

SITE ASSESSMENT REPORT
FRANK 1, 12-02, 7-4 FACILITY
COGCC SPILL TRACKING # 481479
COGCC REMEDIATION # 20156

Prepared for:

2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FRANK 1, 12-02, 7-4 (FAC)

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	
SS01@2.5'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS02@2.5'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS03@2.5'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS04@2.5'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@6'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.63	380	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0381	<0.00500	0.0394	<0.00500	<0.00500	0.0324	0.0564	
FS02@8'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.46	690	990	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.120	<0.00500	0.535	<0.00500	<0.00500	2.28	2.69	
SEP01-DL01@3'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
SEP01-DL02@3'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
SEP01-FL01@3'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
AST01@0.5'	01/26/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH01@8-10'	05/13/22	<0.0020	<0.0050	0.0073	<0.010	<0.0050	<0.0050	0.15	540	420	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0319	<0.00500	0.0977	<0.00500	<0.00500	0.992	2.82	
BH01@15-17'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH02@6-8'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.011	10	190	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0128	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH02@15-17'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH03@6-8'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH03@15-17'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH04@6-8'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.66	65	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH04@15-17'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
BH05@6-8'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.067	39	100	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0121	<0.00500	0.0816	<0.00500	<0.00500	0.479	0.700	
BH05@15-17'	05/13/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.53	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	01/26/22	7.64	0.180	0.0508	0.168
SS02@2.5'	01/26/22	7.90	0.0994	0.0414	0.194
SS03@2.5'	01/26/22	8.59	0.152	0.0572	0.128
SS04@2.5'	01/26/22	8.73	0.0433	0.0419	0.176
FS01@6'	01/26/22	8.57	0.226	0.0802	0.163
FS02@8'	01/26/22	8.87	0.688	0.0918	0.309
SEP01-DL01@3'	01/26/22	8.77	0.0746	0.0408	0.399
SEP01-DL02@3'	01/26/22	7.47	0.110	0.0392	0.414
SEP01-FL01@3'	01/26/22	7.62	0.0683	0.0382	1.25
AST01@0.5'	01/26/22	7.70	0.0631	0.042	0.133
BG01@6'	01/26/22	8.47	NA	NA	NA
BH01@8-10'	05/13/22	7.64	2.68	1.92	0.232
BH01@15-17'	05/13/22	8.25	0.590	0.535	0.0933
BH02@6-8'	05/13/22	8.39	7.96	2.75	0.300
BH02@15-17'	05/13/22	8.33	0.586	0.644	0.129
BH03@6-8'	05/13/22	8.56	0.353	0.493	0.0679
BH03@15-17'	05/13/22	8.44	0.592	0.602	0.0850
BH04@6-8'	05/13/22	8.38	0.827	1.36	0.0772
BH04@15-17'	05/13/22	8.58	0.429	0.503	0.0868
BH05@6-8'	05/13/22	8.06	2.71	1.45	0.234
BH05@15-17'	05/13/22	9.18	3.11	0.106	0.0765

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS02@8'	01/26/22	5.76	207	0.274	<0.30	19.7	13.4	17.1	3.15	<0.142	80.5
BG01@6'	01/26/22	1.89	177	NA	NA	NA	NA	NA	1.25	NA	NA
BH01@8-10'	05/13/22	2.56	108	<0.238	<0.30	5.73	5.39	6.08	0.541	0.0375	24.4
BH01@15-17'	05/13/22	1.98	25.9	<0.239	<0.30	4.13	3.94	3.51	0.530	<0.0239	16.4
BH02@6-8'	05/13/22	1.62	65.7	<0.233	<0.30	7.64	5.50	5.90	0.497	0.0339	30.3
BH02@15-17'	05/13/22	4.65	52.1	<0.246	<0.30	8.94	7.74	7.79	1.50	0.0367	31.1
BH03@6-8'	05/13/22	2.83	52.3	<0.232	<0.30	3.63	3.36	3.91	0.448	<0.0232	15.1
BH03@15-17'	05/13/22	1.54	49.2	<0.241	<0.30	6.27	5.14	6.12	0.524	<0.0241	24.8
BH04@6-8'	05/13/22	1.47	31.1	<0.218	<0.30	2.93	2.73	2.99	0.358	0.0263	12.0
BH04@15-17'	05/13/22	2.18	55.6	<0.231	<0.30	6.11	5.59	6.58	0.655	0.0270	27.1
BH05@6-8'	05/13/22	3.61	162	0.276	<0.30	18.0	11.1	13.6	1.12	0.0861	61.6
BH05@15-17'	05/13/22	0.530	16.9	<0.231	<0.30	2.71	2.72	2.21	0.307	<0.0231	11.0

Notes:

- Compounds referenced from

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - FRANK 1, 12-02, 7-4 (FAC)

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	06/02/22	4606.75	18.55	6.65	ND	ND	4598.51
BH02	06/02/22	4606.81	17.60	6.81	ND	ND	4598.49
BH03	06/02/22	4606.96	18.33	6.88	ND	ND	4598.52
BH04	06/02/22	4606.75	18.37	7.29	ND	ND	4597.60
BH05	06/02/22	4606.47	17.96	6.19	ND	ND	4598.54

Notes:

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

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

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

LNAPL relative density was estimated to be 0.75

Definitions:

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

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - FRANK 1, 12-02, 7-4 (FAC)

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 Standard		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
BH01	06/02/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,600	206	555
BH02	06/02/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,910	255	596
BH03 ⁽²⁾	06/02/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,540	213	489
BH04	06/02/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	868	178	197
BH05	06/02/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,280	344	779

Notes:

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

⁽²⁾ Monitoring well used for inorganic background levels.

Definitions:

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

COGCC = Colorado Oil and Gas Conservation Commission

mg/L = Milligrams per liter

µg/L = Micrograms per liter

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

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

TDS = Total Dissolved Solids

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

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

FIGURES

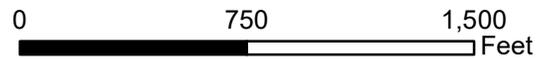
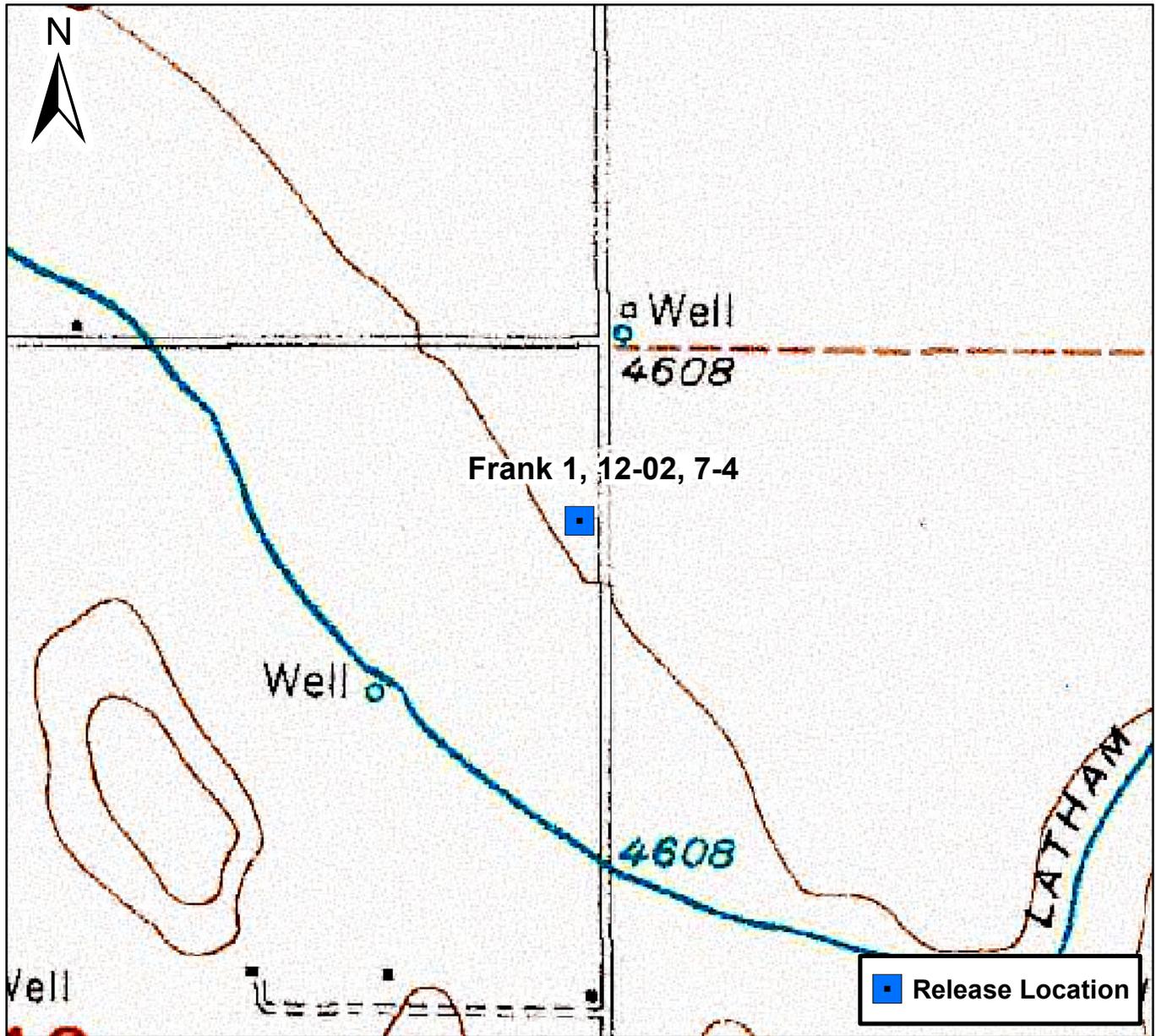
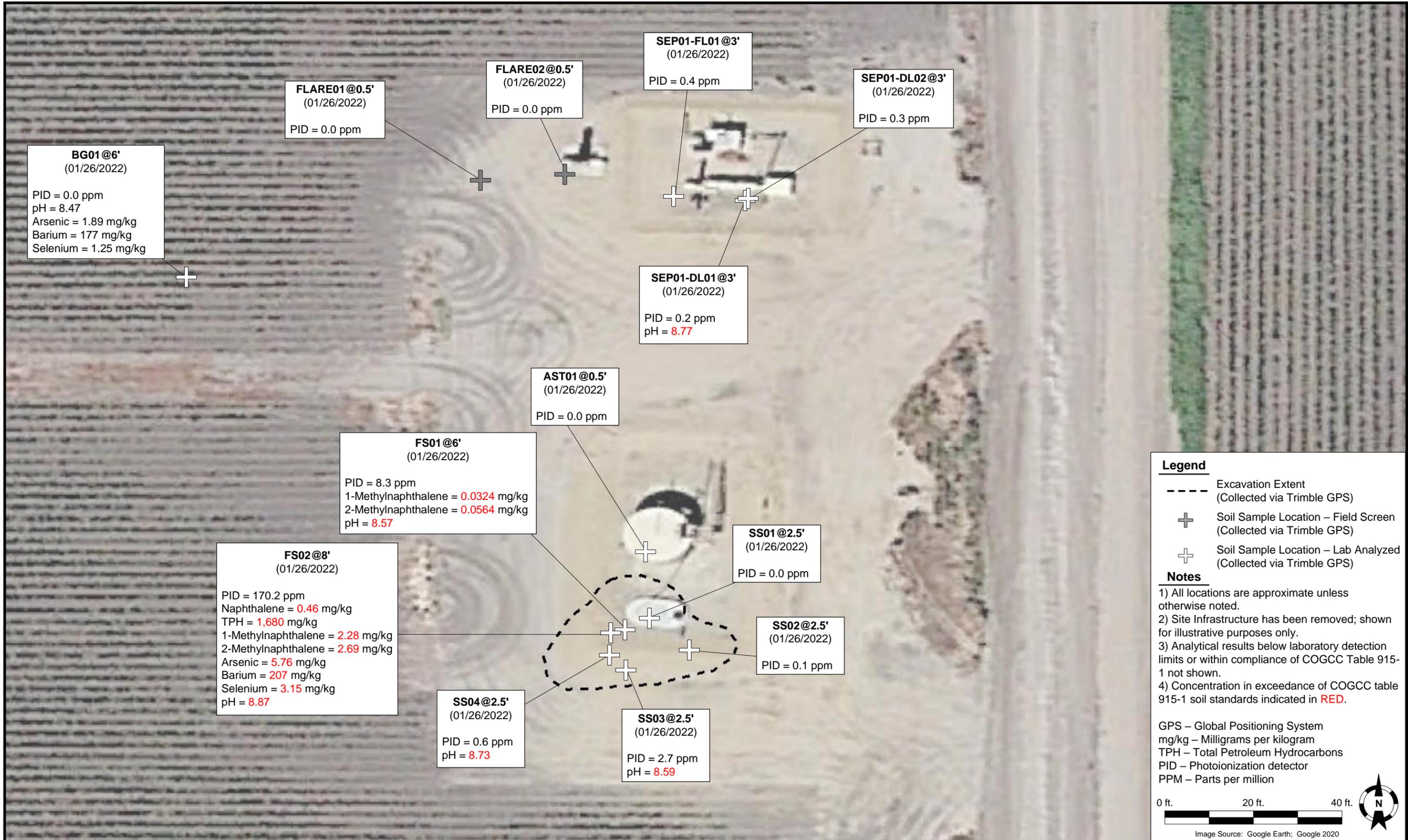


