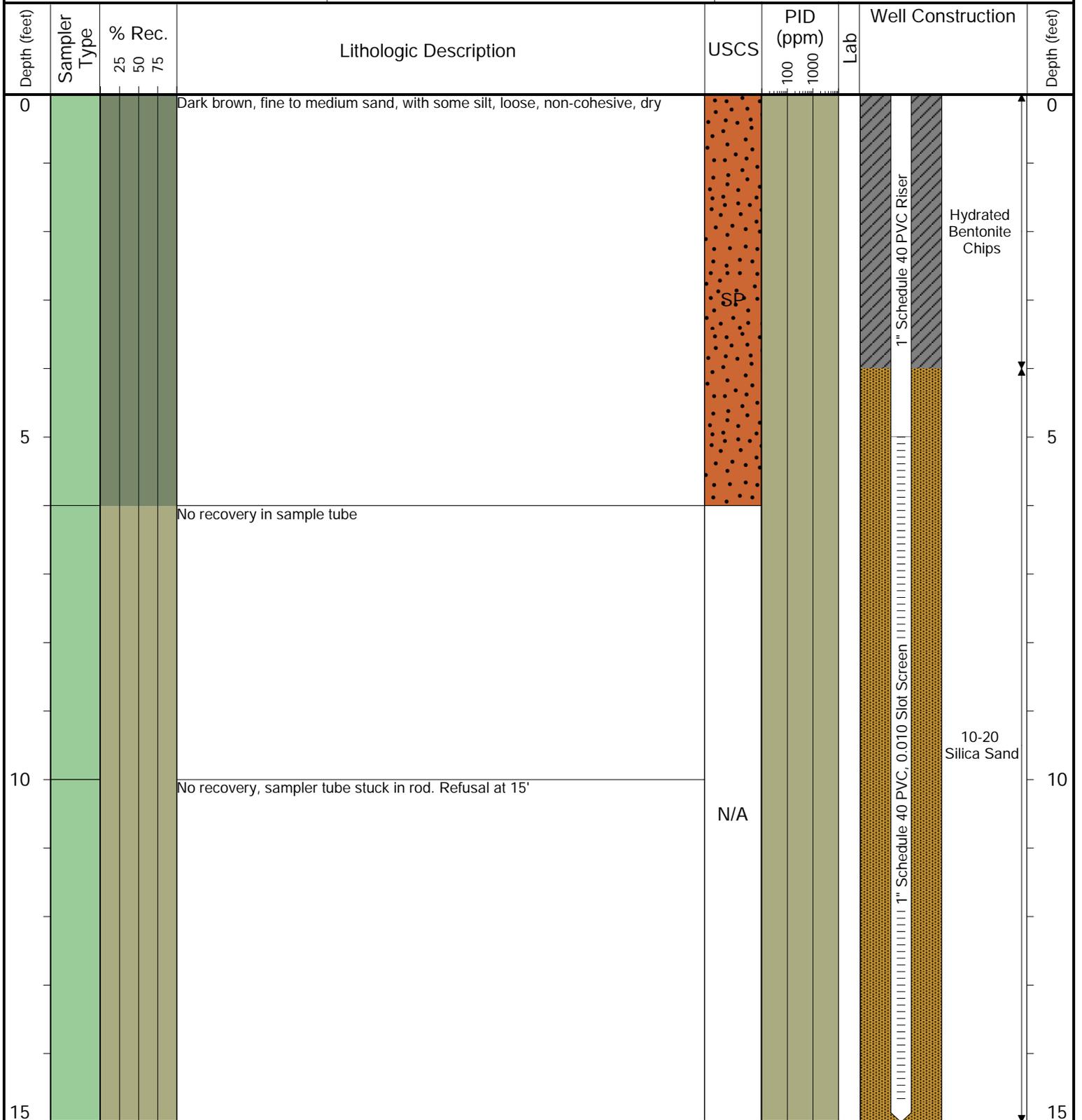
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 2/24/2021
 TOTAL WELL DEPTH (FT. BGS): 15
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH16

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276243
 EASTING (CO STATE PLANE): -104.690134
 CASING ELEVATION (FT. AMSL): 4887.839816
 GROUND ELEVATION (FT. AMSL): 4888.099816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Geotechnical Lab
- CME Continuous Sample Tube
- Analytical Chemistry Lab

Laboratory Sample Types:

- Geotechnical & Analytical Chemistry Lab



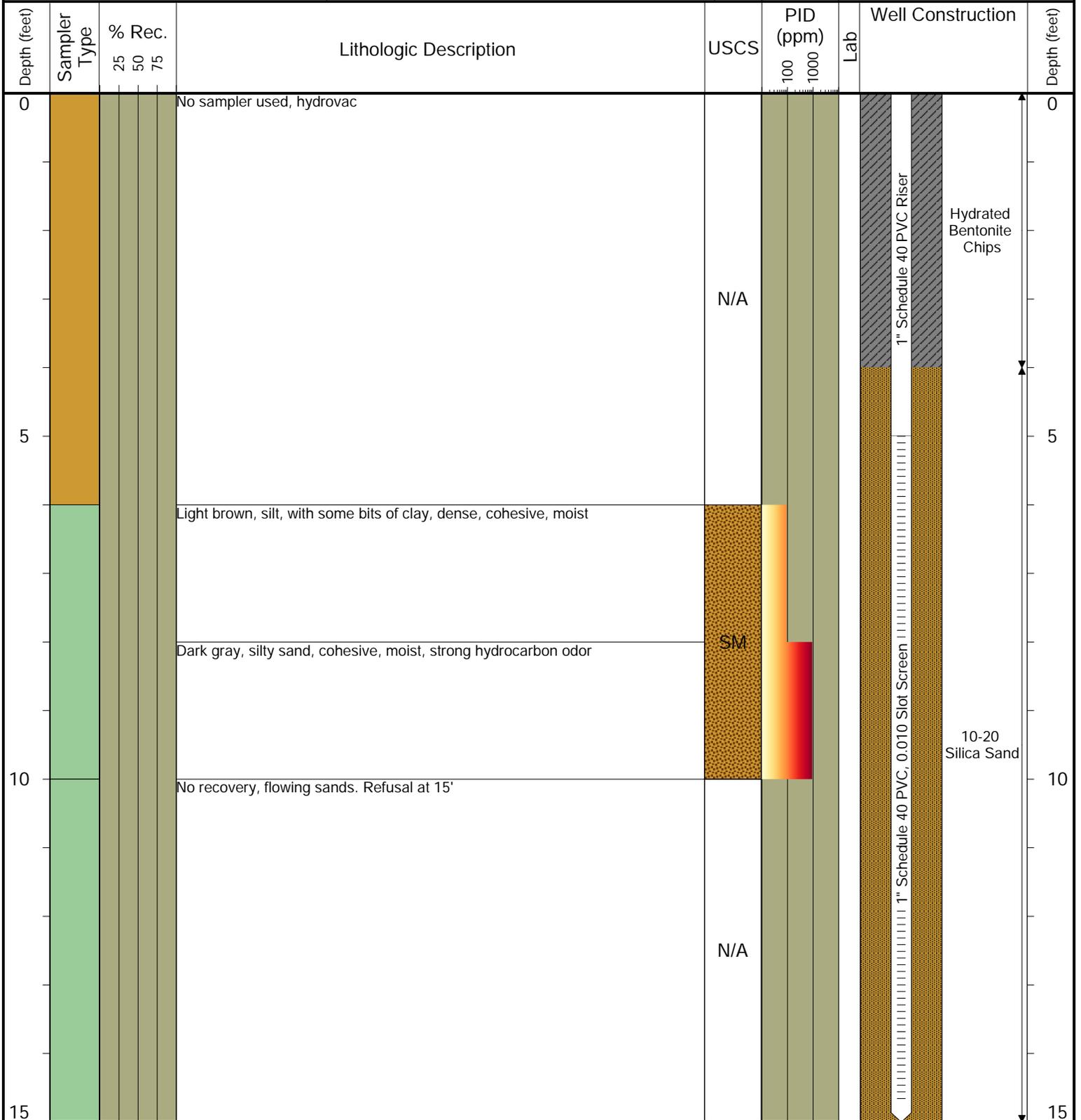
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 2/24/2021
 TOTAL WELL DEPTH (FT. BGS): 15
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH17

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276475
 EASTING (CO STATE PLANE): -104.689883
 CASING ELEVATION (FT. AMSL): 4890.499816
 GROUND ELEVATION (FT. AMSL): 4890.819816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



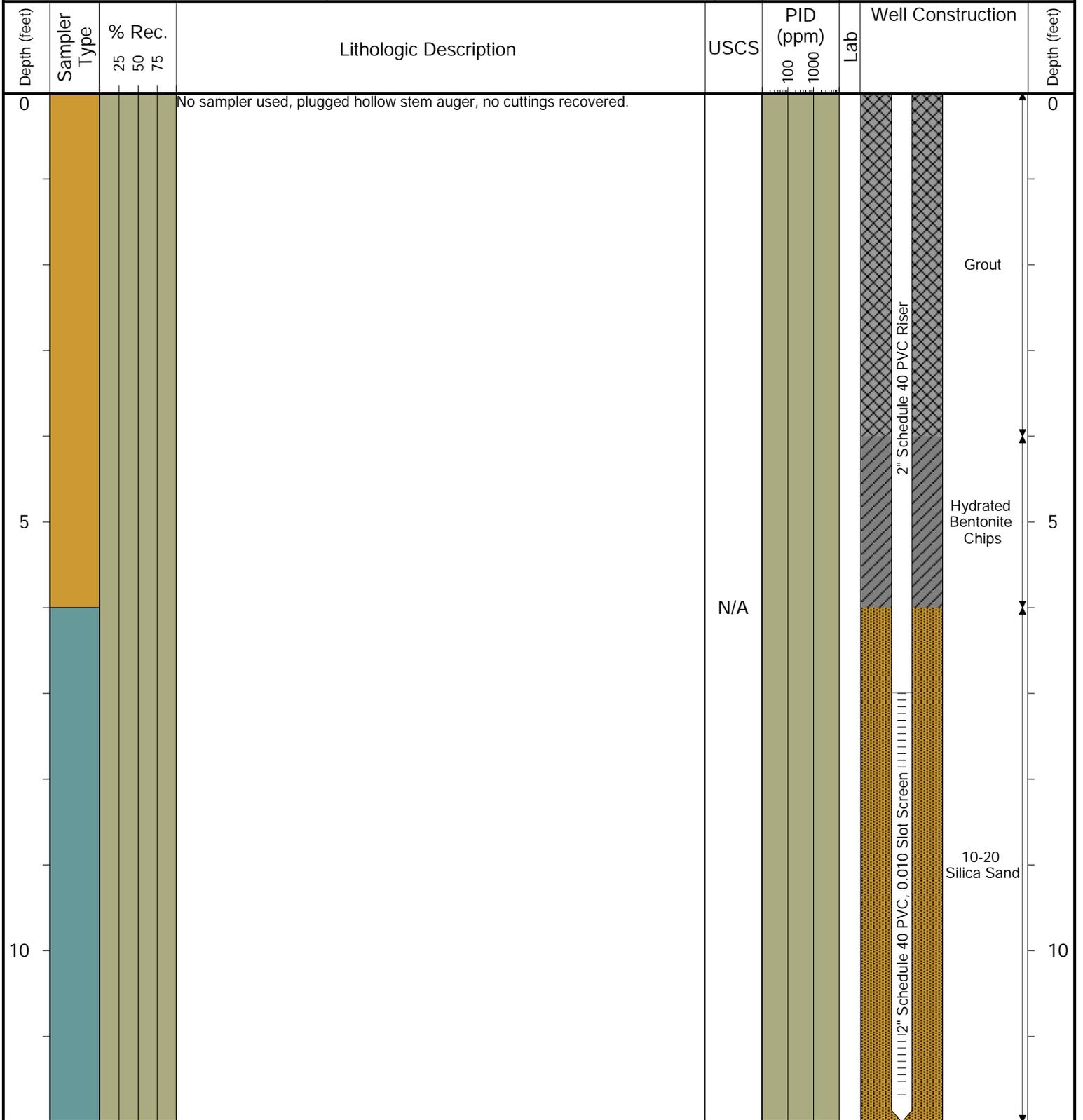
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE1

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.27625161
 EASTING (CO STATE PLANE): -104.690139562
 CASING ELEVATION (FT. AMSL): 4887.989816
 GROUND ELEVATION (FT. AMSL): 4888.259816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- CME Continuous Sample Tube
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