Figure 1

Site Location Map
 Frank 1, 12-02, 7-4 Facility
 NENE S12 T4N R64W
 Weld County, Colorado





Legend

- Excavation Extent (Collected via Trimble GPS)
- ⊕ Soil Sample Location – Field Screen (Collected via Trimble GPS)
- ⊕ Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.
- 3) Analytical results below laboratory detection limits or within compliance of COGCC Table 915-1 not shown.
- 4) Concentration in exceedance of COGCC table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System
 mg/kg – Milligrams per kilogram
 TPH – Total Petroleum Hydrocarbons
 PID – Photoionization detector
 PPM – Parts per million

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2020

DATE:	01/26/2022
DESIGNED BY:	JW
DRAWN BY:	SQ

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

Noble Energy, Inc. – DJ Basin
Frank 1, 12-02, 7-4 Facility
 NENE, Section 12, Township 4 North, Range 64 West
 Weld County, Colorado

Decommissioning &
 Soil Analytical Results Map
 (01/26/2022)

FIGURE
 2

BH05@6-8'
(05/13/2022)

PID = 67.6 ppm
Naphthalene = **0.067** mg/kg
1-M = **0.479** mg/kg
2-M = **0.700** mg/kg
Arsenic = **3.61** mg/kg
Barium = **162** mg/kg
Selenium = **1.12** mg/kg

BH05@15-17'
(05/13/2022)

PID = 0.0 ppm
Arsenic = **0.530** mg/kg
Selenium = **0.307** mg/kg
pH = **9.18**

BH02@6-8'
(05/13/2022)

PID = 74.9 ppm
Naphthalene = **0.011** mg/kg
Arsenic = **1.62** mg/kg
Selenium = **0.497** mg/kg
pH = **8.39**
SAR = **7.96**

BH02@15-17'
(05/13/2022)

PID = 0.0 ppm
Arsenic = **4.65** mg/kg
Selenium = **1.50** mg/kg
pH = **8.33**

BH03@6-8'
(05/13/2022)

PID = 1.8 ppm
Arsenic = **2.83** mg/kg
Selenium = **0.448** mg/kg
pH = **8.56**

BH03@15-17'
(05/13/2022)

PID = 0.0 ppm
Arsenic = **1.54** mg/kg
Selenium = **0.524** mg/kg
pH = **8.44**

BH01@8-10'
(05/13/2022)

PID = 1,028 ppm
Naphthalene = **0.15** mg/kg
TPH = **960** mg/kg
1-M = **0.992** mg/kg
2-M = **2.82** mg/kg
Arsenic = **2.56** mg/kg
Barium = **108** mg/kg
Selenium = **0.541** mg/kg

BH01@15-17'
(05/13/2022)

PID = 0.0 ppm
Arsenic = **1.98** mg/kg
Selenium = **0.530** mg/kg

BH04@6-8'
(05/13/2022)

PID = 18.6 ppm
Arsenic = **1.47** mg/kg
Selenium = **0.358** mg/kg
pH = **8.38**

BH04@15-17'
(05/13/2022)

PID = 0.0 ppm
Arsenic = **2.18** mg/kg
Selenium = **0.655** mg/kg
pH = **8.58**

Legend

-  Assessment Location Collected with Trimble GPS
-  Excavation Extent (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.
- 3) Analytical results below laboratory detection limits or within compliance of COGCC Table 915-1 not shown.
- 4) Concentration in exceedance of COGCC table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System
mg/kg – Milligrams per kilogram
TPH – Total Petroleum Hydrocarbons
1-M = 1-Methylnaphthalene
2-M = 2-Methylnaphthalene
PID – Photoionization detector
PPM – Parts per million
SAR – Sodium Adsorption Ratio

0 ft. 15 ft. 30 ft. 

Image Source: Google Earth; Google 2020

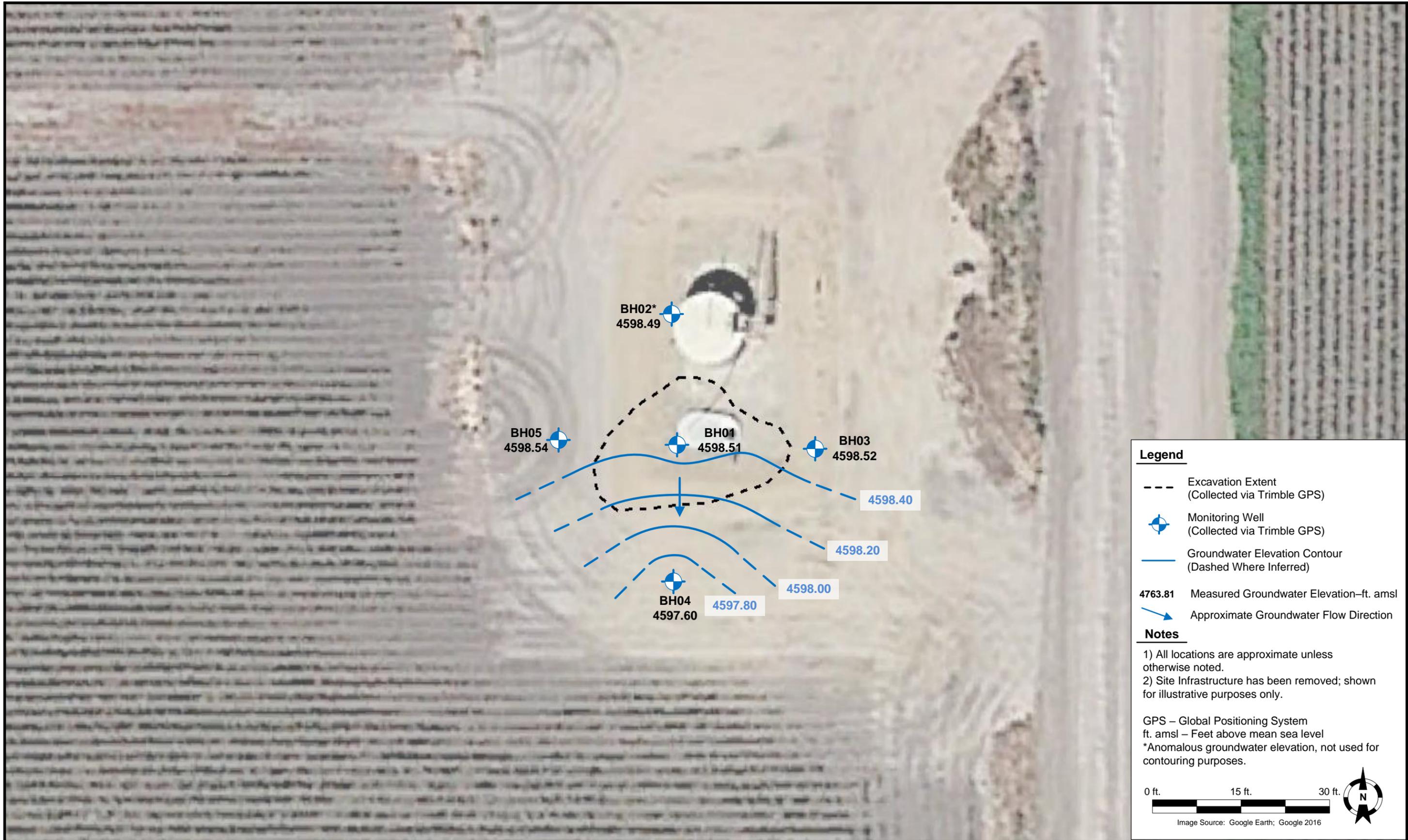
DATE:	07/05/2022
DESIGNED BY:	JW
DRAWN BY:	JK



Noble Energy, Inc. – DJ Basin
Frank 1, 12-02, 7-4 Facility
NENE, Section 12, Township 4 North, Range 64 West
Weld County, Colorado

Site Assessment
Soil Analytical Results Map
(05/13/2022)

FIGURE
3



Legend

- Excavation Extent (Collected via Trimble GPS)
- ⊕ Monitoring Well (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed Where Inferred)

4763.81 Measured Groundwater Elevation—ft. amsl

➔ Approximate Groundwater Flow Direction

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.

GPS – Global Positioning System
 ft. amsl – Feet above mean sea level
 *Anomalous groundwater elevation, not used for contouring purposes.

0 ft. 15 ft. 30 ft.

Image Source: Google Earth; Google 2016

DATE:	7/29/2022
DESIGNED BY:	JW
DRAWN BY:	JC



TASMAN Tasman, Inc.
 6855 W 119th Ave.
 Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Frank 1, 12-02, 7-4 Facility
 NENE, Section 12, Township 4 North, Range 64 West
 Weld County, Colorado

Site Assessment
 Groundwater Potentiometric
 Surface Contour Map
 (06/02/2022)

FIGURE
 4

BH01	
Compound	06/02/22
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	1,600
Chloride (mg/L)	206
Sulfate (mg/L)	555

BH02	
Compound	06/02/22
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	1,910
Chloride (mg/L)	255
Sulfate (mg/L)	596

BH03	
Compound	06/02/22
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	1,540
Chloride (mg/L)	213
Sulfate (mg/L)	489

BH05	
Compound	06/02/22
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	2,280
Chloride (mg/L)	344
Sulfate (mg/L)	779

BH04	
Compound	06/02/22
Benzene (ug/L)	<1.0
Toluene (ug/L)	<1.0
Ethylbenzene (ug/L)	<1.0
Total Xylenes (ug/L)	<2.0
Naphthalene (ug/L)	<1.0
1,2,4-Trimethylbenzene (ug/L)	<1.0
1,3,5-Trimethylbenzene (ug/L)	<1.0
Total Dissolved Solids (mg/L)	868
Chloride (mg/L)	178
Sulfate (mg/L)	197

Legend

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

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.
- 3) **Bold** results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.

GPS – Global Positioning System
 mg/L – Milligrams per kilogram
 µg/L – Micrograms per liter

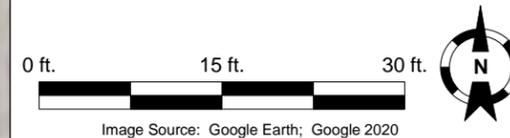


Image Source: Google Earth; Google 2020

DATE: 07/12/2022

DESIGNED BY: JW

DRAWN BY: JK



Noble Energy, Inc. – DJ Basin
Frank 1, 12-02, 7-4 Facility
 NENE, Section 12, Township 4 North, Range 64 West
 Weld County, Colorado

Site Assessment
 Groundwater Analytical
 Results Map
 (06/02/2022)

FIGURE
 5

ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 04, 2022

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

RE: Noble - Frank 1,12-2,7-4 FAC

Work Order #2201334

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/22 16:20. 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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2.5'	2201334-01	Soil	01/26/22 12:02	01/26/22 16:20
SS02@2.5'	2201334-02	Soil	01/26/22 12:04	01/26/22 16:20
SS03@2.5'	2201334-03	Soil	01/26/22 12:06	01/26/22 16:20
SS04@2.5'	2201334-04	Soil	01/26/22 12:08	01/26/22 16:20
FS01@6'	2201334-05	Soil	01/26/22 12:10	01/26/22 16:20
FS02@8'	2201334-06	Soil	01/26/22 13:20	01/26/22 16:20
SEP01-DL01@3'	2201334-07	Soil	01/26/22 13:35	01/26/22 16:20
SEP01-DL02@3'	2201334-08	Soil	01/26/22 13:45	01/26/22 16:20
SEP01-FL01@3'	2201334-09	Soil	01/26/22 13:47	01/26/22 16:20
BG01@6'	2201334-10	Soil	01/26/22 14:15	01/26/22 16:20
AST01@0.5'	2201334-11	Soil	01/26/22 12:35	01/26/22 16:20

Summit Scientific

2201334.1

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 2

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Jeff White
 Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
 City/State/Zip: Broomfield / CO / 80020
 Phone: 3038290530 Project Name: Frank 1, 12-2, 7-4 FAC
 Sampler Name: Halina North Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		9-15 metals
1	SS01 @ 2.5'	1/26/22	12:02	2			X			X				X	X	X	X	X		SAR, EC, pH by saturated paste
2	SS02 @ 2.5'		12:04																	
3	SS03 @ 2.5'		12:06																	
4	SS04 @ 2.5'		12:08																	
5	FS01 @ 6'		12:10																	
6	FS02 @ 8'		13:20																X	
7	SEPO1-DLO1 @ 3'		13:35																	
8	SEPO1-DLO2 @ 3'		13:45																	
9	SEPO1-FLO1 @ 3'		13:47																	
10	BGO1 @ 6'		14:15															X	HOLD	

Relinquished by: <u>Halina North</u> Date/Time: <u>1/26/22 16:20</u>	Received by: <u>Tasman's Lock Box</u> Date/Time: <u>1/26/22 16:20</u>	Turn Around Time (Check) ___ Same Day ___ 72 hours ___ 24 hours <input checked="" type="checkbox"/> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>6.0</u> Samples Intact: <input checked="" type="radio"/> Yes No	Notes:
Relinquished by: <u>Tasman's Lock Box</u> Date/Time:	Received by: <u>[Signature]</u> Date/Time: <u>1/26/22 16:20</u>		
Relinquished by: Date/Time:	Received by: Date/Time:		

Summit Scientific

2201334.2

S₂

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

Page 2 of 2

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Jeff White
 Address: 6855 W. 119th Ave. E-Mail: Jwhritenour@tasman-geo.com
 City/State/Zip: Broomfield / CO/ 80020
 Phone: 3038290530 Project Name: Frank 1, 12-2, 7-4 FAC
 Sampler Name: Halina North Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD	
1	ASTO @ O.S	1/26/22	12:35	2			X			X				X	X	X	X	X		SAR, EC, pH by saturated paste
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: <u>Halina North</u> Date/Time: <u>1/26/22 16:20</u>	Received by: <u>Tasman's Lock Box</u> Date/Time: <u>1/26/22 16:20</u>	Turn Around Time (Check) <input type="checkbox"/> Same Day 72 hours <input checked="" type="checkbox"/> 24 hours Standard <input type="checkbox"/> 48 hours Sample Integrity: Temperature Upon Receipt: <u>6.6</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u> Date/Time:	Received by: <u>[Signature]</u> Date/Time: <u>1/26/22 16:20</u>		
Relinquished by: Date/Time:	Received by: Date/Time:		

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2201334

Client: Noble/Tasman Client Project ID: Frank 1,12-2,7-4, FAC

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

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

Temp (°C) 6.6

Thermometer ID: G86A9201901378

	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 if 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

[Signature]
Custodian Printed Name or Initials

1/20/22
Date/Time

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS01@2.5'
2201334-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		144 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		34.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS01@2.5'
2201334-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.8 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-2,7-4 FAC Project Number: [none] Project Manager: Jacob Whritenour	Reported: 04/04/22 11:01
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SS01@2.5'
2201334-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.35	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS02@2.5'
2201334-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		141 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		41.4 %	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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS02@2.5'
2201334-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.7 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.7		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS02@2.5'
2201334-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.40	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS03@2.5'
2201334-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		150 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		96.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Frank 1,12-2,7-4 FAC
Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS03@2.5'
2201334-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.7 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.1		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS03@2.5'
2201334-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.18	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS04@2.5'
2201334-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		145 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		49.2 %	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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS04@2.5'
2201334-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.2 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SS04@2.5'
2201334-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.48	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

FS01@6'
2201334-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	0.63	0.50		"	"	"	"	"	"	

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		151 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	380	50		mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		106 %		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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

FS01@6'
2201334-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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	0.0381	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0394	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0324	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0564	0.00500	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.3 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

FS01@6'
2201334-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.49	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

FS02@8'
2201334-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

R-01

Date Sampled: **01/26/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.020	mg/kg	10	BFA0458	01/28/22	02/02/22	EPA 8260B	
Toluene	ND	0.050	"	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	"	
Xylenes (total)	ND	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.050	"	"	"	"	"	"	
Naphthalene	0.46	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	690	50	"	100	"	"	"	"	

Date Sampled: **01/26/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		394 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	990	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

R-01

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 - Frank 1,12-2,7-4 FAC Project Number: [none] Project Manager: Jacob Whritenour	Reported: 04/04/22 11:01
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FS02@8'
2201334-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.1	%	1	BFA0446	01/27/22	01/28/22	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D	

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL01@3'
2201334-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		152 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL01@3'
2201334-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.4 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL01@3'
2201334-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.32	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL02@3'
2201334-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		137 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		89.3 %	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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL02@3'
2201334-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.7 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.8		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-DL02@3'
2201334-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.35	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-FL01@3'
2201334-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		143 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		48.8 %	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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-FL01@3'
2201334-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.9 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.6		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

SEP01-FL01@3'
2201334-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.39	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

BG01@6'
2201334-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/26/22 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.89	0.200	mg/kg dry	1	BFC0718	03/30/22	04/02/22	EPA 6020B	
Barium	117	0.400	"	"	"	"	"	"	
Selenium	1.25	0.260	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	79.4		%	1	BFC0749	03/31/22	04/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.47		pH Units	1	BFC0644	03/28/22	03/29/22	EPA 9045D	

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

AST01@0.5'
2201334-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFA0458	01/28/22	01/30/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		137 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFA0459	01/28/22	01/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		95.9 %	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 - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

AST01@0.5'
2201334-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFA0484	01/28/22	01/29/22	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: **01/26/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.3 %	40-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFA0446	01/27/22	01/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/26/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

AST01@0.5'
2201334-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.66	pH Units	1	BFC0546	03/24/22	03/24/22	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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 BFA0458 - EPA 5030 Soil MS

Blank (BFA0458-BLK1)

Prepared: 01/28/22 Analyzed: 01/29/22

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	"								
Surrogate: 1,2-Dichloroethane-d4	0.0531		"	0.0400		133	23-173				
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170				
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167				

LCS (BFA0458-BS1)

Prepared: 01/28/22 Analyzed: 01/29/22

Benzene	0.0868	0.0020	mg/kg	0.0750		116	70-130				
Toluene	0.0839	0.0050	"	0.0750		112	70-130				
Ethylbenzene	0.0752	0.0050	"	0.0750		100	70-130				
m,p-Xylene	0.143	0.010	"	0.150		95.1	70-130				
o-Xylene	0.0734	0.0050	"	0.0750		97.8	70-130				
1,2,4-Trimethylbenzene	0.0794	0.0050	"	0.0750		106	70-130				
1,3,5-Trimethylbenzene	0.0774	0.0050	"	0.0750		103	70-130				
Naphthalene	0.0916	0.0038	"	0.0750		122	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0636		"	0.0400		159	23-173				
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0438		"	0.0400		110	21-167				

Matrix Spike (BFA0458-MS1)

Source: 2201334-01

Prepared: 01/28/22 Analyzed: 01/29/22

Benzene	0.0878	0.0020	mg/kg	0.0750	ND	117	70-130				
Toluene	0.0876	0.0050	"	0.0750	ND	117	70-130				
Ethylbenzene	0.0841	0.0050	"	0.0750	ND	112	70-130				
m,p-Xylene	0.160	0.010	"	0.150	ND	107	70-130				
o-Xylene	0.0816	0.0050	"	0.0750	ND	109	70-130				
1,2,4-Trimethylbenzene	0.0877	0.0050	"	0.0750	ND	117	70-130				
1,3,5-Trimethylbenzene	0.0879	0.0050	"	0.0750	ND	117	70-130				
Naphthalene	0.0929	0.0038	"	0.0750	ND	124	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0526		"	0.0400		131	23-173				
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	21-167				

Summit Scientific

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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 BFA0458 - EPA 5030 Soil MS

Matrix Spike Dup (BFA0458-MSD1)	Source: 2201334-01			Prepared: 01/28/22 Analyzed: 01/29/22						
Benzene	0.0843	0.0020	mg/kg	0.0750	ND	112	70-130	4.08	30	
Toluene	0.0880	0.0050	"	0.0750	ND	117	70-130	0.478	30	
Ethylbenzene	0.0827	0.0050	"	0.0750	ND	110	70-130	1.65	30	
m,p-Xylene	0.159	0.010	"	0.150	ND	106	70-130	0.902	30	
o-Xylene	0.0802	0.0050	"	0.0750	ND	107	70-130	1.63	30	
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.0750	ND	114	70-130	2.67	30	
1,3,5-Trimethylbenzene	0.0872	0.0050	"	0.0750	ND	116	70-130	0.720	30	
Naphthalene	0.0960	0.0038	"	0.0750	ND	128	70-130	3.24	30	
Surrogate: 1,2-Dichloroethane-d4	0.0524		"	0.0400		131	23-173			
Surrogate: Toluene-d8	0.0422		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	21-167			

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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 BFA0459 - EPA 3550A

Blank (BFA0459-BLK1)

Prepared & Analyzed: 01/28/22

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

LCS (BFA0459-BS1)

Prepared & Analyzed: 01/28/22

C10-C28 (DRO)	481	50	mg/kg	500	96.2	70-130				
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Matrix Spike (BFA0459-MS1)

Source: 2201334-01

Prepared: 01/28/22 Analyzed: 01/29/22

C10-C28 (DRO)	467	50	mg/kg	500	31.9	87.0	70-130			
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Matrix Spike Dup (BFA0459-MSD1)

Source: 2201334-01

Prepared: 01/28/22 Analyzed: 01/29/22

C10-C28 (DRO)	421	50	mg/kg	500	31.9	77.7	70-130	10.4	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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 BFA0484 - EPA 5030 Soil MS

Blank (BFA0484-BLK1)

Prepared & Analyzed: 01/28/22

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	"							
Surrogate: 2-Methylnaphthalene-d10	0.0208		"	0.0333	62.3	40-150				
Surrogate: Fluoranthene-d10	0.0227		"	0.0333	68.0	40-150				

LCS (BFA0484-BS1)

Prepared & Analyzed: 01/28/22

Acenaphthene	0.0248	0.00500	mg/kg	0.0333	74.4	31-137				
Anthracene	0.0264	0.00500	"	0.0333	79.2	30-120				
Benzo (a) anthracene	0.0248	0.00500	"	0.0333	74.4	30-120				
Benzo (a) pyrene	0.0263	0.00500	"	0.0333	78.8	30-120				
Benzo (b) fluoranthene	0.0263	0.00500	"	0.0333	79.0	30-120				
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	93.4	30-120				
Chrysene	0.0274	0.00500	"	0.0333	82.2	30-120				
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333	77.1	30-120				
Fluoranthene	0.0265	0.00500	"	0.0333	79.6	30-120				
Fluorene	0.0257	0.00500	"	0.0333	77.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	79.8	30-120				
Pyrene	0.0292	0.00500	"	0.0333	87.7	35-142				
1-Methylnaphthalene	0.0254	0.00500	"	0.0333	76.3	35-142				
2-Methylnaphthalene	0.0236	0.00500	"	0.0333	70.9	35-142				
Surrogate: 2-Methylnaphthalene-d10	0.0259		"	0.0333	77.6	40-150				
Surrogate: Fluoranthene-d10	0.0256		"	0.0333	76.8	40-150				

Summit Scientific

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

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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 BFA0484 - EPA 5030 Soil MS

Matrix Spike (BFA0484-MS1)	Source: 2201326-01			Prepared: 01/28/22 Analyzed: 01/29/22						
Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.3	31-137			
Anthracene	0.0241	0.00500	"	0.0333	ND	72.4	30-120			
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	68.9	30-120			
Benzo (a) pyrene	0.0228	0.00500	"	0.0333	ND	68.4	30-120			
Benzo (b) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120			
Benzo (k) fluoranthene	0.0290	0.00500	"	0.0333	ND	87.0	30-120			
Chrysene	0.0251	0.00500	"	0.0333	ND	75.4	30-120			
Dibenz (a,h) anthracene	0.0235	0.00500	"	0.0333	ND	70.5	30-120			
Fluoranthene	0.0236	0.00500	"	0.0333	ND	70.7	30-120			
Fluorene	0.0229	0.00500	"	0.0333	ND	68.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0259	0.00500	"	0.0333	ND	77.7	30-120			
Pyrene	0.0280	0.00500	"	0.0333	ND	84.1	35-142			
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.5	15-130			
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0241		"	0.0333		72.2	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.8	40-150			