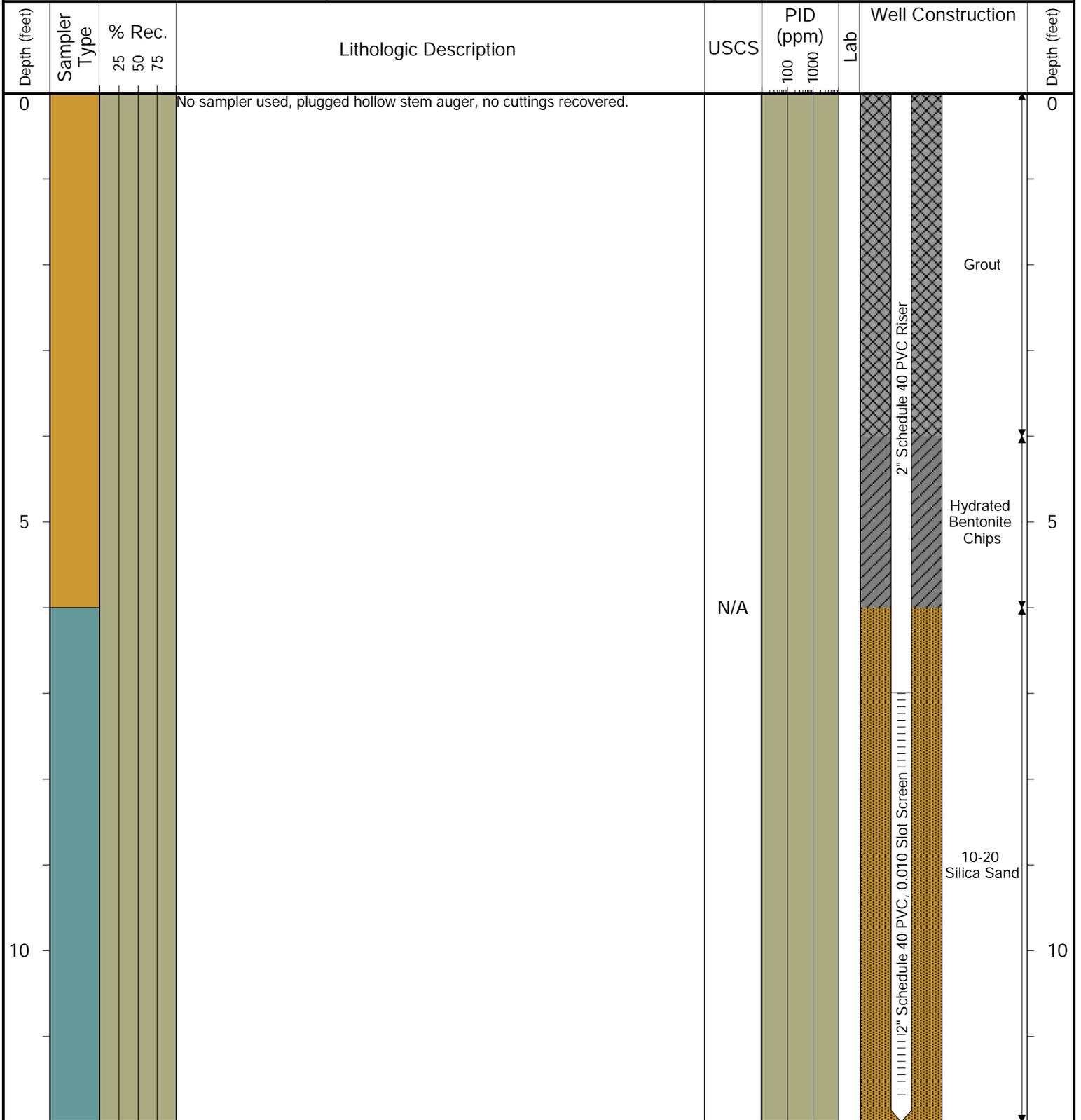
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE2

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.27623568
 EASTING (CO STATE PLANE): -104.690135685
 CASING ELEVATION (FT. AMSL): 4887.799816
 GROUND ELEVATION (FT. AMSL): 4887.959816



Drilling / Sample Method:
 Solid Stem Auger (light blue square)
 Hollow Stem Auger (dark blue square)
 Hydrovac (orange square)
 CME Continuous Sample Tube (green square)

Laboratory Sample Types:
 Geotechnical Lab (purple square)
 Analytical Chemistry Lab (yellow square)
 Geotechnical & Analytical Chemistry Lab (diagonal stripes square)



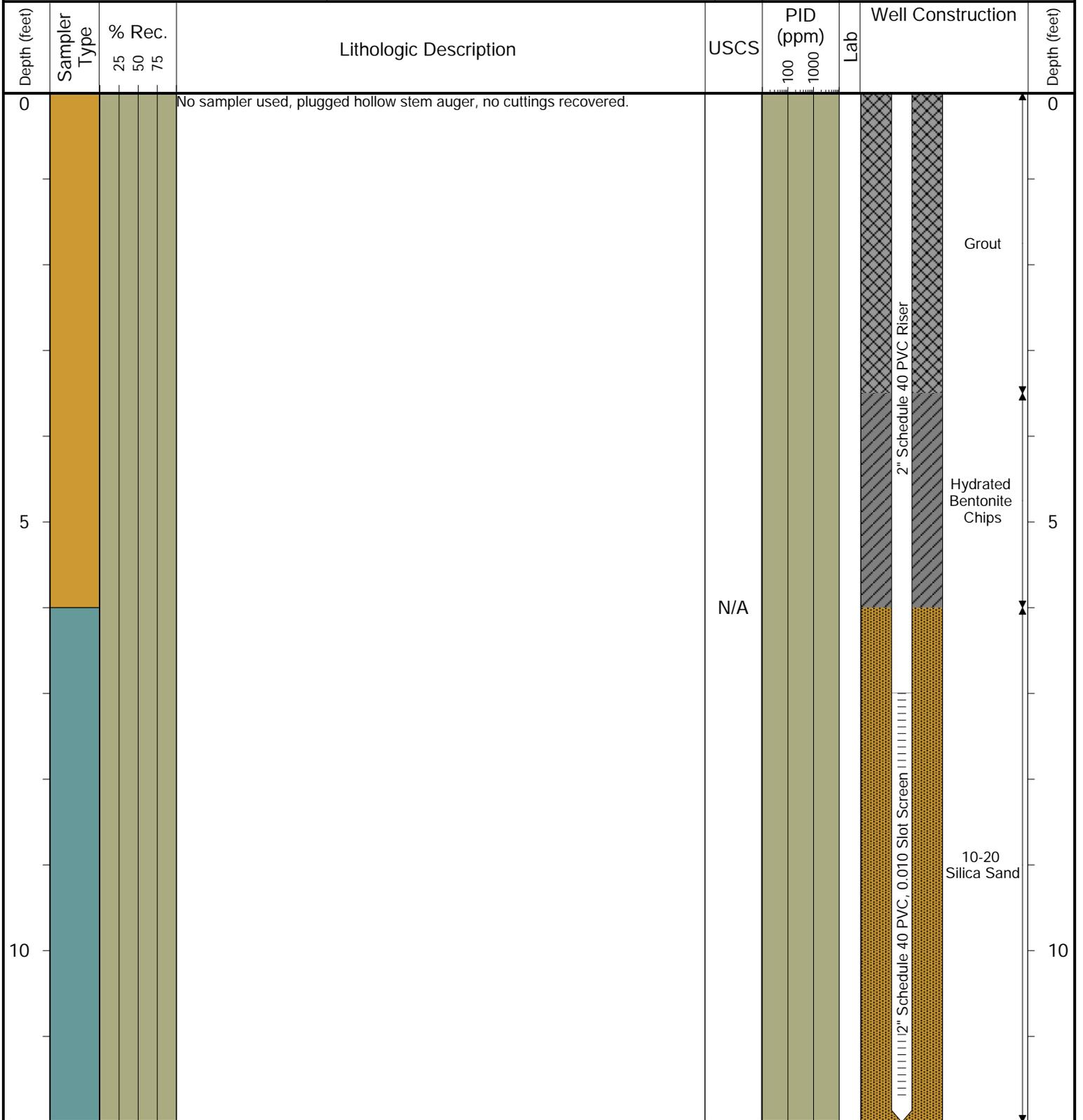
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE3

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276236499
 EASTING (CO STATE PLANE): -104.690160835
 CASING ELEVATION (FT. AMSL): 4887.649816
 GROUND ELEVATION (FT. AMSL): 4888.039816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- CME Continuous Sample Tube
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



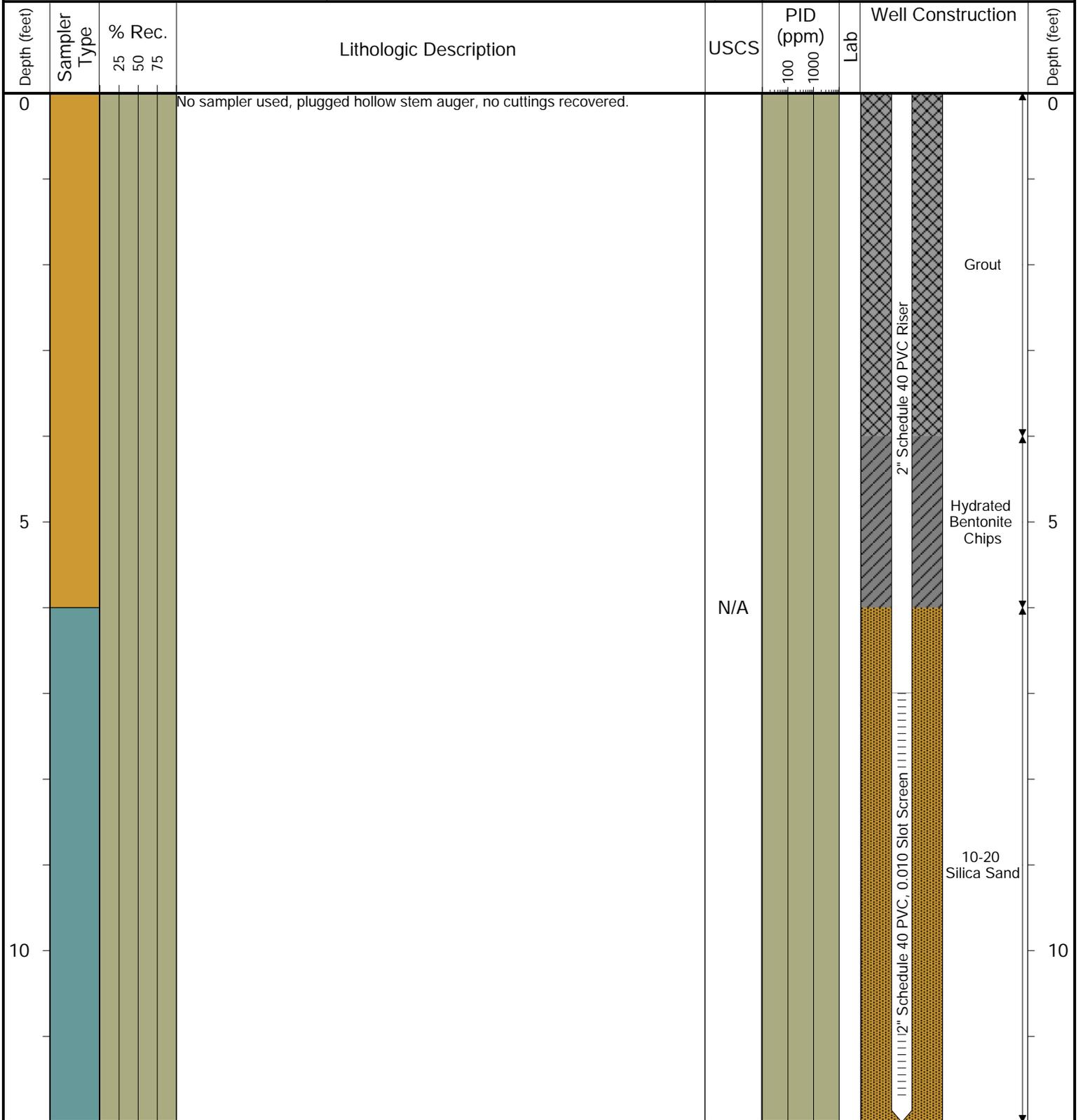
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE4

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276443129
 EASTING (CO STATE PLANE): -104.689894936
 CASING ELEVATION (FT. AMSL): 4890.169816
 GROUND ELEVATION (FT. AMSL): 4890.549816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- CME Continuous Sample Tube
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