Matrix Spike Dup (BFA0484-MSD1)	Source: 2201326-01			Prepared: 01/28/22 Analyzed: 01/29/22						
Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.1	31-137	1.73	30	
Anthracene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	4.26	30	
Benzo (a) anthracene	0.0225	0.00500	"	0.0333	ND	67.4	30-120	2.29	30	
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	4.37	30	
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.4	30-120	3.64	30	
Benzo (k) fluoranthene	0.0291	0.00500	"	0.0333	ND	87.2	30-120	0.225	30	
Chrysene	0.0246	0.00500	"	0.0333	ND	73.8	30-120	2.18	30	
Dibenz (a,h) anthracene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	8.01	30	
Fluoranthene	0.0232	0.00500	"	0.0333	ND	69.6	30-120	1.54	30	
Fluorene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	1.97	30	
Indeno (1,2,3-cd) pyrene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	5.80	30	
Pyrene	0.0251	0.00500	"	0.0333	ND	75.4	35-142	10.9	30	
1-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.6	15-130	1.47	50	
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.4	15-130	2.52	50	
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.0	40-150			
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.0	40-150			

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0718 - EPA 3050B

Blank (BFC0718-BLK1)

Prepared: 03/30/22 Analyzed: 04/02/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BFC0718-BS1)

Prepared: 03/30/22 Analyzed: 04/02/22

Arsenic	38.0	0.200	mg/kg wet	40.0	94.9	80-120				
Barium	35.9	0.400	"	40.0	89.8	80-120				
Selenium	3.60	0.260	"	4.00	90.1	80-120				

Duplicate (BFC0718-DUP1)

Source: 2201334-10

Prepared: 03/30/22 Analyzed: 04/02/22

Arsenic	1.78	0.200	mg/kg dry	1.89	5.88	20				
Barium	120	0.400	"	117	2.40	20				
Selenium	1.29	0.260	"	1.25	3.04	20				

Matrix Spike (BFC0718-MS1)

Source: 2201334-10

Prepared: 03/30/22 Analyzed: 04/02/22

Arsenic	42.8	0.200	mg/kg dry	50.4	1.89	81.2	75-125			
Barium	214	0.400	"	50.4	117	192	75-125			QM-05
Selenium	6.50	0.260	"	5.04	1.25	104	75-125			

Matrix Spike Dup (BFC0718-MSD1)

Source: 2201334-10

Prepared: 03/30/22 Analyzed: 04/02/22

Arsenic	44.6	0.200	mg/kg dry	50.4	1.89	84.9	75-125	4.26	25	
Barium	224	0.400	"	50.4	117	211	75-125	4.31	25	QM-05
Selenium	5.70	0.260	"	5.04	1.25	88.3	75-125	13.2	25	

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFB0165 - 3060A Mod

Blank (BFB0165-BLK1)

Prepared & Analyzed: 02/15/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFB0165-BS1)

Prepared & Analyzed: 02/15/22

Chromium, Hexavalent 26.7 0.30 mg/kg wet 25.0 107 80-120

Duplicate (BFB0165-DUP1)

Source: 2201305-01

Prepared & Analyzed: 02/15/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFB0165-MS1)

Source: 2201305-01

Prepared & Analyzed: 02/15/22

Chromium, Hexavalent 32.3 0.30 mg/kg dry 31.0 ND 104 75-125

Matrix Spike Dup (BFB0165-MSD1)

Source: 2201305-01

Prepared & Analyzed: 02/15/22

Chromium, Hexavalent 34.8 0.30 mg/kg dry 31.0 ND 112 75-125 7.57 20

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BFA0446 - General Preparation

Duplicate (BFA0446-DUP1)		Source: 2201307-03		Prepared: 01/27/22 Analyzed: 01/28/22	
% Solids	84.5		%	84.3	0.253 20

Batch BFC0749 - General Preparation

Duplicate (BFC0749-DUP1)		Source: 2201334-10		Prepared: 03/31/22 Analyzed: 04/01/22	
% Solids	78.8		%	79.4	0.862 20

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFC0546 - General Preparation

LCS (BFC0546-BS1)

Prepared & Analyzed: 03/24/22

pH	9.13		pH Units	9.18		99.5	95-105		
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Duplicate (BFC0546-DUP1)

Source: 2201245-03

Prepared & Analyzed: 03/24/22

pH	8.31		pH Units	8.28				0.362	20
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Batch BFC0644 - General Preparation

LCS (BFC0644-BS1)

Prepared: 03/28/22 Analyzed: 03/29/22

pH	9.17		pH Units	9.18		99.9	95-105		
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Duplicate (BFC0644-DUP1)

Source: 2201334-10

Prepared: 03/28/22 Analyzed: 03/29/22

pH	8.40		pH Units	8.47				0.830	20
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Summit Scientific
Muri Premer
4653 Table Mountain Dr
Golden, CO 80403

RE: 2201334
Work Order Number: 2201520

March 18, 2022

Attention Muri Premer:

Fremont Analytical, Inc. received 10 sample(s) on 1/31/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
pH by SM 4500H+B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Paul Shrewsbury

CLIENT: Summit Scientific
Project: 2201334
Work Order: 2201520

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201520-001	SS01@2.5'	01/26/2022 12:02 PM	01/31/2022 9:56 AM
2201520-001	SS01@2.5'	01/26/2022 12:02 PM	01/31/2022 9:56 AM
2201520-002	SS02@2.5'	01/26/2022 12:04 PM	01/31/2022 9:56 AM
2201520-003	SS03@2.5'	01/26/2022 12:06 PM	01/31/2022 9:56 AM
2201520-004	SS04@2.5'	01/26/2022 12:08 PM	01/31/2022 9:56 AM
2201520-005	FS01@6'	01/26/2022 12:10 PM	01/31/2022 9:56 AM
2201520-006	FS02@8'	01/26/2022 1:20 PM	01/31/2022 9:56 AM
2201520-007	SEP01-DL01@3'	01/26/2022 1:35 PM	01/31/2022 9:56 AM
2201520-008	SEP01-DL02@3'	01/26/2022 1:45 PM	01/31/2022 9:56 AM
2201520-009	SEP01-FL01@3'	01/26/2022 1:47 PM	01/31/2022 9:56 AM
2201520-010	AST01@0.5'	01/26/2022 12:35 PM	01/31/2022 9:56 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Summit Scientific

Project: 2201334

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared Saturated Paste Method provided by client.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Summit Scientific

Collection Date: 1/26/2022 12:02:00 PM

Project: 2201334

Lab ID: 2201520-001

Matrix: Soil

Client Sample ID: SS01 @2.5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.168	0.00991		mg/L	1	2/23/2022 10:50:17 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.180	0		mEq/L	1	3/15/2022 12:00:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73009		Analyst: MCH
Percent Moisture	14.4	0.500		wt%	1	2/3/2022 11:53:46 AM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	50.8	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	7.64			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 12:04:00 PM

Project: 2201334

Lab ID: 2201520-002

Matrix: Soil

Client Sample ID: SS02@2.5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.194	0.00989		mg/L	1	2/23/2022 10:51:27 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0994	0		mEq/L	1	3/15/2022 12:03:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73009		Analyst: MCH
Percent Moisture	15.2	0.500		wt%	1	2/3/2022 11:53:46 AM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	41.4	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	7.90			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 12:06:00 PM

Project: 2201334

Lab ID: 2201520-003

Matrix: Soil

Client Sample ID: SS03@2.5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.128	0.00935		mg/L	1	2/23/2022 10:52:37 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.152	0		mEq/L	1	3/15/2022 12:07:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73009		Analyst: MCH
Percent Moisture	16.5	0.500		wt%	1	2/3/2022 11:53:46 AM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	57.2	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	8.59			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 12:08:00 PM

Project: 2201334

Lab ID: 2201520-004

Matrix: Soil

Client Sample ID: SS04@2.5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.176	0.00917		mg/L	1	2/23/2022 10:53:47 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0433	0		mEq/L	1	3/15/2022 12:10:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	12.7	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	41.9	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	8.73			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 12:10:00 PM

Project: 2201334

Lab ID: 2201520-005

Matrix: Soil

Client Sample ID: FS01 @6'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.163	0.00984		mg/L	1	2/23/2022 10:54:57 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.226	0		mEq/L	1	3/15/2022 12:13:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	16.0	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	80.2	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	8.57			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 1:20:00 PM

Project: 2201334

Lab ID: 2201520-006

Matrix: Soil

Client Sample ID: FS02@8'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35415 Analyst: EH

Arsenic	5.76	0.114		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Barium	207	0.570		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Cadmium	0.274	0.190		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Copper	19.7	0.949		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Lead	13.4	0.190		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Nickel	17.1	0.475		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Selenium	3.15	0.190		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Silver	ND	0.142		mg/Kg-dry	1	2/18/2022 5:19:05 PM
Zinc	80.5	1.66		mg/Kg-dry	1	2/18/2022 5:19:05 PM

Total Metals by EPA Method 6020B

Batch ID: 35373 Analyst: EH

Boron	0.309	0.00974		mg/L	1	2/23/2022 10:56:06 AM
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Sodium Adsorption Ratio

Batch ID: 35733 Analyst: WC

Sodium Adsorption Ratio (SAR)	0.688	0		mEq/L	1	3/15/2022 12:17:00 PM
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Sample Moisture (Percent Moisture)

Batch ID: R73031 Analyst: MCH

Percent Moisture	22.5	0.500		wt%	1	2/3/2022 3:36:40 PM
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Conductivity by SM 2510B

Batch ID: R73929 Analyst: ALT

Specific Conductance (Conductivity)	91.8	1.00		µS/cm	1	3/11/2022 12:25:00 PM
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pH by SM 4500H+B

Batch ID: R73986 Analyst: ALT

Hydrogen Ion (pH)	8.87			pH	1	3/10/2022 2:33:00 PM
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Client: Summit Scientific

Collection Date: 1/26/2022 1:35:00 PM

Project: 2201334

Lab ID: 2201520-007

Matrix: Soil

Client Sample ID: SEP01-DL01 @3'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.399	0.00921		mg/L	1	2/23/2022 10:57:16 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0746	0		mEq/L	1	3/15/2022 12:28:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	17.5	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	40.8	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	8.77			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 1:45:00 PM

Project: 2201334

Lab ID: 2201520-008

Matrix: Soil

Client Sample ID: SEP01-DL02@3'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.414	0.00947		mg/L	1	2/23/2022 10:58:26 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.110	0		mEq/L	1	3/15/2022 12:31:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	19.6	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	39.2	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	7.47			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 1:47:00 PM

Project: 2201334

Lab ID: 2201520-009

Matrix: Soil

Client Sample ID: SEP01-FL01@3'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	1.25	0.00999		mg/L	1	2/23/2022 11:06:43 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0683	0		mEq/L	1	3/15/2022 12:34:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	22.9	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	38.2	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	7.62			pH	1	3/10/2022 2:33:00 PM



Client: Summit Scientific

Collection Date: 1/26/2022 12:35:00 PM

Project: 2201334

Lab ID: 2201520-010

Matrix: Soil

Client Sample ID: AST01 @0.5'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020B</u>				Batch ID: 35373		Analyst: EH
Boron	0.133	0.00968		mg/L	1	2/23/2022 11:07:53 AM
<u>Sodium Adsorption Ratio</u>				Batch ID: 35733		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.0631	0		mEq/L	1	3/15/2022 12:38:00 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R73031		Analyst: MCH
Percent Moisture	13.4	0.500		wt%	1	2/3/2022 3:36:40 PM
<u>Conductivity by SM 2510B</u>				Batch ID: R73929		Analyst: ALT
Specific Conductance (Conductivity)	42.0	1.00		µS/cm	1	3/11/2022 12:25:00 PM
<u>pH by SM 4500H+B</u>				Batch ID: R73986		Analyst: ALT
Hydrogen Ion (pH)	7.70			pH	1	3/10/2022 2:33:00 PM

Work Order: 2201520
CLIENT: Summit Scientific
Project: 2201334

QC SUMMARY REPORT
Conductivity by SM 2510B

Sample ID: MB-R73929	SampType: MBLK	Units: µS/cm	Prep Date: 3/11/2022	RunNo: 73929							
Client ID: MBLKW	Batch ID: R73929		Analysis Date: 3/11/2022	SeqNo: 1514505							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance (Conductivity) ND 1.00

Sample ID: LCS-R73929	SampType: LCS	Units: µS/cm	Prep Date: 3/11/2022	RunNo: 73929							
Client ID: LCSW	Batch ID: R73929		Analysis Date: 3/11/2022	SeqNo: 1514506							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance (Conductivity) 984 1.00 1,000 0 98.4 98 104

Sample ID: 2201448-001ADUP	SampType: DUP	Units: µS/cm	Prep Date: 3/11/2022	RunNo: 73929							
Client ID: BATCH	Batch ID: R73929		Analysis Date: 3/11/2022	SeqNo: 1514508							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance (Conductivity) 60.1 1.00 59.60 0.835 20

Sample ID: 2203280-001ADUP	SampType: DUP	Units: µS/cm	Prep Date: 3/11/2022	RunNo: 73929							
Client ID: BATCH	Batch ID: R73929		Analysis Date: 3/11/2022	SeqNo: 1514524							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Specific Conductance (Conductivity) 239 1.00 240.0 0.418 20