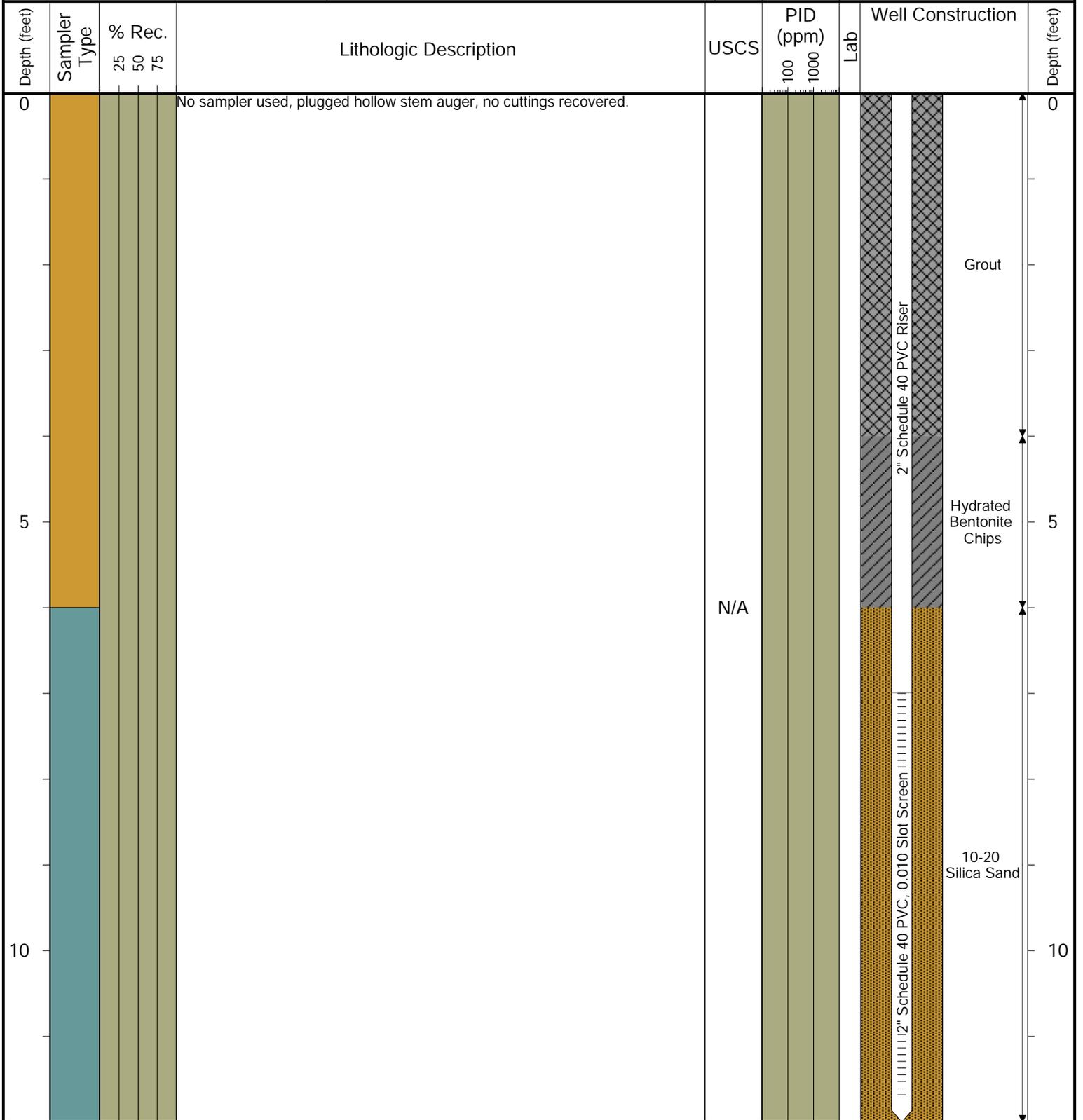
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE5

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276443385
 EASTING (CO STATE PLANE): -104.689855247
 CASING ELEVATION (FT. AMSL): 4890.879816
 GROUND ELEVATION (FT. AMSL): 4891.169816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- CME Continuous Sample Tube
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



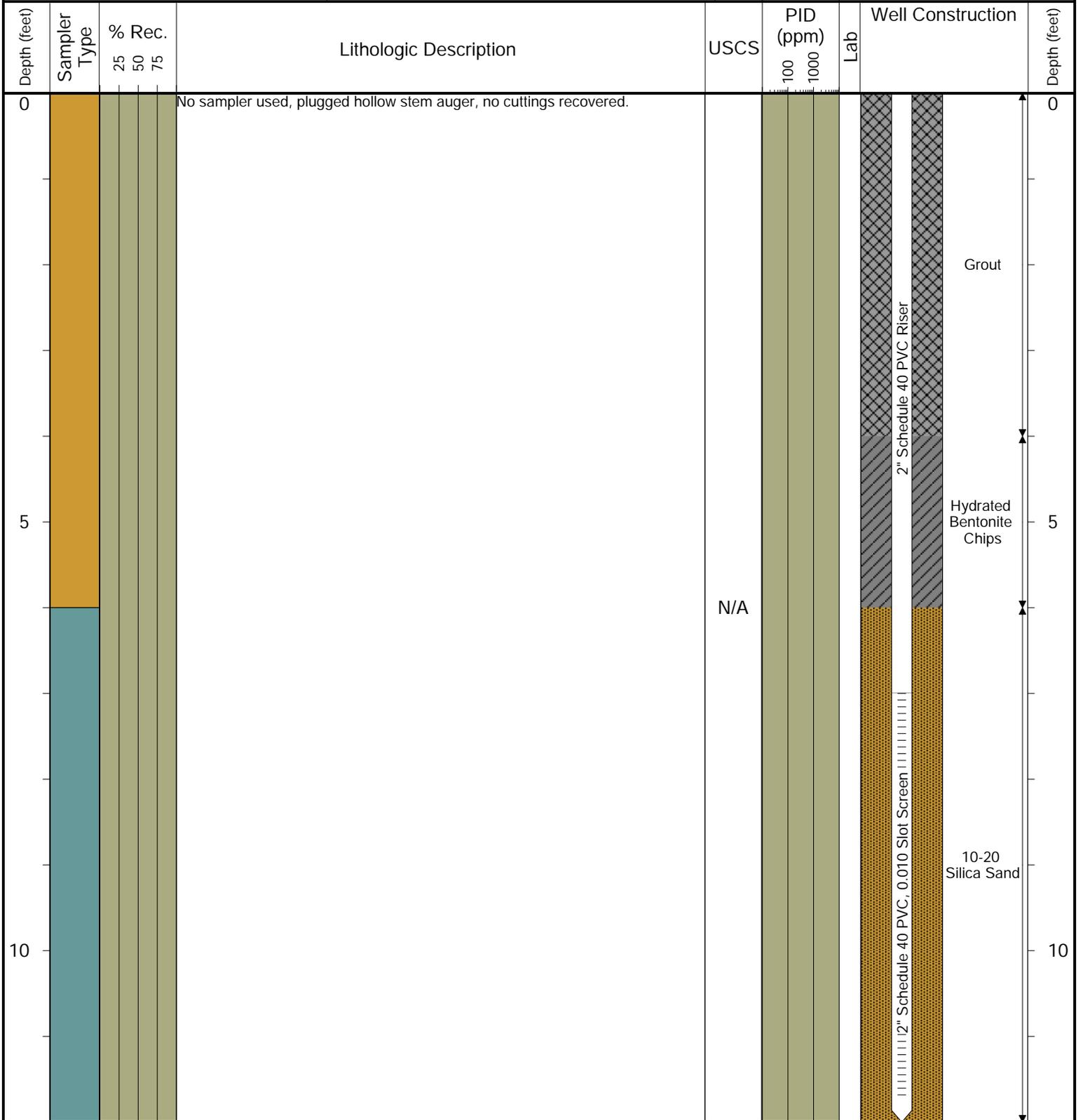
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE6

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276492575
 EASTING (CO STATE PLANE): -104.689900526
 CASING ELEVATION (FT. AMSL): 4889.819816
 GROUND ELEVATION (FT. AMSL): 4890.239816



Drilling / Sample Method:
 Solid Stem Auger (light blue square)
 Hollow Stem Auger (dark blue square)
 Hydrovac (orange square)
 CME Continuous Sample Tube (green square)

Laboratory Sample Types:
 Geotechnical Lab (purple square)
 Analytical Chemistry Lab (yellow square)
 Geotechnical & Analytical Chemistry Lab (diagonal stripes square)



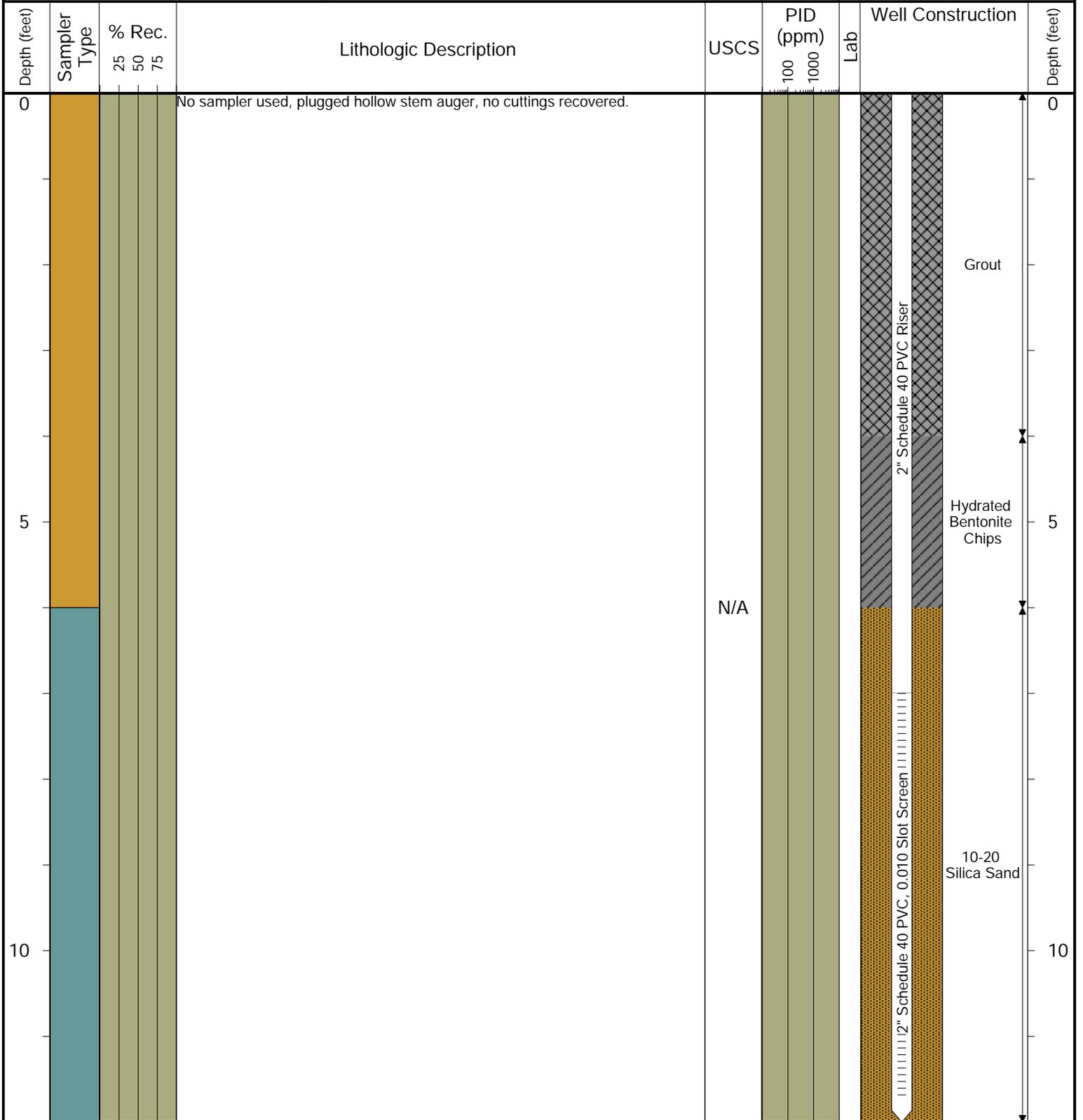
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Tanner Cook
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 8.25
 DATE STARTED - COMPLETED: 3/4/2021
 TOTAL WELL DEPTH (FT. BGS): 12
 DEPTH TO WATER (FT. BGS): Not Encountered ▼

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: SVE7

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276491248
 EASTING (CO STATE PLANE): -104.689847096
 CASING ELEVATION (FT. AMSL): 4890.759816
 GROUND ELEVATION (FT. AMSL): 4891.059816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- CME Continuous Sample Tube
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.

LOGGED BY: Max Garza

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman Geosciences, Inc.

DRILLING EQUIPMENT: AMS Powerprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 4/26/2021

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 5

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH19

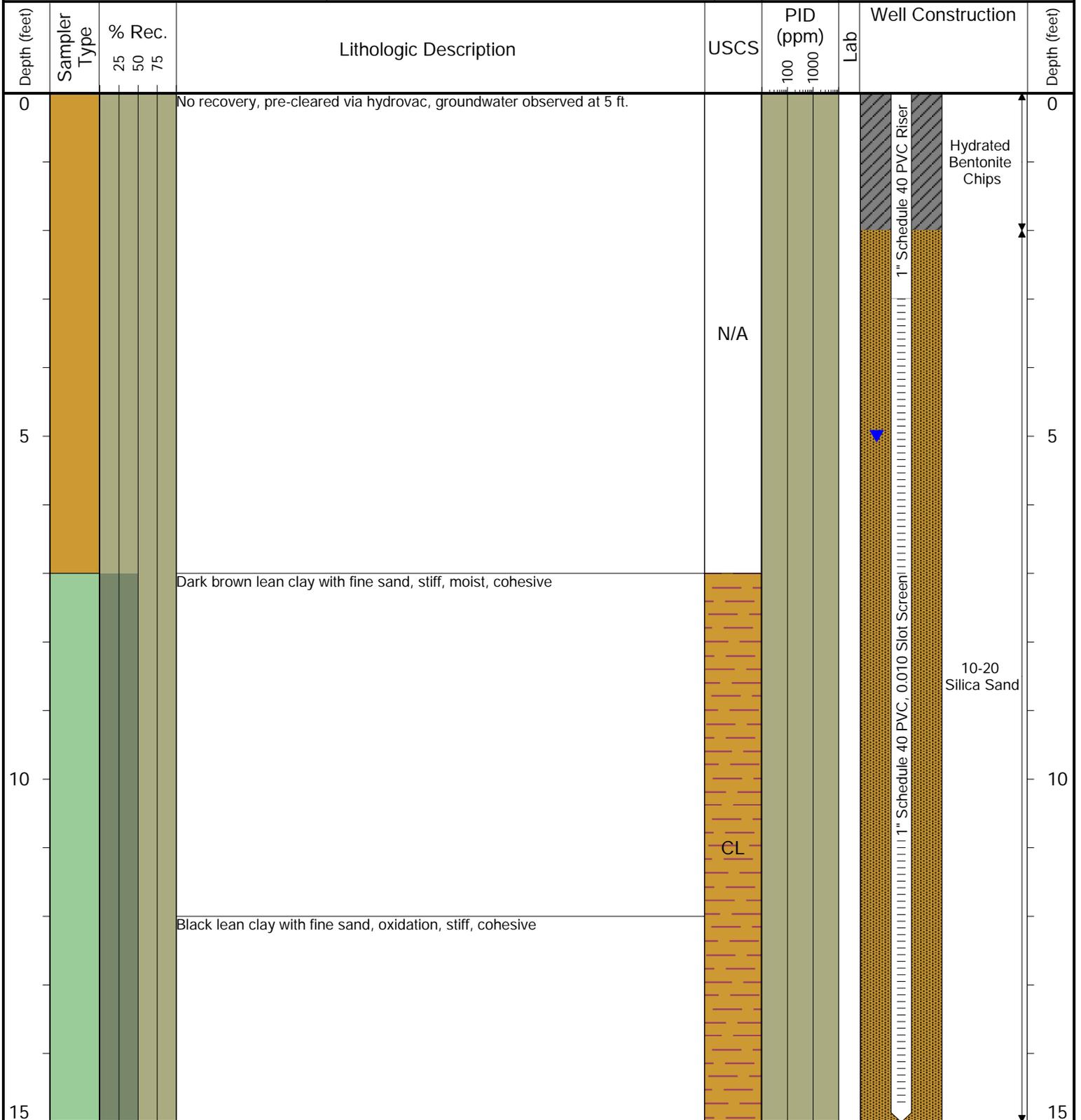
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.276525255