Work Order: 2201520
 CLIENT: Summit Scientific
 Project: 2201334

QC SUMMARY REPORT
pH by SM 4500H+B

Sample ID: MB-R73986	SampType: MBLK	Units: pH	Prep Date: 3/10/2022	RunNo: 73986							
Client ID: MBLKW	Batch ID: R73986		Analysis Date: 3/10/2022	SeqNo: 1515987							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hydrogen Ion (pH) 7.68

Sample ID: LCS-R73986	SampType: LCS	Units: pH	Prep Date: 3/10/2022	RunNo: 73986							
Client ID: LCSW	Batch ID: R73986		Analysis Date: 3/10/2022	SeqNo: 1515988							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hydrogen Ion (pH) 7.06 7.000 0 101 95 105

Sample ID: 2202246-002ADUP	SampType: DUP	Units: pH	Prep Date: 3/10/2022	RunNo: 73986							
Client ID: BATCH	Batch ID: R73986		Analysis Date: 3/10/2022	SeqNo: 1515991							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hydrogen Ion (pH) 7.69 7.750 0.777 10

Work Order: 2201520
 CLIENT: Summit Scientific
 Project: 2201334

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-35415	SampType: MBLK	Units: mg/Kg	Prep Date: 2/17/2022	RunNo: 73410							
Client ID: MBLKS	Batch ID: 35415		Analysis Date: 2/17/2022	SeqNo: 1499890							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.100									
Barium	ND	0.500									
Cadmium	ND	0.167									
Copper	ND	0.833									
Lead	ND	0.167									
Nickel	ND	0.417									
Selenium	ND	0.167									
Silver	ND	0.125									
Zinc	ND	1.46									

Sample ID: LCS-35415	SampType: LCS	Units: mg/Kg	Prep Date: 2/17/2022	RunNo: 73410							
Client ID: LCSS	Batch ID: 35415		Analysis Date: 2/17/2022	SeqNo: 1499891							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	35.8	0.0984	40.98	0	87.5	80	120				
Barium	40.6	0.492	40.98	0	99.2	80	120				
Cadmium	1.95	0.164	2.049	0	95.0	80	120				
Copper	36.2	0.820	40.98	0	88.3	80	120				
Lead	19.9	0.164	20.49	0	97.0	80	120				
Nickel	35.6	0.410	40.98	0	86.8	80	120				
Selenium	3.40	0.164	4.098	0	82.9	80	120				
Silver	2.02	0.123	2.049	0	98.6	80	120				
Zinc	33.8	1.43	40.98	0	82.6	80	120				

Sample ID: 2201506-002AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 2/17/2022	RunNo: 73410							
Client ID: BATCH	Batch ID: 35415		Analysis Date: 2/17/2022	SeqNo: 1499894							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	40.6	0.102	42.50	3.098	88.1	75	125				
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Work Order: 2201520
 CLIENT: Summit Scientific
 Project: 2201334

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: 2201506-002AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 2/17/2022		RunNo: 73410			
Client ID: BATCH		Batch ID: 35415				Analysis Date: 2/17/2022		SeqNo: 1499894			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	308	0.510	42.50	263.9	103	75	125				E
Cadmium	2.26	0.170	2.125	0.1768	98.1	75	125				
Copper	43.8	0.850	42.50	8.894	82.2	75	125				
Lead	25.4	0.170	21.25	9.081	76.8	75	125				
Nickel	42.7	0.425	42.50	6.631	85.0	75	125				
Selenium	4.86	0.170	4.250	1.316	83.3	75	125				
Silver	1.99	0.127	2.125	0	93.8	75	125				
Zinc	59.8	1.49	42.50	28.43	73.7	75	125				S

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: 2201506-002AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 2/17/2022		RunNo: 73410			
Client ID: BATCH		Batch ID: 35415				Analysis Date: 2/17/2022		SeqNo: 1499895			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.4	0.101	42.17	3.098	97.9	75	125	40.55	9.00	20	
Barium	331	0.506	42.17	263.9	160	75	125	307.7	7.40	20	ES
Cadmium	2.45	0.169	2.108	0.1768	108	75	125	2.262	8.11	20	
Copper	46.1	0.843	42.17	8.894	88.2	75	125	43.84	5.02	20	
Lead	28.2	0.169	21.08	9.081	90.4	75	125	25.41	10.3	20	
Nickel	45.0	0.422	42.17	6.631	91.1	75	125	42.75	5.21	20	
Selenium	5.55	0.169	4.217	1.316	100	75	125	4.856	13.3	20	
Silver	2.17	0.127	2.108	0	103	75	125	1.992	8.50	20	
Zinc	64.7	1.48	42.17	28.43	86.0	75	125	59.75	7.97	20	

NOTES:

S - Analyte concentration was too high for accurate spike recovery(ies).

Work Order: 2201520
 CLIENT: Summit Scientific
 Project: 2201334

QC SUMMARY REPORT
Total Metals by EPA Method 6020B

Sample ID: MB-35373	SampType: MBLK	Units: mg/L	Prep Date: 2/14/2022	RunNo: 73528							
Client ID: MBLKS	Batch ID: 35373	Analysis Date: 2/23/2022	SeqNo: 1502768								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron ND 0.0100

Sample ID: LCS-35373	SampType: LCS	Units: mg/L	Prep Date: 2/14/2022	RunNo: 73528							
Client ID: LCSS	Batch ID: 35373	Analysis Date: 2/23/2022	SeqNo: 1502769								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 5.08 0.0100 5.000 0 102 80 120

Sample ID: 2201506-001BDUP	SampType: DUP	Units: mg/L	Prep Date: 2/14/2022	RunNo: 73528							
Client ID: BATCH	Batch ID: 35373	Analysis Date: 2/23/2022	SeqNo: 1502771								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 0.130 0.00989 0.1271 2.00 20

Sample ID: 2201506-001BMS	SampType: MS	Units: mg/L	Prep Date: 2/14/2022	RunNo: 73528							
Client ID: BATCH	Batch ID: 35373	Analysis Date: 2/23/2022	SeqNo: 1502772								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 1.25 0.00953 4.766 0.1271 23.6 75 125 S

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: 2201506-001BMSD	SampType: MSD	Units: mg/L	Prep Date: 2/14/2022	RunNo: 73528							
Client ID: BATCH	Batch ID: 35373	Analysis Date: 2/23/2022	SeqNo: 1502773								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 1.51 0.00977 4.883 0.1271 28.3 75 125 1.253 18.7 20 S

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2201520
 CLIENT: Summit Scientific
 Project: 2201334

QC SUMMARY REPORT
Sodium Adsorption Ratio

Sample ID: MB-35733	SampType: MBLK	Units: µg/L	Prep Date: 3/15/2022	RunNo: 74028							
Client ID: MBLKW	Batch ID: 35733		Analysis Date: 3/15/2022	SeqNo: 1516953							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									

Sample ID: LCS-35733	SampType: LCS	Units: µg/L	Prep Date: 3/15/2022	RunNo: 74028							
Client ID: LCSW	Batch ID: 35733		Analysis Date: 3/15/2022	SeqNo: 1516954							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Calcium	1,090	200	1,000	0	109	50	150				
Magnesium	1,060	100	1,000	0	106	50	150				
Sodium	1,050	200	1,000	0	105	50	150				

Sample ID: 2202246-002ADUP	SampType: DUP	Units: mEq/L	Prep Date: 3/15/2022	RunNo: 74028							
Client ID: BATCH	Batch ID: 35733		Analysis Date: 3/15/2022	SeqNo: 1518041							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio (SAR)	0.305	0						0.3063	0.294	30	
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Client Name: SUMSCI	Work Order Number: 2201520
Logged by: Gabrielle Coeuille	Date Received: 1/31/2022 9:56:00 AM

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Present
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >2°C to 6°C * Unknown prior to receipt Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample 1	10.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1.27.22 Page: 1 of 1
Project Name: 2201334

Laboratory Project No (Internal): 22015220
Special Remarks:

Client: Summit Scientific
Address: 4653 Table Mountain Drive
City, State, zip: Golden, CO, 80403
Telephone: 303-277-9310

City, State, zip: Golden, CO, 80403
Telephone: 303-277-9310
Fax:

Collected by: _____
Location: _____
Report To (PM): _____
PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com
Sample Disposal: return to client disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Comments
1 550102.S'	1-26-22	1202	S	<p style="text-align: center;">SARFELPH B W/ METALS</p> <p>B by hot water soluble SARFELPH by saturated Pade</p> <p>Metals: As, Ba, Cd, Cu, Pb, Ni, Se, Hg, Zn</p>
2 550202.S'		1204	X	
3 550302.S'		1206	X	
4 550402.S'		1208	X	
5 550106'		1210	X	
6 F50208'		1326	X	
7 SEP01-010103'		1335		
8 SEP01-010203'		1345		
9 SEP01-FL0103'		1347		
10 AST0100.S'		1335		

**Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Individual: _____

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Retinquished: _____ Date/Time: 1.27.22
 Received: _____ Date/Time: 1/31/22
 Received: _____ Date/Time: _____

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

Project: Noble - Frank 1,12-2,7-4 FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/04/22 11:01

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.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

June 01, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Frank 1,12-02,7-4

Work Order #2205218

Enclosed are the results of analyses for samples received by Summit Scientific on 05/13/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature reads "Muri Premer" in a cursive script.

Muri Premer For Paul Shrewsbury

President

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@8-10'	2205218-01	Soil	05/13/22 09:15	05/13/22 16:00
BH01@15-17'	2205218-02	Soil	05/13/22 10:30	05/13/22 16:00
BH02@6-8'	2205218-03	Soil	05/13/22 11:10	05/13/22 16:00
BH02@15-17'	2205218-04	Soil	05/13/22 11:20	05/13/22 16:00
BH03@6-8'	2205218-05	Soil	05/13/22 10:50	05/13/22 16:00
BH03@15-17'	2205218-06	Soil	05/13/22 11:00	05/13/22 16:00
BH04@6-8'	2205218-07	Soil	05/13/22 12:10	05/13/22 16:00
BH04@15-17'	2205218-08	Soil	05/13/22 12:20	05/13/22 16:00
BH05@6-8'	2205218-09	Soil	05/13/22 11:40	05/13/22 16:00
BH05@15-17'	2205218-10	Soil	05/13/22 11:50	05/13/22 16:00

Summit Scientific



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

Summit Scientific

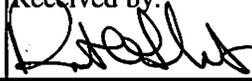
S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Jacob Evans
 Address: 6855 W. 119th Ave. E-Mail: jwhritenour@tasman-geo.com/ Noble Group
 City/State/Zip: Broomfield / CO/ 80020
 Phone: 303-827-1511 Project Name: Frank 1, 12-02, 7-4
 Sampler Name: Hunter Merlo Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	metals - 915		
1	BH01 @ 8-10'	5/13/22	0915	2			X			X				X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	BH01 @ 15-17'		1030	2			X			X											
3	BH02 @ 6-8'		1110	2			X			X											
4	BH02 @ 15-17'		1120	2			X			X											
5	BH03 @ 6-8'		1050	2			X			X											
6	BH03 @ 15-17'		1100	2			X			X											
7	BH04 @ 6-8'		1210	2			X			X											
8	BH04 @ 15-17'		1220	2			X			X											
9	BH05 @ 6-8'		1140	2			X			X											
10	BH05 @ 15-17'		1150	2			X			X											

Relinquished by: 	Date/Time: 5/13/22	Received by: Tasman's Lock Box Summit	Date/Time: 5/13/22	Turn Around Time (Check) ___ Same Day 72 hours ___ 24 hours <input checked="" type="checkbox"/> Standard ___ 48 hours Sample Integrity: Temperature Upon Receipt: <u>6.8</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 5/13/22 1600	Received by: 	Date/Time: 5/13/22 1600		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2205218

Client: Noble/Asmem Client Project ID: Frank 1,12-02,74

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

Grid with a minus sign in the second cell.

Matrix (Check all that apply) Air [] Soil/Solid [x] Water [] Other []

Temp (°C) 6.8 Thermometer # 1

Table with 5 columns: Question, Yes, No, N/A, Comments (if any). Rows include questions about cooling, sample integrity, volume, custody seals, hold times, COC forms, and preservation.

Additional Comments (if any):

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

Signature of Custodian Printed Name

51322 Date/Time

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@8-10'
2205218-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.0073	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	0.15	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	540	50		"	100	"	"	"	"	

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		157 %		50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	420	50		mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		87.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@8-10'
2205218-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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	0.0319	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0977	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.992	0.500	"	100	"	"	"	"	
2-Methylnaphthalene	2.82	0.500	"	"	"	"	"	"	

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		99.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.232	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@8-10'
2205218-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.56	0.238	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B
Barium	108	0.476	"	"	"	"	"	"
Cadmium	ND	0.238	"	"	"	"	"	"
Copper	5.73	0.476	"	"	"	"	"	"
Lead	5.39	0.238	"	"	"	"	"	"
Nickel	6.08	0.476	"	"	"	"	"	"
Selenium	0.541	0.309	"	"	"	"	"	"
Silver	0.0375	0.0238	"	"	"	"	"	"
Zinc	24.4	0.476	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1130	0.0595	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	274	0.0595	"	"	"	"	"	"	
Sodium	388	0.0595	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.68	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@8-10'
2205218-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.1	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.92	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.64		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@15-17'
2205218-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@15-17'
2205218-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0933	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@15-17'
2205218-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.98	0.239	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B
Barium	25.9	0.478	"	"	"	"	"	"
Cadmium	ND	0.239	"	"	"	"	"	"
Copper	4.13	0.478	"	"	"	"	"	"
Lead	3.94	0.239	"	"	"	"	"	"
Nickel	3.51	0.478	"	"	"	"	"	"
Selenium	0.530	0.311	"	"	"	"	"	"
Silver	ND	0.0239	"	"	"	"	"	"
Zinc	16.4	0.478	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	567	0.0598	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	122	0.0598	"	"	"	"	"	"	
Sodium	59.3	0.0598	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.590	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH01@15-17'
2205218-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.6		%	1	BFE0494	05/23/22	05/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.535	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@6-8'
2205218-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	0.011	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	10	0.50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		94.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		177 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	190	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.5 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@6-8'
2205218-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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	0.0128	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: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		82.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.300	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@6-8'
2205218-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.62	0.233	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B	
Barium	65.7	0.467	"	"	"	"	"	"	
Cadmium	ND	0.233	"	"	"	"	"	"	
Copper	7.64	0.467	"	"	"	"	"	"	
Lead	5.50	0.233	"	"	"	"	"	"	
Nickel	5.90	0.467	"	"	"	"	"	"	
Selenium	0.497	0.303	"	"	"	"	"	"	
Silver	0.0339	0.0233	"	"	"	"	"	"	
Zinc	30.3	0.467	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	569	0.0584	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	299	0.0584	"	"	"	"	"	"	
Sodium	943	0.0584	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.96	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@6-8'
2205218-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.7	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.75	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@15-17'
2205218-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.6 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@15-17'
2205218-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.129	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@15-17'
2205218-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.65	0.246	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B
Barium	52.1	0.492	"	"	"	"	"	"
Cadmium	ND	0.246	"	"	"	"	"	"
Copper	8.94	0.492	"	"	"	"	"	"
Lead	7.74	0.246	"	"	"	"	"	"
Nickel	7.79	0.492	"	"	"	"	"	"
Selenium	1.50	0.320	"	"	"	"	"	"
Silver	0.0367	0.0246	"	"	"	"	"	"
Zinc	31.1	0.492	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 05/13/22 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 05/13/22 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1310	0.0615	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	248	0.0615	"	"	"	"	"	"	
Sodium	88.2	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 05/13/22 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.586	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/13/22 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH02@15-17'
2205218-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.3	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.644	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.33		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@6-8'
2205218-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.1 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@6-8'
2205218-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0679	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@6-8'
2205218-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.83	0.232	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B	
Barium	52.3	0.464	"	"	"	"	"	"	
Cadmium	ND	0.232	"	"	"	"	"	"	
Copper	3.63	0.464	"	"	"	"	"	"	
Lead	3.36	0.232	"	"	"	"	"	"	
Nickel	3.91	0.464	"	"	"	"	"	"	
Selenium	0.448	0.302	"	"	"	"	"	"	
Silver	ND	0.0232	"	"	"	"	"	"	
Zinc	15.1	0.464	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1140	0.0580	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	316	0.0580	"	"	"	"	"	"	
Sodium	52.2	0.0580	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.353	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@6-8'
2205218-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.2			%	1	BFE0494	05/23/22	05/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.493	0.0100		mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.56			pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@15-17'
2205218-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.0 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@15-17'
2205218-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0850	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@15-17'
2205218-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.54	0.241	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B	
Barium	49.2	0.482	"	"	"	"	"	"	
Cadmium	ND	0.241	"	"	"	"	"	"	
Copper	6.27	0.482	"	"	"	"	"	"	
Lead	5.14	0.241	"	"	"	"	"	"	
Nickel	6.12	0.482	"	"	"	"	"	"	
Selenium	0.524	0.313	"	"	"	"	"	"	
Silver	ND	0.0241	"	"	"	"	"	"	
Zinc	24.8	0.482	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	705	0.0602	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	185	0.0602	"	"	"	"	"	"	
Sodium	68.3	0.0602	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.592	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH03@15-17'
2205218-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.1		%	1	BFE0494	05/23/22	05/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.602	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

Summit Scientific

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@6-8'
2205218-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	0.66	0.50	"	"	"	"	"	"	

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		144 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	65	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.8 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@6-8'
2205218-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0772	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@6-8'
2205218-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.47	0.218	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B
Barium	31.1	0.435	"	"	"	"	"	"
Cadmium	ND	0.218	"	"	"	"	"	"
Copper	2.93	0.435	"	"	"	"	"	"
Lead	2.73	0.218	"	"	"	"	"	"
Nickel	2.99	0.435	"	"	"	"	"	"
Selenium	0.358	0.283	"	"	"	"	"	"
Silver	0.0263	0.0218	"	"	"	"	"	"
Zinc	12.0	0.435	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	644	0.0544	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	437	0.0544	"	"	"	"	"	"	
Sodium	111	0.0544	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.827	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@6-8'
2205218-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.9	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.36	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@15-17'
2205218-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.3 %	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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@15-17'
2205218-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0868	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@15-17'
2205218-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.18	0.231	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B
Barium	55.6	0.462	"	"	"	"	"	"
Cadmium	ND	0.231	"	"	"	"	"	"
Copper	6.11	0.462	"	"	"	"	"	"
Lead	5.59	0.231	"	"	"	"	"	"
Nickel	6.58	0.462	"	"	"	"	"	"
Selenium	0.655	0.300	"	"	"	"	"	"
Silver	0.0270	0.0231	"	"	"	"	"	"
Zinc	27.1	0.462	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 05/13/22 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 05/13/22 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	971	0.0577	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	176	0.0577	"	"	"	"	"	"	
Sodium	55.2	0.0577	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 05/13/22 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.429	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/13/22 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH04@15-17'
2205218-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.6	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.503	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@6-8'
2205218-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	0.067	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	39	0.50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		131 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		277 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	100	50	mg/kg	1	BFE0374	05/18/22	05/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@6-8'
2205218-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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	0.0121	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0816	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.479	0.0500	"	10	"	"	"	"	
2-Methylnaphthalene	0.700	0.0500	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.234	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@6-8'
2205218-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.61	0.256	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B	
Barium	162	0.513	"	"	"	"	"	"	
Cadmium	0.276	0.256	"	"	"	"	"	"	
Copper	18.0	0.513	"	"	"	"	"	"	
Lead	11.1	0.256	"	"	"	"	"	"	
Nickel	13.6	0.513	"	"	"	"	"	"	
Selenium	1.12	0.333	"	"	"	"	"	"	
Silver	0.0861	0.0256	"	"	"	"	"	"	
Zinc	61.6	0.513	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 05/13/22 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 05/13/22 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1330	0.0641	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	1030	0.0641	"	"	"	"	"	"	
Sodium	542	0.0641	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 05/13/22 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.71	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/13/22 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@6-8'
2205218-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.0	%	1	BFE0494	05/23/22	05/23/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.45	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@15-17'
2205218-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0370	05/18/22	05/19/22	EPA 8260B	
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	0.53	0.50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0374	05/18/22	05/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@15-17'
2205218-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0373	05/18/22	05/21/22	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: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0765	0.0100	mg/L	1	BFE0454	05/20/22	05/26/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@15-17'
2205218-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.530	0.231	mg/kg dry	1	BFE0535	05/24/22	05/25/22	EPA 6020B	
Barium	16.9	0.462	"	"	"	"	"	"	
Cadmium	ND	0.231	"	"	"	"	"	"	
Copper	2.71	0.462	"	"	"	"	"	"	
Lead	2.72	0.231	"	"	"	"	"	"	
Nickel	2.21	0.462	"	"	"	"	"	"	
Selenium	0.307	0.300	"	"	"	"	"	"	
Silver	ND	0.0231	"	"	"	"	"	"	
Zinc	11.0	0.462	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 05/13/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFE0492	05/23/22	05/23/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 05/13/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2090	0.0578	mg/L dry	1	BFE0475	05/22/22	05/27/22	EPA 6020B	
Magnesium	1080	0.0578	"	"	"	"	"	"	
Sodium	703	0.0578	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 05/13/22 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.11	0.00100	units	1	BFE0646	05/27/22	05/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

BH05@15-17'
2205218-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFE0494	05/23/22	05/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.106	0.0100	mmhos/cm	1	BFE0477	05/22/22	05/23/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **05/13/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.18		pH Units	1	BFE0476	05/22/22	05/23/22	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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 BFE0370 - EPA 5030 Soil MS

Blank (BFE0370-BLK1)

Prepared: 05/18/22 Analyzed: 05/19/22

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>	0.0384		"	0.0400		96.0	50-150				
<i>Surrogate: Toluene-d8</i>	0.0395		"	0.0400		98.8	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0390		"	0.0400		97.4	50-150				

LCS (BFE0370-BS1)

Prepared: 05/18/22 Analyzed: 05/19/22

Benzene	0.0639	0.0020	mg/kg	0.0750		85.2	70-130				
Toluene	0.0629	0.0050	"	0.0750		83.9	70-130				
Ethylbenzene	0.0589	0.0050	"	0.0750		78.5	70-130				
m,p-Xylene	0.135	0.010	"	0.150		89.8	70-130				
o-Xylene	0.0634	0.0050	"	0.0750		84.5	70-130				
1,2,4-Trimethylbenzene	0.0597	0.0050	"	0.0750		79.6	70-130				
1,3,5-Trimethylbenzene	0.0583	0.0050	"	0.0750		77.8	70-130				
Naphthalene	0.0790	0.0038	"	0.0750		105	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0367		"	0.0400		91.8	50-150				
<i>Surrogate: Toluene-d8</i>	0.0400		"	0.0400		100	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0396		"	0.0400		99.0	50-150				

Matrix Spike (BFE0370-MS1)

Source: 2205218-02

Prepared: 05/18/22 Analyzed: 05/19/22

Benzene	0.0640	0.0020	mg/kg	0.0750	ND	85.4	70-130				
Toluene	0.0649	0.0050	"	0.0750	ND	86.6	70-130				
Ethylbenzene	0.0614	0.0050	"	0.0750	ND	81.9	70-130				
m,p-Xylene	0.142	0.010	"	0.150	ND	94.3	70-130				
o-Xylene	0.0665	0.0050	"	0.0750	ND	88.7	70-130				
1,2,4-Trimethylbenzene	0.0635	0.0050	"	0.0750	ND	84.7	70-130				
1,3,5-Trimethylbenzene	0.0619	0.0050	"	0.0750	ND	82.5	70-130				
Naphthalene	0.0817	0.0038	"	0.0750	ND	109	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0367		"	0.0400		91.8	50-150				
<i>Surrogate: Toluene-d8</i>	0.0400		"	0.0400		99.9	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0401		"	0.0400		100	50-150				

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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 BFE0370 - EPA 5030 Soil MS

Matrix Spike Dup (BFE0370-MSD1)	Source: 2205218-02			Prepared: 05/18/22 Analyzed: 05/19/22						
Benzene	0.0647	0.0020	mg/kg	0.0750	ND	86.3	70-130	1.07	30	
Toluene	0.0648	0.0050	"	0.0750	ND	86.4	70-130	0.139	30	
Ethylbenzene	0.0606	0.0050	"	0.0750	ND	80.8	70-130	1.28	30	
m,p-Xylene	0.139	0.010	"	0.150	ND	92.7	70-130	1.78	30	
o-Xylene	0.0656	0.0050	"	0.0750	ND	87.5	70-130	1.41	30	
1,2,4-Trimethylbenzene	0.0634	0.0050	"	0.0750	ND	84.5	70-130	0.189	30	
1,3,5-Trimethylbenzene	0.0616	0.0050	"	0.0750	ND	82.1	70-130	0.535	30	
Naphthalene	0.0875	0.0038	"	0.0750	ND	117	70-130	6.91	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.6</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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 BFE0374 - EPA 3550A

Blank (BFE0374-BLK1)

Prepared & Analyzed: 05/18/22

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

LCS (BFE0374-BS1)

Prepared & Analyzed: 05/18/22

C10-C28 (DRO)	474	50	mg/kg	500	94.8	70-130				
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Matrix Spike (BFE0374-MS1)