EASTING (CO STATE PLANE): -104.68968273

CASING ELEVATION (FT. AMSL): 4892.109816

GROUND ELEVATION (FT. AMSL): 4892.459816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.

LOGGED BY: Max Garza

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman Geosciences, Inc.

DRILLING EQUIPMENT: AMS Powerprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 4/26/2021

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 5

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH20

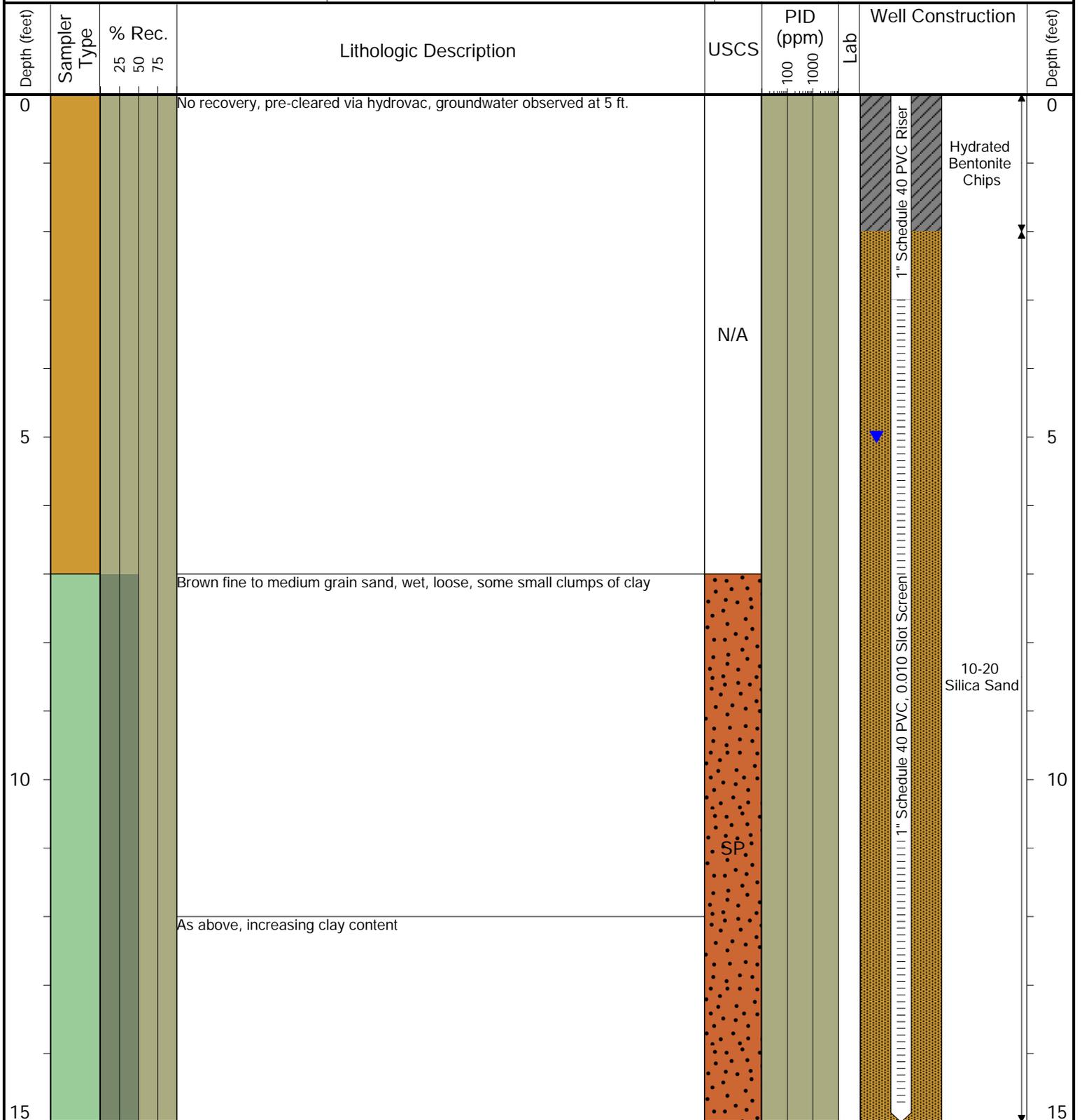
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.276413795

EASTING (CO STATE PLANE): -104.689677341

CASING ELEVATION (FT. AMSL): 4892.659816

GROUND ELEVATION (FT. AMSL): 4892.829816



Drilling / Sample Method:

- Solid Stem Auger
- Geo Macro Core
- Hydrovac
- Hollow Stem Auger

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



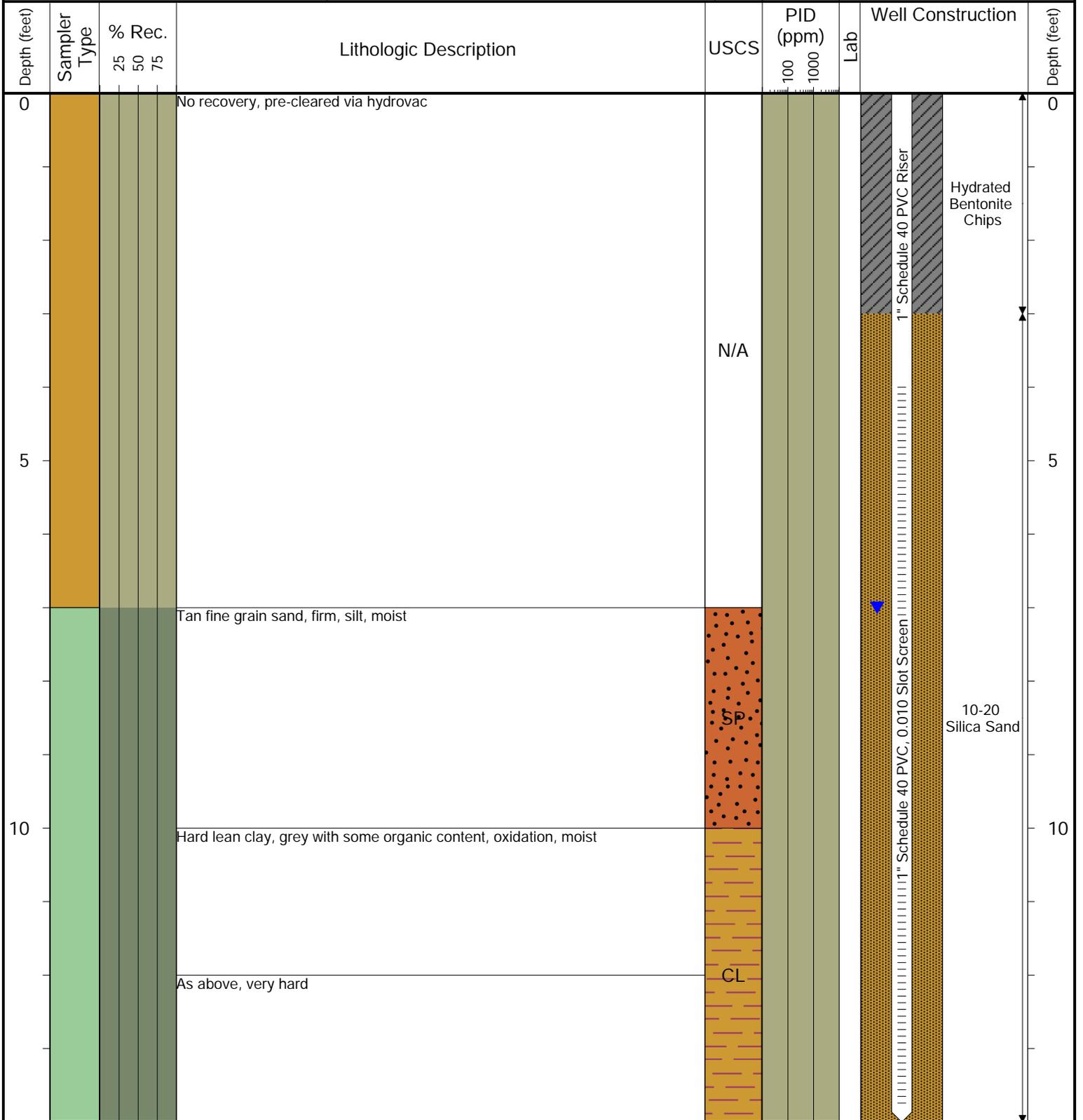
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Jake Whritenour
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 4/26/2021
 TOTAL WELL DEPTH (FT. BGS): 14
 DEPTH TO WATER (FT. BGS): 7

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH21

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276409264
 EASTING (CO STATE PLANE): -104.689866887
 CASING ELEVATION (FT. AMSL): 4890.859816
 GROUND ELEVATION (FT. AMSL): 4891.079816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.

LOGGED BY: Max Garza

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman Geosciences, Inc.

DRILLING EQUIPMENT: AMS Powerprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 4/28/2021

TOTAL WELL DEPTH (FT. BGS): 14

DEPTH TO WATER (FT. BGS): 5

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH22

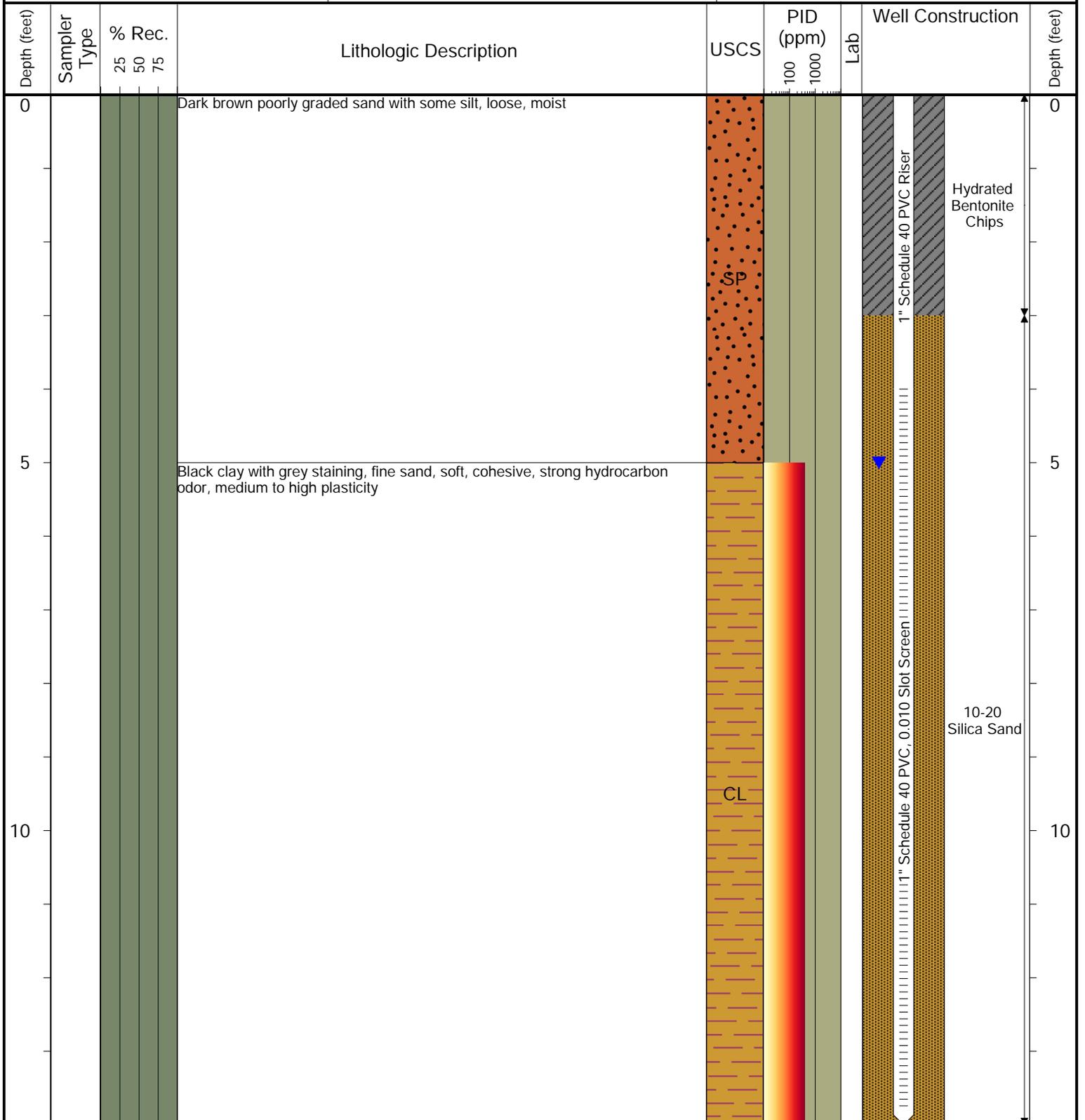
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.276466443

EASTING (CO STATE PLANE): -104.689993789

CASING ELEVATION (FT. AMSL): 4888.829816

GROUND ELEVATION (FT. AMSL): 4889.049816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



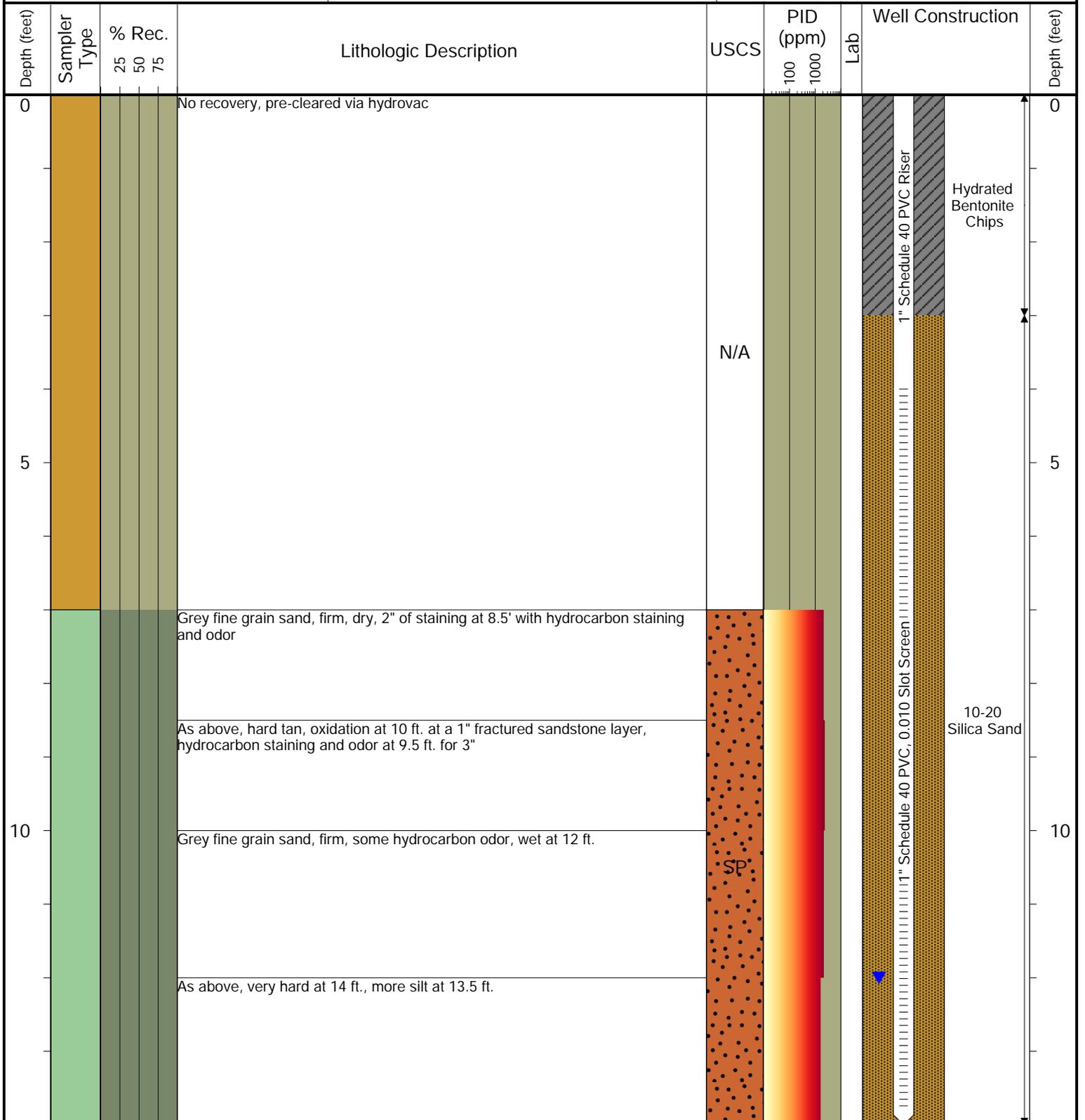
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Jake Whritenour
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 4/27/2021
 TOTAL WELL DEPTH (FT. BGS): 14
 DEPTH TO WATER (FT. BGS): 12

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH23

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.27633734
 EASTING (CO STATE PLANE): -104.690196966
 CASING ELEVATION (FT. AMSL): 4886.999816
 GROUND ELEVATION (FT. AMSL): 4887.339816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.

LOGGED BY: Max Garza

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman Geosciences, Inc.

DRILLING EQUIPMENT: AMS Powerprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 4/26/2021

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH TO WATER (FT. BGS): 7

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH24

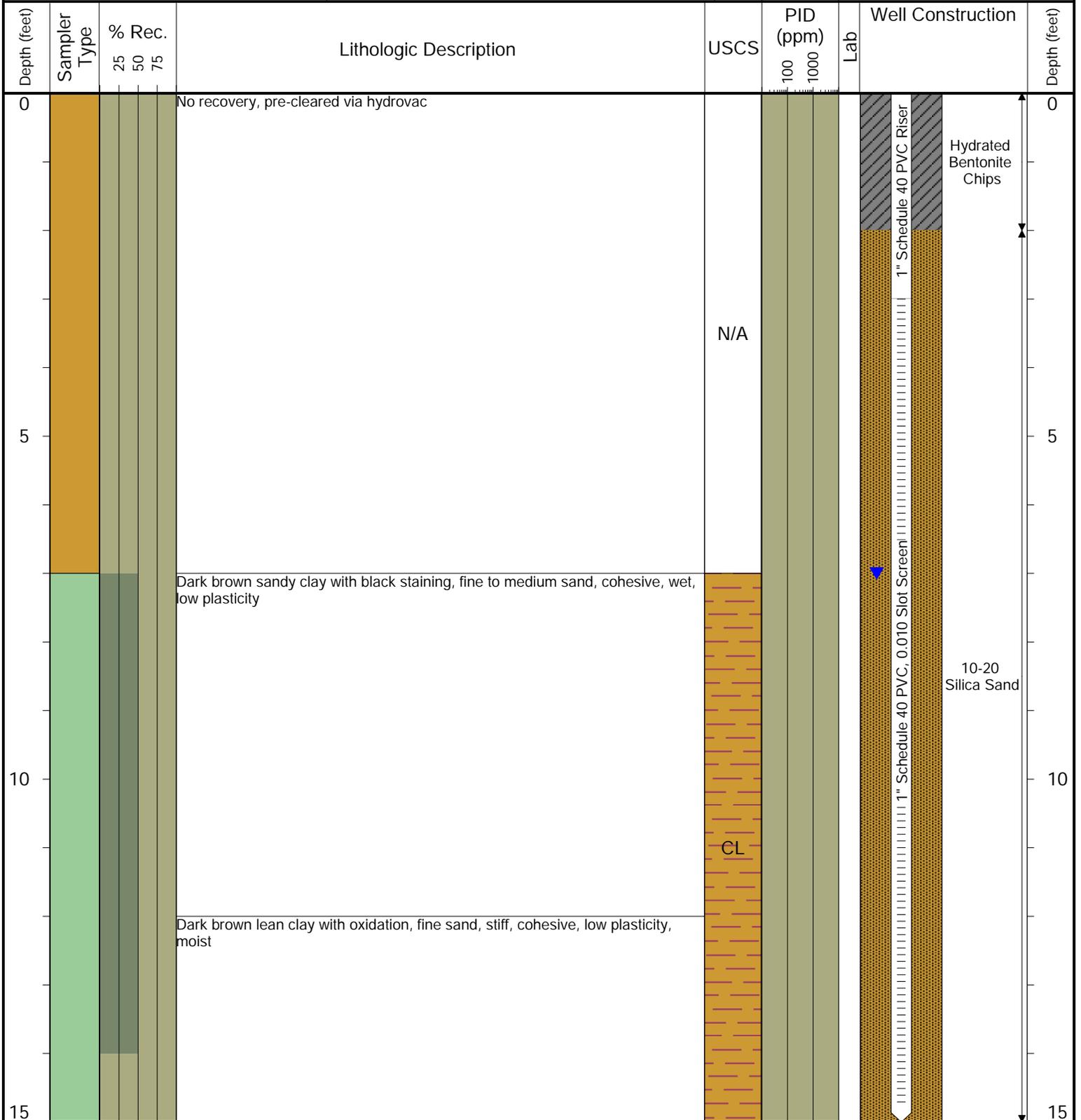
LOCATION: Weld County, Colorado

NORTHING (CO STATE PLANE): 40.276338205

EASTING (CO STATE PLANE): -104.690067564

CASING ELEVATION (FT. AMSL): 4888.539816

GROUND ELEVATION (FT. AMSL): 4888.709816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



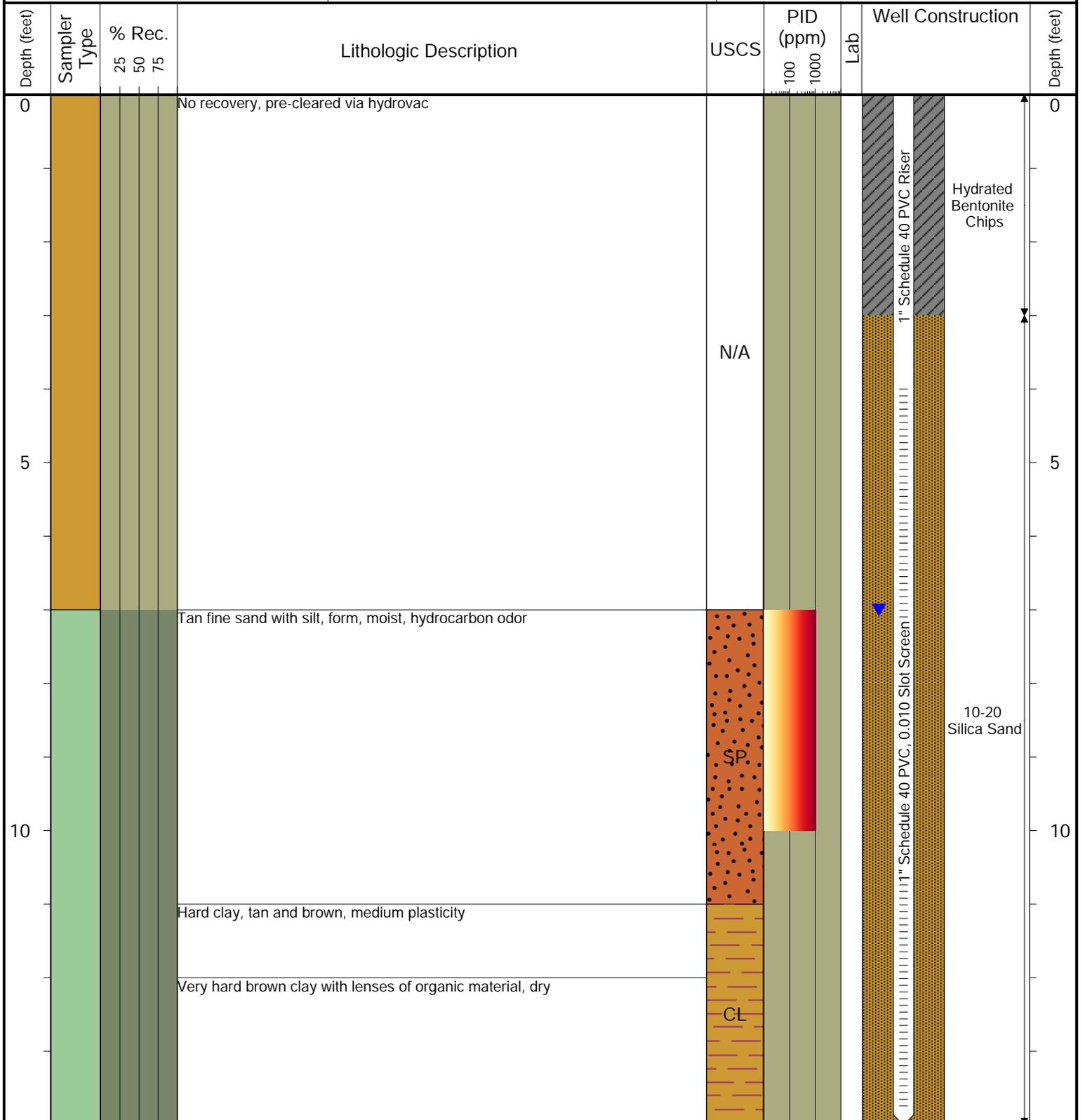
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Jake Whritenour
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 4/27/2021
 TOTAL WELL DEPTH (FT. BGS): 14
 DEPTH TO WATER (FT. BGS): 7