Source: 2205218-02

Prepared & Analyzed: 05/18/22

C10-C28 (DRO)	438	50	mg/kg	500	24.3	82.8	70-130			
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Matrix Spike Dup (BFE0374-MSD1)

Source: 2205218-02

Prepared & Analyzed: 05/18/22

C10-C28 (DRO)	464	50	mg/kg	500	24.3	87.9	70-130	5.59	20	
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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 BFE0373 - EPA 5030 Soil MS

Blank (BFE0373-BLK1)

Prepared: 05/18/22 Analyzed: 05/20/22

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>0.0304</i>		"	<i>0.0333</i>		<i>91.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0265</i>		"	<i>0.0333</i>		<i>79.4</i>	<i>40-150</i>			

LCS (BFE0373-BS1)

Prepared: 05/18/22 Analyzed: 05/20/22

Acenaphthene	0.0256	0.00500	mg/kg	0.0333	76.8	31-137
Anthracene	0.0281	0.00500	"	0.0333	84.3	30-120
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	76.7	30-120
Benzo (a) pyrene	0.0255	0.00500	"	0.0333	76.6	30-120
Benzo (b) fluoranthene	0.0263	0.00500	"	0.0333	79.0	30-120
Benzo (k) fluoranthene	0.0291	0.00500	"	0.0333	87.4	30-120
Chrysene	0.0282	0.00500	"	0.0333	84.5	30-120
Dibenz (a,h) anthracene	0.0202	0.00500	"	0.0333	60.6	30-120
Fluoranthene	0.0295	0.00500	"	0.0333	88.5	30-120
Fluorene	0.0260	0.00500	"	0.0333	78.0	30-120
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	61.5	30-120
Pyrene	0.0282	0.00500	"	0.0333	84.5	35-142
1-Methylnaphthalene	0.0290	0.00500	"	0.0333	86.9	35-142
2-Methylnaphthalene	0.0282	0.00500	"	0.0333	84.6	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0280</i>		"	<i>0.0333</i>	<i>84.1</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0268</i>		"	<i>0.0333</i>	<i>80.5</i>	<i>40-150</i>

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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 BFE0373 - EPA 5030 Soil MS

Matrix Spike (BFE0373-MS1)	Source: 2205218-01			Prepared: 05/18/22 Analyzed: 05/21/22							
Acenaphthene	0.184	0.00500	mg/kg	0.0333	ND	551	31-137				QM-07
Anthracene	0.523	0.00500	"	0.0333	ND	NR	30-120				QM-07
Benzo (a) anthracene	0.0215	0.00500	"	0.0333	ND	64.6	30-120				
Benzo (a) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120				
Benzo (b) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.4	30-120				
Benzo (k) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.2	30-120				
Chrysene	0.0657	0.00500	"	0.0333	0.0319	101	30-120				
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333	ND	84.4	30-120				
Fluoranthene	0.0303	0.00500	"	0.0333	ND	90.9	30-120				
Fluorene	0.221	0.00500	"	0.0333	0.0977	369	30-120				QM-07
Indeno (1,2,3-cd) pyrene	0.0241	0.00500	"	0.0333	ND	72.4	30-120				
Pyrene	0.0643	0.00500	"	0.0333	ND	193	35-142				QM-07
1-Methylnaphthalene	1.43	0.00500	"	0.0333	0.992	NR	15-130				QM-07
2-Methylnaphthalene	2.05	0.00500	"	0.0333	2.82	NR	15-130				QM-07
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0225</i>		<i>"</i>	<i>0.0333</i>		<i>67.6</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0264</i>		<i>"</i>	<i>0.0333</i>		<i>79.3</i>	<i>40-150</i>				

Matrix Spike Dup (BFE0373-MSD1)	Source: 2205218-01			Prepared: 05/18/22 Analyzed: 05/21/22							
Acenaphthene	0.134	0.00500	mg/kg	0.0333	ND	403	31-137	31.1	30		QM-07
Anthracene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	181	30		QM-07
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	19.6	30		
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	25.5	30		
Benzo (b) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	12.8	30		
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	12.2	30		
Chrysene	0.0563	0.00500	"	0.0333	0.0319	73.0	30-120	15.5	30		
Dibenz (a,h) anthracene	0.0327	0.00500	"	0.0333	ND	98.2	30-120	15.2	30		
Fluoranthene	0.0293	0.00500	"	0.0333	ND	87.9	30-120	3.39	30		
Fluorene	0.126	0.00500	"	0.0333	0.0977	85.4	30-120	54.5	30		QM-07
Indeno (1,2,3-cd) pyrene	0.0323	0.00500	"	0.0333	ND	97.0	30-120	29.1	30		
Pyrene	0.0619	0.00500	"	0.0333	ND	186	35-142	3.69	30		QM-07
1-Methylnaphthalene	1.42	0.00500	"	0.0333	0.992	NR	15-130	0.795	50		QM-07
2-Methylnaphthalene	1.99	0.00500	"	0.0333	2.82	NR	15-130	2.63	50		QM-07
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0228</i>		<i>"</i>	<i>0.0333</i>		<i>68.4</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0262</i>		<i>"</i>	<i>0.0333</i>		<i>78.5</i>	<i>40-150</i>				

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BFE0454 - EPA 3050B

Blank (BFE0454-BLK1)

Prepared: 05/20/22 Analyzed: 05/26/22

Boron ND 0.0100 mg/L

LCS (BFE0454-BS1)

Prepared: 05/20/22 Analyzed: 05/26/22

Boron 5.42 0.0100 mg/L 5.00 108 80-120

Duplicate (BFE0454-DUP1)

Source: 2205218-01

Prepared: 05/20/22 Analyzed: 05/26/22

Boron 0.229 0.0100 mg/L 0.232 1.28 20

Matrix Spike (BFE0454-MS1)

Source: 2205218-01

Prepared: 05/20/22 Analyzed: 05/26/22

Boron 5.60 0.0100 mg/L 5.00 0.232 107 75-125

Matrix Spike Dup (BFE0454-MSD1)

Source: 2205218-01

Prepared: 05/20/22 Analyzed: 05/26/22

Boron 5.59 0.0100 mg/L 5.00 0.232 107 75-125 0.124 25

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFE0535 - EPA 3050B

Blank (BFE0535-BLK1)

Prepared: 05/24/22 Analyzed: 05/25/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							

LCS (BFE0535-BS1)

Prepared: 05/24/22 Analyzed: 05/25/22

Arsenic	43.7	0.200	mg/kg wet	40.0		109	80-120
Barium	43.8	0.400	"	40.0		109	80-120
Cadmium	2.16	0.200	"	2.00		108	80-120
Copper	42.0	0.400	"	40.0		105	80-120
Lead	21.0	0.200	"	20.0		105	80-120
Nickel	40.9	0.400	"	40.0		102	80-120
Selenium	4.08	0.260	"	4.00		102	80-120
Silver	2.13	0.0200	"	2.00		106	80-120
Zinc	44.8	0.400	"	40.0		112	80-120

Duplicate (BFE0535-DUP1)

Source: 2205218-01

Prepared: 05/24/22 Analyzed: 05/25/22

Arsenic	2.60	0.238	mg/kg dry	2.56		1.68	20
Barium	115	0.476	"	108		6.25	20
Cadmium	0.127	0.238	"	0.117		8.23	20
Copper	6.06	0.476	"	5.73		5.52	20
Lead	5.82	0.238	"	5.39		7.69	20
Nickel	6.42	0.476	"	6.08		5.34	20
Selenium	0.551	0.309	"	0.541		1.87	20
Silver	0.0383	0.0238	"	0.0375		2.20	20
Zinc	25.4	0.476	"	24.4		4.28	20

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFE0535 - EPA 3050B

Matrix Spike (BFE0535-MS1)

Source: 2205218-01

Prepared: 05/24/22 Analyzed: 05/25/22

Arsenic	55.5	0.238	mg/kg dry	47.6	2.56	111	75-125		
Barium	154	0.476	"	47.6	108	97.3	75-125		
Cadmium	2.67	0.238	"	2.38	0.117	107	75-125		
Copper	54.5	0.476	"	47.6	5.73	103	75-125		
Lead	28.0	0.238	"	23.8	5.39	95.1	75-125		
Nickel	55.0	0.476	"	47.6	6.08	103	75-125		
Selenium	5.37	0.309	"	4.76	0.541	101	75-125		
Silver	2.49	0.0238	"	2.38	0.0375	103	75-125		
Zinc	76.3	0.476	"	47.6	24.4	109	75-125		

Matrix Spike Dup (BFE0535-MSD1)

Source: 2205218-01

Prepared: 05/24/22 Analyzed: 05/25/22

Arsenic	56.0	0.238	mg/kg dry	47.6	2.56	112	75-125	0.755	25
Barium	163	0.476	"	47.6	108	116	75-125	5.71	25
Cadmium	2.87	0.238	"	2.38	0.117	116	75-125	7.25	25
Copper	54.6	0.476	"	47.6	5.73	103	75-125	0.0596	25
Lead	29.8	0.238	"	23.8	5.39	103	75-125	6.20	25
Nickel	55.0	0.476	"	47.6	6.08	103	75-125	0.0193	25
Selenium	5.35	0.309	"	4.76	0.541	101	75-125	0.269	25
Silver	2.65	0.0238	"	2.38	0.0375	110	75-125	6.55	25
Zinc	76.8	0.476	"	47.6	24.4	110	75-125	0.589	25

Summit Scientific



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFE0492 - 3060A Mod

Blank (BFE0492-BLK1)

Prepared & Analyzed: 05/23/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFE0492-BS1)

Prepared & Analyzed: 05/23/22

Chromium, Hexavalent 28.1 0.30 mg/kg wet 25.0 112 80-120

Duplicate (BFE0492-DUP1)

Source: 2205034-05

Prepared & Analyzed: 05/23/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFE0492-MS1)

Source: 2205034-05

Prepared & Analyzed: 05/23/22

Chromium, Hexavalent 35.7 0.30 mg/kg dry 33.6 ND 106 75-125

Matrix Spike Dup (BFE0492-MSD1)

Source: 2205034-05

Prepared & Analyzed: 05/23/22

Chromium, Hexavalent 36.6 0.30 mg/kg dry 33.6 ND 109 75-125 2.61 20

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BFE0475 - General Preparation

Blank (BFE0475-BLK1)

Prepared: 05/22/22 Analyzed: 05/27/22

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BFE0475-BS1)

Prepared: 05/22/22 Analyzed: 05/27/22

Calcium	586	0.0500	mg/L wet	500	117	70-130				
Magnesium	543	0.0500	"	500	109	70-130				
Sodium	505	0.0500	"	500	101	70-130				

Summit Scientific



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BFE0494 - General Preparation

Duplicate (BFE0494-DUP1)

Source: 2205218-01

Prepared & Analyzed: 05/23/22

% Solids	80.8		%		84.1			3.95		20	
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Summit Scientific



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFE0477 - General Preparation

Blank (BFE0477-BLK1)

Prepared: 05/22/22 Analyzed: 05/23/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFE0477-BS1)

Prepared: 05/22/22 Analyzed: 05/23/22

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BFE0477-DUP1)

Source: 2205218-01

Prepared: 05/22/22 Analyzed: 05/23/22

Specific Conductance (EC) 1.86 0.0100 mmhos/cm 1.92 3.23 20

Summit Scientific



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

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BFE0476 - General Preparation

LCS (BFE0476-BS1)

Prepared: 05/22/22 Analyzed: 05/23/22

pH	9.06	pH Units	9.18	98.7	95-105
----	------	----------	------	------	--------

Duplicate (BFE0476-DUP1)

Source: 2205218-01

Prepared: 05/22/22 Analyzed: 05/23/22

pH	7.71	pH Units	7.64	0.912	20
----	------	----------	------	-------	----

Summit Scientific

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



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/01/22 16:55

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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