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH25

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276245411
 EASTING (CO STATE PLANE): -104.690035583
 CASING ELEVATION (FT. AMSL): 4889.279816
 GROUND ELEVATION (FT. AMSL): 4889.539816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



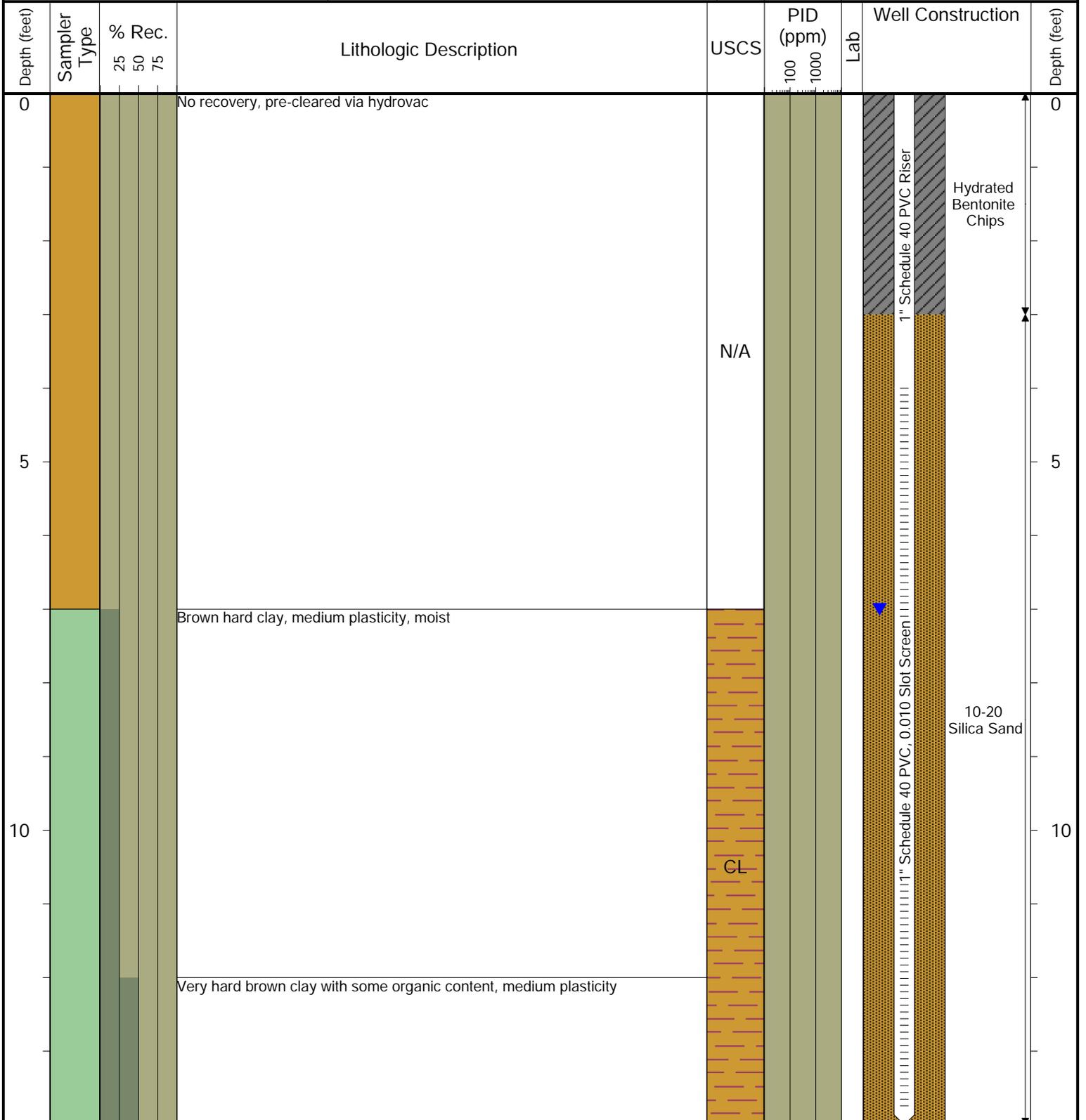
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Jake Whritenour
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 4/27/2021
 TOTAL WELL DEPTH (FT. BGS): 14
 DEPTH TO WATER (FT. BGS): 7

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH26

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276201401
 EASTING (CO STATE PLANE): -104.690133943
 CASING ELEVATION (FT. AMSL): 4888.149816
 GROUND ELEVATION (FT. AMSL): 4888.309816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



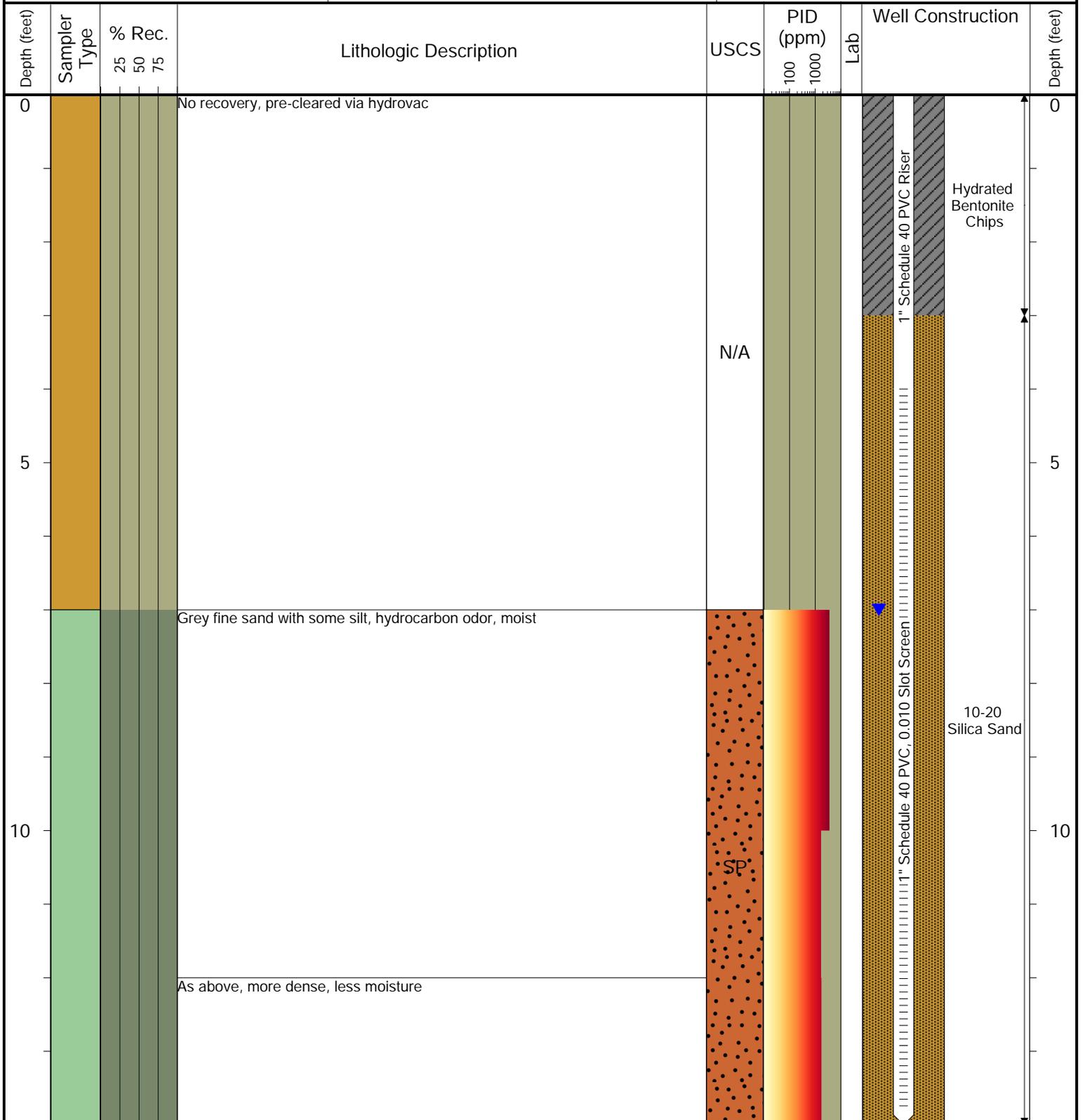
6855 W. 119th Avenue
Broomfield, CO 80020

CLIENT: Noble Energy, Inc.
 LOGGED BY: Jake Whritenour
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman Geosciences, Inc.
 DRILLING EQUIPMENT: AMS Powerprobe
 DRILL BIT SIZE (INCHES): 2.375
 DATE STARTED - COMPLETED: 4/27/2021
 TOTAL WELL DEPTH (FT. BGS): 14
 DEPTH TO WATER (FT. BGS): 7

Munds 13-29, Dickerson 14-29A

BORING / WELL ID: BH27

LOCATION: Weld County, Colorado
 NORTHING (CO STATE PLANE): 40.276235602
 EASTING (CO STATE PLANE): -104.690231663
 CASING ELEVATION (FT. AMSL): 4887.089816
 GROUND ELEVATION (FT. AMSL): 4887.249816



Drilling / Sample Method:

- Solid Stem Auger
- Hydrovac
- Hollow Stem Auger
- Geo Macro Core

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 09, 2021

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

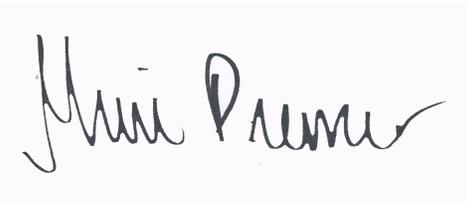
Broomfield, CO 80020

RE: Noble - Munds 13-29, Dickerson 14-29A

Work Order #2104123

Enclosed are the results of analyses for samples received by Summit Scientific on 04/07/21 18:30. 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" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury
President



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH16	2104123-01	Water	04/07/21 13:35	04/07/21 18:30
BH17	2104123-02	Water	04/07/21 13:40	04/07/21 18:30

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.

2104123

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

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: 979-255-4235 Project Name: *Munds 13-29, Dickerson 14-29A*
 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	BTEX	Naphthalene	Chlorides/Sulfates	TDS	1,2,4 & 1,3,5-trimethylbenzene		
1	BH16	4/7/21	13 35	4	X				X				X	X	X	X	X		
2	BH17	↓	13 40	↓	↓				↓				↓	↓	↓	↓	↓		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>[Signature]</i> Date/Time: 1510 4/7/21	Received by: Tasman's Lock Box Date/Time: 1510 4/7/21	Turn Around Time (Check) Same Day ___ 72 hours 24 hours ___ Standard <input checked="" type="checkbox"/> 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 4/7/21 1830	Received by: <i>Jacob Bruns</i> Date/Time: 4/7/21 1830	Sample Integrity: 5	
Relinquished by:	Received by:	Temperature Upon Receipt: <u>5</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order **2104123**

Client: Noble / Tasman Client Project ID: Munds 13-29, Dickerson 14-29A

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

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

Temp (°C)	<u>5</u>
-----------	----------

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"/>	<u>On ice</u>
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"/>	<u>HCl</u>
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.

JB
Custodian Printed Name or Initials

John B...
Signature of Custodian

4/7/21 1950
Date/Time



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

BH16
2104123-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	750	100	ug/l	100	BED0130	04/08/21	04/09/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	69	1.0	"	"	"	"	"	"	
Xylenes (total)	430	2.0	"	"	"	"	"	"	
Naphthalene	3.9	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	60	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	76	1.0	"	"	"	"	"	"	

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	283	60.0	mg/L	200	BED0147	04/08/21	04/09/21	EPA 300.0	
Chloride	251	12.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1740	10.0	mg/L	1	BED0126	04/08/21	04/08/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/09/21 16:33

BH17
2104123-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	20	1.0	ug/l	1	BED0130	04/08/21	04/09/21	EPA 8260B	
Toluene	3.0	1.0	"	"	"	"	"	"	
Ethylbenzene	920	100	"	100	"	"	"	"	
Xylenes (total)	12000	200	"	"	"	"	"	"	
Naphthalene	21	1.0	"	1	"	"	"	"	
1,2,4-Trimethylbenzene	150	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	180	1.0	"	"	"	"	"	"	

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	518	60.0	mg/L	200	BED0147	04/08/21	04/09/21	EPA 300.0	
Chloride	735	12.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2420	10.0	mg/L	1	BED0126	04/08/21	04/08/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/09/21 16:33

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 BED0130 - EPA 5030 Water MS

Blank (BED0130-BLK1)

Prepared & Analyzed: 04/08/21

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.7		"	13.3		103		23-173			
<i>Surrogate: Toluene-d8</i>	13.0		"	13.3		97.3		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.0		"	13.3		97.2		21-167			

LCS (BED0130-BS1)

Prepared & Analyzed: 04/08/21

Benzene	32.6	1.0	ug/l	33.3		97.7		51-132			
Toluene	37.6	1.0	"	33.3		113		51-138			
Ethylbenzene	41.8	1.0	"	33.3		125		58-146			
m,p-Xylene	78.4	2.0	"	66.7		118		57-144			
o-Xylene	40.8	1.0	"	33.3		122		53-146			
Naphthalene	38.7	1.0	"	33.3		116		70-130			
1,2,4-Trimethylbenzene	31.3	1.0	"	33.3		93.9		70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3		128		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.1		"	13.3		98.5		23-173			
<i>Surrogate: Toluene-d8</i>	13.4		"	13.3		100		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.3		21-167			

Matrix Spike (BED0130-MS1)

Source: 2104072-01

Prepared & Analyzed: 04/08/21

Benzene	32.5	1.0	ug/l	33.3	ND	97.5		34-141			
Toluene	38.1	1.0	"	33.3	ND	114		27-151			
Ethylbenzene	41.4	1.0	"	33.3	ND	124		29-160			
m,p-Xylene	78.0	2.0	"	66.7	ND	117		20-166			
o-Xylene	40.1	1.0	"	33.3	ND	120		33-159			
Naphthalene	42.8	1.0	"	33.3	ND	128		70-130			
1,2,4-Trimethylbenzene	30.5	1.0	"	33.3	ND	91.6		70-130			
1,3,5-Trimethylbenzene	42.2	1.0	"	33.3	ND	127		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.1		"	13.3		98.0		23-173			
<i>Surrogate: Toluene-d8</i>	13.5		"	13.3		101		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.2		21-167			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/09/21 16:33

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

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

Batch BED0130 - EPA 5030 Water MS

Matrix Spike Dup (BED0130-MSD1)	Source: 2104072-01			Prepared & Analyzed: 04/08/21						
Benzene	30.0	1.0	ug/l	33.3	ND	90.1	34-141	7.87	30	
Toluene	35.0	1.0	"	33.3	ND	105	27-151	8.29	30	
Ethylbenzene	41.7	1.0	"	33.3	ND	125	29-160	0.890	30	
m,p-Xylene	79.0	2.0	"	66.7	ND	118	20-166	1.21	30	
o-Xylene	40.7	1.0	"	33.3	ND	122	33-159	1.61	30	
Naphthalene	42.9	1.0	"	33.3	ND	129	70-130	0.280	30	
1,2,4-Trimethylbenzene	31.3	1.0	"	33.3	ND	93.9	70-130	2.46	30	
1,3,5-Trimethylbenzene	43.0	1.0	"	33.3	ND	129	70-130	1.97	30	
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.3		92.0	23-173			
Surrogate: Toluene-d8	12.2		"	13.3		91.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/09/21 16:33

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BED0147 - General Preparation

Blank (BED0147-BLK1)

Prepared & Analyzed: 04/08/21

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

LCS (BED0147-BS1)

Prepared & Analyzed: 04/08/21

Sulfate	15.2	0.300	mg/L	15.0	101	90-110				
Chloride	2.95	0.0600	"	3.00	98.4	90-110				

Duplicate (BED0147-DUP1)

Source: 2104073-01

Prepared & Analyzed: 04/08/21

Sulfate	61.8	60.0	mg/L	68.2			9.85	20		
Chloride	174	12.0	"	173			0.461	20		

Matrix Spike (BED0147-MS1)

Source: 2104073-01

Prepared & Analyzed: 04/08/21

Chloride	879	12.0	mg/L	600	173	118	80-120			
Sulfate	3300	60.0	"	3000	68.2	108	80-120			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

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 BED0126 - General Preparation

Blank (BED0126-BLK1)

Prepared & Analyzed: 04/08/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BED0126-DUP1)

Source: 2104118-01

Prepared & Analyzed: 04/08/21

Total Dissolved Solids 596 10.0 mg/L 596 0.00 20

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

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

May 06, 2021

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Munds 13-29, Dickerson 14-29A

Work Order #2104427

Enclosed are the results of analyses for samples received by Summit Scientific on 04/27/21 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH23@8.5-10'	2104427-01	Soil	04/27/21 09:30	04/27/21 17:45
BH23@12-14'	2104427-02	Soil	04/27/21 09:45	04/27/21 17:45
BH27@7-10'	2104427-03	Soil	04/27/21 13:00	04/27/21 17:45
BH27@12-14'	2104427-04	Soil	04/27/21 13:30	04/27/21 17:45

Summit Scientific

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Sample Receipt Checklist

S2 Work Order 2104427

Client: Tasman / Noble Client Project ID: Munds 13-29, Dickerson 14-29A

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

H.D. P.U. FedEx UPS USPS

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

Temp (°C)	<u>4</u>
-----------	----------

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.	✓			<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
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 ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? 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 ⁽¹⁾ ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

JB
Custodian Printed Name or Initials

John B...
Signature of Custodian

4/27/21 1850
Date/Time



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

BH23@8.5-10'
2104427-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BED0517	04/30/21	05/02/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.012	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.15	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.12	0.0050		"	"	"	"	"	"	
Naphthalene	0.018	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BED0491	04/29/21	05/01/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		88.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

BH23@8.5-10'
2104427-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BEE0078	05/05/21	05/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00675	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0132	0.00500	"	"	"	"	"	"	

Date Sampled: **04/27/21 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10		69.3 %		40-150	"	"	"	"	
Surrogate: Fluoranthene-d10		90.7 %		40-150	"	"	"	"	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

BH23@12-14'
2104427-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BED0517	04/30/21	05/02/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.048	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.20	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.16	0.0050	"	"	"	"	"	"	
Naphthalene	0.012	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BED0491	04/29/21	05/01/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
05/06/21 14:33

BH23@12-14'
2104427-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEE0078	05/05/21	05/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/27/21 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		93.1 %	40-150		"	"	"	"	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

BH27@7-10'
2104427-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BED0517	04/30/21	05/02/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.11	0.0050	"	"	"	"	"	"	
Xylenes (total)	3.9	1.0	"	100	"	"	"	"	
1,2,4-Trimethylbenzene	0.52	0.0050	"	1	"	"	"	"	
1,3,5-Trimethylbenzene	0.46	0.0050	"	"	"	"	"	"	
Naphthalene	0.053	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		154 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BED0491	04/29/21	05/01/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

BH27@7-10'
2104427-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BEE0078	05/05/21	05/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Chrysene	ND	0.00500	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Fluorene	ND	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
Pyrene	ND	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	0.0265	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	0.0555	0.00500	"	"	"	"	"	"	"

Date Sampled: **04/27/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10		82.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		92.9 %	40-150		"	"	"	"	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

BH27@12-14'
2104427-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BED0517	04/30/21	05/02/21	EPA 8260B	
Toluene	0.071	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.087	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.25	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.20	0.0050		"	"	"	"	"	"	
Naphthalene	0.019	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		123 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BED0491	04/29/21	05/01/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		94.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

BH27@12-14'
2104427-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Acenaphthene	ND	0.00500		mg/kg	1	BEE0078	05/05/21	05/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.00669	0.00500		"	"	"	"	"	"	

Date Sampled: **04/27/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10		88.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		90.6 %		40-150		"	"	"	"	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BED0517 - EPA 5030 Soil MS

Blank (BED0517-BLK1)

Prepared: 04/30/21 Analyzed: 05/01/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.2</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0622</i>		<i>"</i>	<i>0.0400</i>		<i>156</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0454</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>21-167</i>			

LCS (BED0517-BS1)

Prepared: 04/30/21 Analyzed: 05/01/21

Benzene	0.0890	0.0020	mg/kg	0.100		89.0	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.225	0.010	"	0.200		112	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
Naphthalene	0.0927	0.0038	"	0.100		92.7	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>90.9</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0468</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0435</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>21-167</i>			

Matrix Spike (BED0517-MS1)

Source: 2104425-01

Prepared: 04/30/21 Analyzed: 05/01/21

Benzene	0.0888	0.0020	mg/kg	0.100	ND	88.8	70-130			
Toluene	0.130	0.0050	"	0.100	ND	130	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.220	0.010	"	0.200	0.00378	108	70-130			
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130			
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
1,3,5-Trimethylbenzene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
Naphthalene	0.0963	0.0038	"	0.100	ND	96.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0466</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0431</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>21-167</i>			

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BED0517 - EPA 5030 Soil MS

Matrix Spike Dup (BED0517-MSD1)	Source: 2104425-01			Prepared: 04/30/21 Analyzed: 05/01/21						
Benzene	0.0904	0.0020	mg/kg	0.100	ND	90.4	70-130	1.74	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	9.67	30	
Ethylbenzene	0.0997	0.0050	"	0.100	ND	99.7	70-130	5.22	30	
m,p-Xylene	0.203	0.010	"	0.200	0.00378	99.6	70-130	8.18	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	6.37	30	
1,2,4-Trimethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130	6.65	30	
1,3,5-Trimethylbenzene	0.0915	0.0050	"	0.100	ND	91.5	70-130	8.63	30	
Naphthalene	0.0960	0.0038	"	0.100	ND	96.0	70-130	0.343	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0491</i>		<i>"</i>	<i>0.0400</i>		<i>123</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
05/06/21 14:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BED0491 - EPA 3550A

Blank (BED0491-BLK1)

Prepared: 04/29/21 Analyzed: 05/01/21

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							

LCS (BED0491-BS1)

Prepared: 04/29/21 Analyzed: 05/01/21

C10-C28 (DRO)	498	50	mg/kg	500	99.7	70-130				
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Matrix Spike (BED0491-MS1)

Source: 2104429-02

Prepared: 04/29/21 Analyzed: 05/01/21

C10-C28 (DRO)	473	50	mg/kg	500	12.5	92.1	70-130			
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Matrix Spike Dup (BED0491-MSD1)

Source: 2104429-02

Prepared: 04/29/21 Analyzed: 05/01/21

C10-C28 (DRO)	555	50	mg/kg	500	12.5	109	70-130	16.0	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
05/06/21 14:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEE0078 - EPA 5030 Soil MS

Blank (BEE0078-BLK1)

Prepared & Analyzed: 05/05/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0264</i>		"	<i>0.0333</i>		<i>79.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0323</i>		"	<i>0.0333</i>		<i>97.0</i>	<i>40-150</i>			

LCS (BEE0078-BS1)

Prepared & Analyzed: 05/05/21

Acenaphthene	0.0279	0.00500	mg/kg	0.0333		83.7	31-137			
Anthracene	0.0281	0.00500	"	0.0333		84.4	30-120			
Benzo (a) anthracene	0.0287	0.00500	"	0.0333		86.1	30-120			
Benzo (a) pyrene	0.0284	0.00500	"	0.0333		85.3	30-120			
Benzo (b) fluoranthene	0.0284	0.00500	"	0.0333		85.3	30-120			
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333		79.4	30-120			
Chrysene	0.0276	0.00500	"	0.0333		82.7	30-120			
Dibenz (a,h) anthracene	0.0344	0.00500	"	0.0333		103	30-120			
Fluoranthene	0.0220	0.00500	"	0.0333		66.1	30-120			
Fluorene	0.0302	0.00500	"	0.0333		90.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0330	0.00500	"	0.0333		99.0	30-120			
Pyrene	0.0245	0.00500	"	0.0333		73.5	35-142			
1-Methylnaphthalene	0.0322	0.00500	"	0.0333		96.7	35-142			
2-Methylnaphthalene	0.0308	0.00500	"	0.0333		92.4	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0290</i>		"	<i>0.0333</i>		<i>86.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0351</i>		"	<i>0.0333</i>		<i>105</i>	<i>40-150</i>			

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
05/06/21 14:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEE0078 - EPA 5030 Soil MS

Matrix Spike (BEE0078-MS1)	Source: 2104375-01			Prepared & Analyzed: 05/05/21						
Acenaphthene	0.0280	0.00500	mg/kg	0.0333	ND	84.0	31-137			
Anthracene	0.0272	0.00500	"	0.0333	ND	81.7	30-120			
Benzo (a) anthracene	0.0291	0.00500	"	0.0333	ND	87.4	30-120			
Benzo (a) pyrene	0.0283	0.00500	"	0.0333	ND	85.0	30-120			
Benzo (b) fluoranthene	0.0288	0.00500	"	0.0333	ND	86.3	30-120			
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120			
Chrysene	0.0276	0.00500	"	0.0333	ND	82.9	30-120			
Dibenz (a,h) anthracene	0.0339	0.00500	"	0.0333	ND	102	30-120			
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120			
Fluorene	0.0305	0.00500	"	0.0333	ND	91.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0323	0.00500	"	0.0333	ND	97.0	30-120			
Pyrene	0.0253	0.00500	"	0.0333	ND	75.8	35-142			
1-Methylnaphthalene	0.0318	0.00500	"	0.0333	ND	95.5	15-130			
2-Methylnaphthalene	0.0309	0.00500	"	0.0333	ND	92.7	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0267</i>		<i>"</i>	<i>0.0333</i>		<i>80.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0324</i>		<i>"</i>	<i>0.0333</i>		<i>97.1</i>	<i>40-150</i>			

Matrix Spike Dup (BEE0078-MSD1)	Source: 2104375-01			Prepared & Analyzed: 05/05/21						
Acenaphthene	0.0281	0.00500	mg/kg	0.0333	ND	84.3	31-137	0.374	30	
Anthracene	0.0292	0.00500	"	0.0333	ND	87.5	30-120	6.95	30	
Benzo (a) anthracene	0.0299	0.00500	"	0.0333	ND	89.6	30-120	2.50	30	
Benzo (a) pyrene	0.0288	0.00500	"	0.0333	ND	86.5	30-120	1.75	30	
Benzo (b) fluoranthene	0.0287	0.00500	"	0.0333	ND	86.2	30-120	0.196	30	
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120	0.210	30	
Chrysene	0.0281	0.00500	"	0.0333	ND	84.2	30-120	1.55	30	
Dibenz (a,h) anthracene	0.0345	0.00500	"	0.0333	ND	103	30-120	1.56	30	
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.3	30-120	4.66	30	
Fluorene	0.0288	0.00500	"	0.0333	ND	86.3	30-120	5.99	30	
Indeno (1,2,3-cd) pyrene	0.0333	0.00500	"	0.0333	ND	99.8	30-120	2.85	30	
Pyrene	0.0250	0.00500	"	0.0333	ND	75.1	35-142	0.883	30	
1-Methylnaphthalene	0.0341	0.00500	"	0.0333	ND	102	15-130	6.81	50	
2-Methylnaphthalene	0.0318	0.00500	"	0.0333	ND	95.3	15-130	2.75	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0286</i>		<i>"</i>	<i>0.0333</i>		<i>85.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0368</i>		<i>"</i>	<i>0.0333</i>		<i>110</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
05/06/21 14:33

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

July 02, 2021

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Munds 13-29, Dickerson 14-29A

Work Order #2106301

Enclosed are the results of analyses for samples received by Summit Scientific on 06/15/21 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/02/21 13:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH16	2106301-01	Water	06/15/21 12:10	06/15/21 17:30
BH17	2106301-02	Water	06/15/21 12:15	06/15/21 17:30
BH18	2106301-03	Water	06/15/21 12:20	06/15/21 17:30
BH19	2106301-04	Water	06/15/21 12:25	06/15/21 17:30
BH20	2106301-05	Water	06/15/21 12:30	06/15/21 17:30
BH21	2106301-06	Water	06/15/21 12:35	06/15/21 17:30
BH22	2106301-07	Water	06/15/21 12:40	06/15/21 17:30
BH24	2106301-08	Water	06/15/21 12:45	06/15/21 17:30
BH25	2106301-09	Water	06/15/21 12:50	06/15/21 17:30
BH26	2106301-10	Water	06/15/21 12:55	06/15/21 17:30

Summit Scientific

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Summit Scientific

2106301

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Tasman Geosciences/ Noble Project Manager: Brandon Bruns; Invoice: Jacob Evans

Address: 6555 119th Ave E-Mail: Tasman/Noble Team (On File)

City/State/Zip: Broomfield, CO 80020

Phone: 979-255-4235 Project Name: Munds 13-29, Dickerson 14-29A

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	BTEXN	1,2,4-TMB	1,3,5-TMB	TDS	Chlorides	Sulfate		
1	BH16	6/15/21	12 10	4	3			1		X				X	X	X	X	X	X	
2	BH17		12 15																	
3	BH18		12 20																	
4	BH19		12 25																	
5	BH20		12 30																	
6	BH21		12 35																	
7	BH22		12 40																	
8	BH24		12 45																	
9	BH25		12 50																	
10	BH26	↓	12 55	↓	↓					↓				↓	↓	↓	↓	↓	↓	

Relinquished by: <u>[Signature]</u>	Date/Time: <u>6/15/21 1900</u>	Received by: <u>Lock Box</u>	Date/Time: <u>6/15/21 1500</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>Lockbox</u>	Date/Time: <u>6/15/21 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>6/15/21 1730</u>	Same Day <u>—</u> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <u>—</u> Standard <input checked="" type="checkbox"/>	
				48 hours <u>—</u>	
				Sample Integrity:	
				Temperature Upon Receipt: <u>15</u>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

2106301

Sample Receipt Checklist

S2 Work Order _____

Client: Tasman / Noble Client Project ID: Munds B-29, Dickerson 14-29 A

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

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

Temp (°C)	15
-----------	----

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"/>	On ice.
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.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

6/15/21
Date/Time



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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/02/21 13:26

BH16
2106301-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1500	100		ug/l	100	BEF0421	06/19/21	06/20/21	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	06/23/21	"	
Ethylbenzene	150	1.0		"	"	"	"	"	"	
Xylenes (total)	850	2.0		"	"	"	"	"	"	
Naphthalene	7.7	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	150	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	96	1.0		"	"	"	"	"	"	

Date Sampled: **06/15/21 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		124 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		79.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	369	12.0		mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	504	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1640	10.0		mg/L	1	BEF0394	06/18/21	06/18/21	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 - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH17
2106301-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	11	1.0	ug/l	1	BEF0421	06/19/21	06/23/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	470	1.0	"	"	"	"	"	"	
Xylenes (total)	6400	200	"	100	"	"	"	"	
Naphthalene	15	1.0	"	1	"	"	"	"	
1,2,4-Trimethylbenzene	500	100	"	100	"	"	"	"	
1,3,5-Trimethylbenzene	400	100	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		144 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		80.9 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		111 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	339	12.0	mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	321	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1500	10.0	mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH18
2106301-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEF0421	06/19/21	06/23/21	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: **06/15/21 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		107 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		78.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	385	12.0		mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	515	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1510	10.0		mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH19
2106301-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEF0421	06/19/21	06/23/21	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: **06/15/21 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		79.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	184	12.0		mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	178	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	805	10.0		mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH20
2106301-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEF0421	06/19/21	06/23/21	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: **06/15/21 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		92.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		79.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	171	12.0		mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	206	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	820	10.0		mg/L	1	BEF0394	06/18/21	06/18/21	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 - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH21
2106301-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	350	100	ug/l	100	BEF0421	06/19/21	06/23/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	600	100	"	100	"	"	"	"	
Xylenes (total)	1500	200	"	"	"	"	"	"	
Naphthalene	35	1.0	"	1	"	"	"	"	
1,2,4-Trimethylbenzene	670	100	"	100	"	"	"	"	
1,3,5-Trimethylbenzene	14	1.0	"	1	"	"	"	"	

Date Sampled: **06/15/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		133 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		81.1 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		114 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	69.4	12.0	mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	256	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	893	10.0	mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH22
2106301-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1800	100	ug/l	100	BEF0421	06/19/21	06/20/21	EPA 8260B	
Toluene	38	1.0	"	1	"	"	06/23/21	"	
Ethylbenzene	94000	100	"	100	"	"	"	"	
Xylenes (total)	36000	200	"	"	"	"	06/20/21	"	
Naphthalene	43	1.0	"	1	"	"	06/23/21	"	
1,2,4-Trimethylbenzene	630	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	490	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		161 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		81.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		141 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	426	12.0	mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	449	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1570	10.0	mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
07/02/21 13:26

BH24
2106301-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEF0421	06/19/21	06/23/21	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		"	"	"	"	06/20/21	"	

Date Sampled: **06/15/21 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		94.7 %		23-173		"	"	06/23/21	"	
Surrogate: Toluene-d8		79.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	219	12.0		mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	984	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1800	10.0		mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

BH25
2106301-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	420	100	ug/l	100	BEF0421	06/19/21	06/23/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	36	1.0	"	"	"	"	"	"	
Xylenes (total)	83	2.0	"	"	"	"	"	"	
Naphthalene	22	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	60	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	7.7	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		126 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		81.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		131 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	718	12.0	mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	1460	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2980	10.0	mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
07/02/21 13:26

BH26
2106301-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2500	100	ug/l	100	BEF0421	06/19/21	06/20/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	06/23/21	"	
Ethylbenzene	430	100	"	100	"	"	06/20/21	"	
Xylenes (total)	2100	200	"	"	"	"	"	"	
Naphthalene	14	1.0	"	1	"	"	06/23/21	"	
1,2,4-Trimethylbenzene	390	100	"	100	"	"	06/20/21	"	
1,3,5-Trimethylbenzene	220	100	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		214 %	23-173		"	"	06/23/21	"	S-02
<i>Surrogate: Toluene-d8</i>		1130 %	20-170		"	"	"	"	S-02
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/15/21 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	311	12.0	mg/L	200	BEF0587	06/29/21	06/30/21	EPA 300.0	
Sulfate	97.0	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/15/21 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	892	10.0	mg/L	1	BEF0394	06/18/21	06/18/21	SM2540C	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

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 BEF0421 - EPA 5030 Water MS

Blank (BEF0421-BLK1)

Prepared: 06/19/21 Analyzed: 06/20/21

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.8		"	13.3		96.3		23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		99.2		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.3		"	13.3		100		21-167			

LCS (BEF0421-BS1)

Prepared: 06/19/21 Analyzed: 06/20/21

Benzene	17.1	1.0	ug/l	25.0		68.4		51-132			
Toluene	20.7	1.0	"	25.0		82.7		51-138			
Ethylbenzene	22.1	1.0	"	25.0		88.2		58-146			
m,p-Xylene	42.8	2.0	"	50.0		85.7		57-144			
o-Xylene	21.5	1.0	"	25.0		86.1		53-146			
Naphthalene	28.8	1.0	"	25.0		115		70-130			
1,2,4-Trimethylbenzene	21.4	1.0	"	25.0		85.6		70-130			
1,3,5-Trimethylbenzene	21.9	1.0	"	25.0		87.5		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	10.1		"	13.3		75.7		23-173			
<i>Surrogate: Toluene-d8</i>	13.3		"	13.3		99.6		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.0		"	13.3		82.3		21-167			

Matrix Spike (BEF0421-MS1)

Source: 2106307-01

Prepared: 06/19/21 Analyzed: 06/20/21

Benzene	17.4	1.0	ug/l	25.0	ND	69.5		34-141			
Toluene	20.7	1.0	"	25.0	ND	82.8		27-151			
Ethylbenzene	22.0	1.0	"	25.0	ND	88.1		29-160			
m,p-Xylene	42.4	2.0	"	50.0	1.00	82.8		20-166			
o-Xylene	21.7	1.0	"	25.0	ND	86.6		33-159			
Naphthalene	33.7	1.0	"	25.0	4.91	115		70-130			
1,2,4-Trimethylbenzene	21.5	1.0	"	25.0	1.51	80.0		70-130			
1,3,5-Trimethylbenzene	21.9	1.0	"	25.0	ND	87.6		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	10.6		"	13.3		79.7		23-173			
<i>Surrogate: Toluene-d8</i>	13.3		"	13.3		99.8		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	10.8		"	13.3		81.3		21-167			

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brun

Reported:
07/02/21 13:26

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 BEF0421 - EPA 5030 Water MS

Matrix Spike Dup (BEF0421-MSD1)

Source: 2106307-01

Prepared: 06/19/21 Analyzed: 06/20/21

Benzene	17.2	1.0	ug/l	25.0	ND	69.0	34-141	0.809	30	
Toluene	21.8	1.0	"	25.0	ND	87.2	27-151	5.17	30	
Ethylbenzene	22.1	1.0	"	25.0	ND	88.3	29-160	0.272	30	
m,p-Xylene	42.7	2.0	"	50.0	1.00	83.5	20-166	0.822	30	
o-Xylene	21.6	1.0	"	25.0	ND	86.6	33-159	0.0924	30	
Naphthalene	33.9	1.0	"	25.0	4.91	116	70-130	0.621	30	
1,2,4-Trimethylbenzene	21.6	1.0	"	25.0	1.51	80.3	70-130	0.418	30	
1,3,5-Trimethylbenzene	21.9	1.0	"	25.0	ND	87.7	70-130	0.0456	30	
Surrogate: 1,2-Dichloroethane-d4	10.4		"	13.3		78.4	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	10.9		"	13.3		81.7	21-167			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/02/21 13:26

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BEF0587 - General Preparation

Blank (BEF0587-BLK1)

Prepared: 06/29/21 Analyzed: 06/30/21

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

LCS (BEF0587-BS1)

Prepared: 06/29/21 Analyzed: 06/30/21

Chloride	3.21	0.0600	mg/L	3.00		107	90-110			
Sulfate	15.0	0.300	"	15.0		99.8	90-110			

Duplicate (BEF0587-DUP1)

Source: 2106301-01

Prepared: 06/29/21 Analyzed: 06/30/21

Chloride	347	12.0	mg/L		369			6.14	20	
Sulfate	503	60.0	"		504			0.318	20	

Matrix Spike (BEF0587-MS1)

Source: 2106301-01

Prepared: 06/29/21 Analyzed: 06/30/21

Chloride	931	12.0	mg/L	600	369	93.6	80-120			
Sulfate	3540	60.0	"	3000	504	101	80-120			

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/02/21 13:26

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 BEF0394 - General Preparation

Blank (BEF0394-BLK1)

Prepared & Analyzed: 06/18/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEF0394-DUP1)

Source: 2106255-05

Prepared & Analyzed: 06/18/21

Total Dissolved Solids 599 10.0 mg/L 602 0.466 20

Summit Scientific

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

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/02/21 13:26

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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