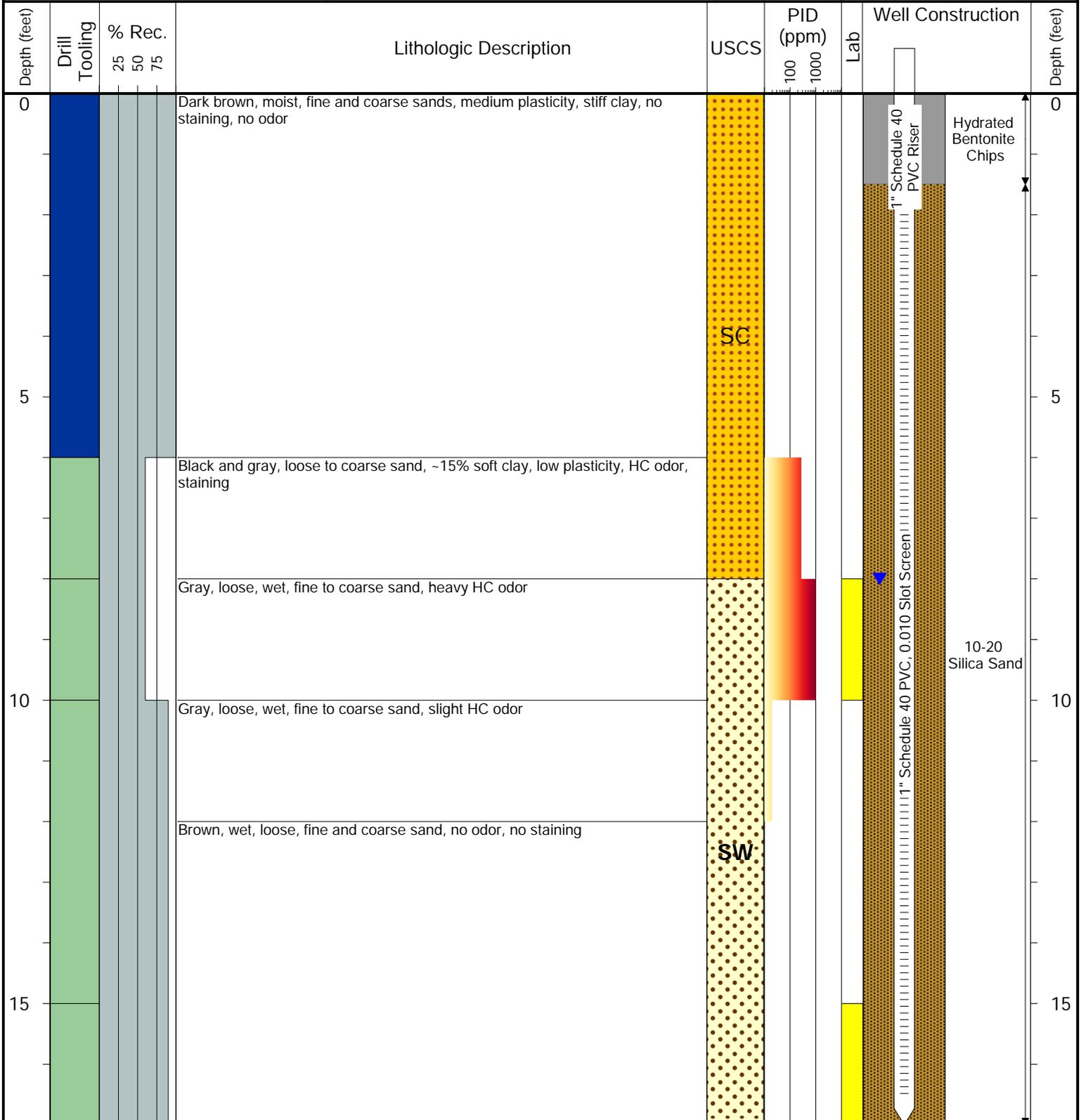
ATTACHMENT B
BORING LOGS



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Hunter Merlo
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Hand Auger/PowerProbe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 5/3/22 - 5/13/22
 TOTAL WELL DEPTH (FT. BGS): 17
 DEPTH TO WATER (FT. BGS): 8

Frank 1, 12-02, 7-4 (FAC)
 BORING / WELL ID: BH01
 LOCATION: Weld County, Colorado
 LATITUDE (WGS 84): 40.332197848
 LONGITUDE (WGS 84): -104.489880424
 CASING ELEVATION (FT. AMSL): 4606.752
 GROUND ELEVATION (FT. AMSL): 4605.162



Drilling / Sample Method:

- Macro-Core
- Solid Stem Auger
- Hand Auger

Laboratory Sample Types:

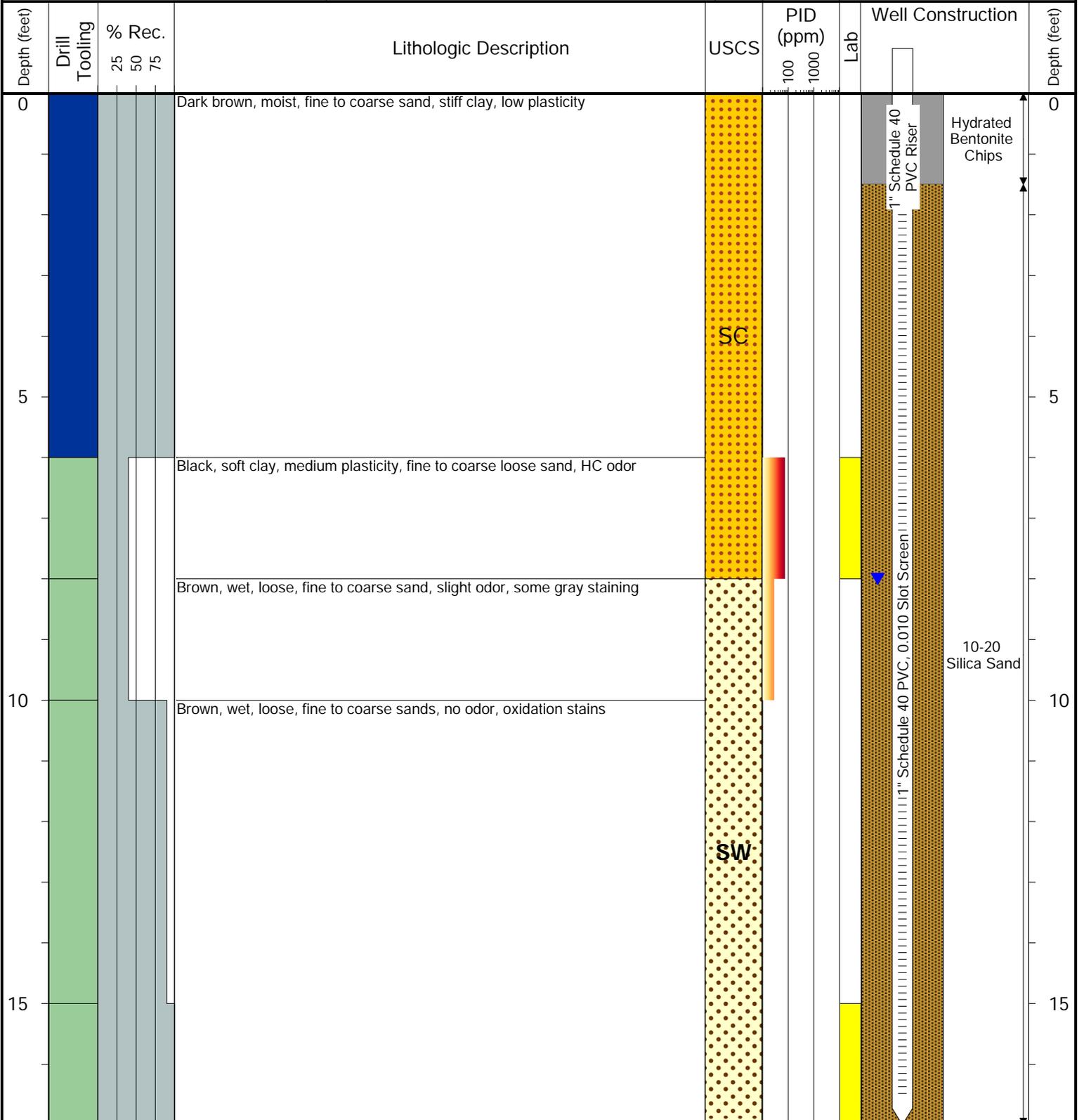
- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Hunter Merlo
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Hand Auger/PowerProbe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 5/3/22 - 5/13/22
 TOTAL WELL DEPTH (FT. BGS): 17
 DEPTH TO WATER (FT. BGS): 8

Frank 1, 12-02, 7-4 (FAC)
 BORING / WELL ID: BH02
 LOCATION: Weld County, Colorado
 LATITUDE (WGS 84): 40.332258634
 LONGITUDE (WGS 84): -104.489883747
 CASING ELEVATION (FT. AMSL): 4606.812
 GROUND ELEVATION (FT. AMSL): 4605.302



Drilling / Sample Method:

- Macro-Core
- Solid Stem Auger
- Hand Auger
- Hollow Stem Auger

Laboratory Sample Types:

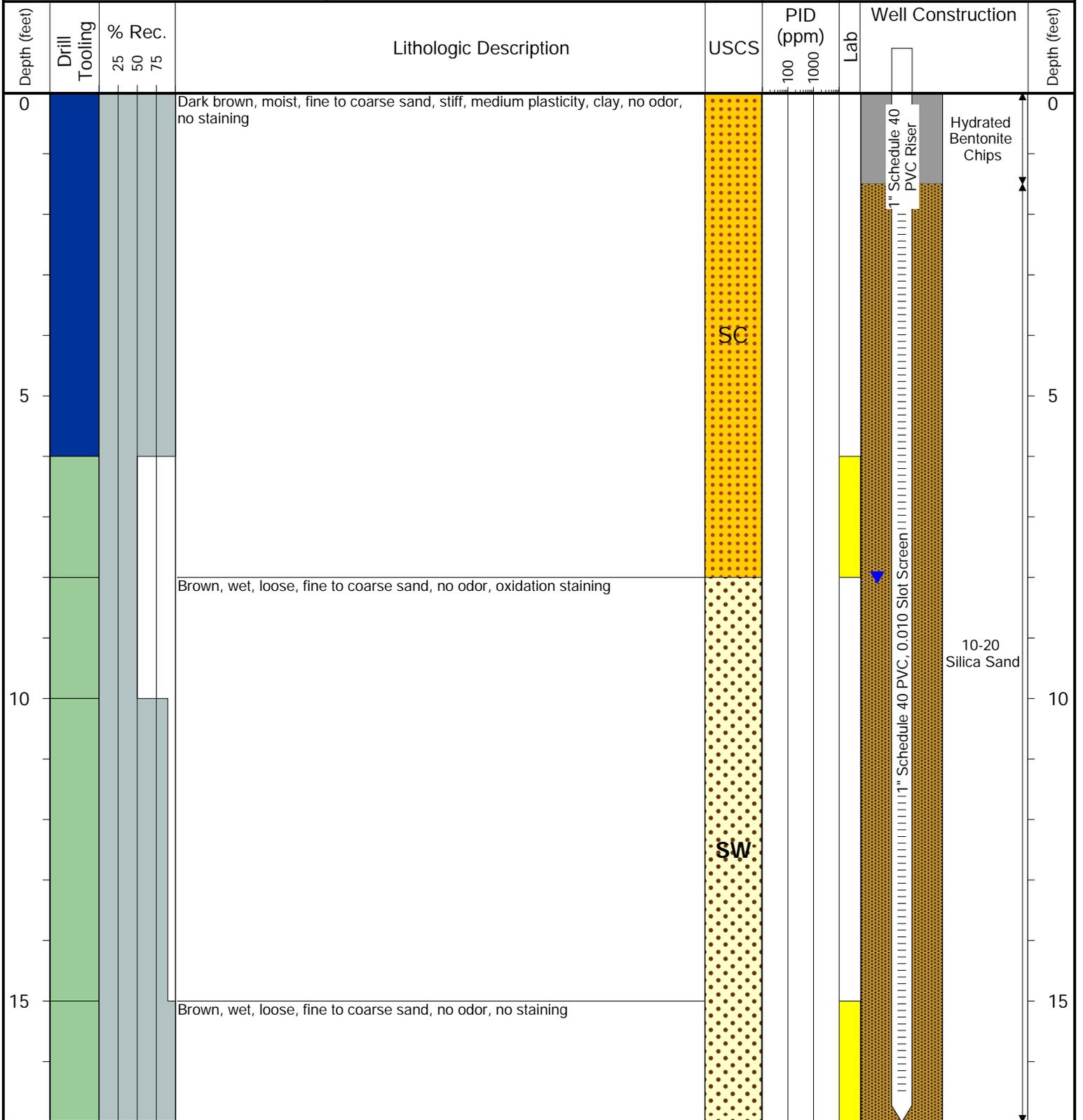
- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Hunter Merlo
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Hand Auger/PowerProbe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 5/3/22 - 5/13/22
 TOTAL WELL DEPTH (FT. BGS): 17
 DEPTH TO WATER (FT. BGS): 8

Frank 1, 12-02, 7-4 (FAC)
 BORING / WELL ID: BH03
 LOCATION: Weld County, Colorado
 LATITUDE (WGS 84): 40.332195962
 LONGITUDE (WGS 84): -104.489797193
 CASING ELEVATION (FT. AMSL): 4606.962
 GROUND ELEVATION (FT. AMSL): 4605.402



Drilling / Sample Method:
 Macro-Core (Green), Solid Stem Auger (Light Green), Hand Auger (Blue), Hollow Stem Auger (Dark Green)

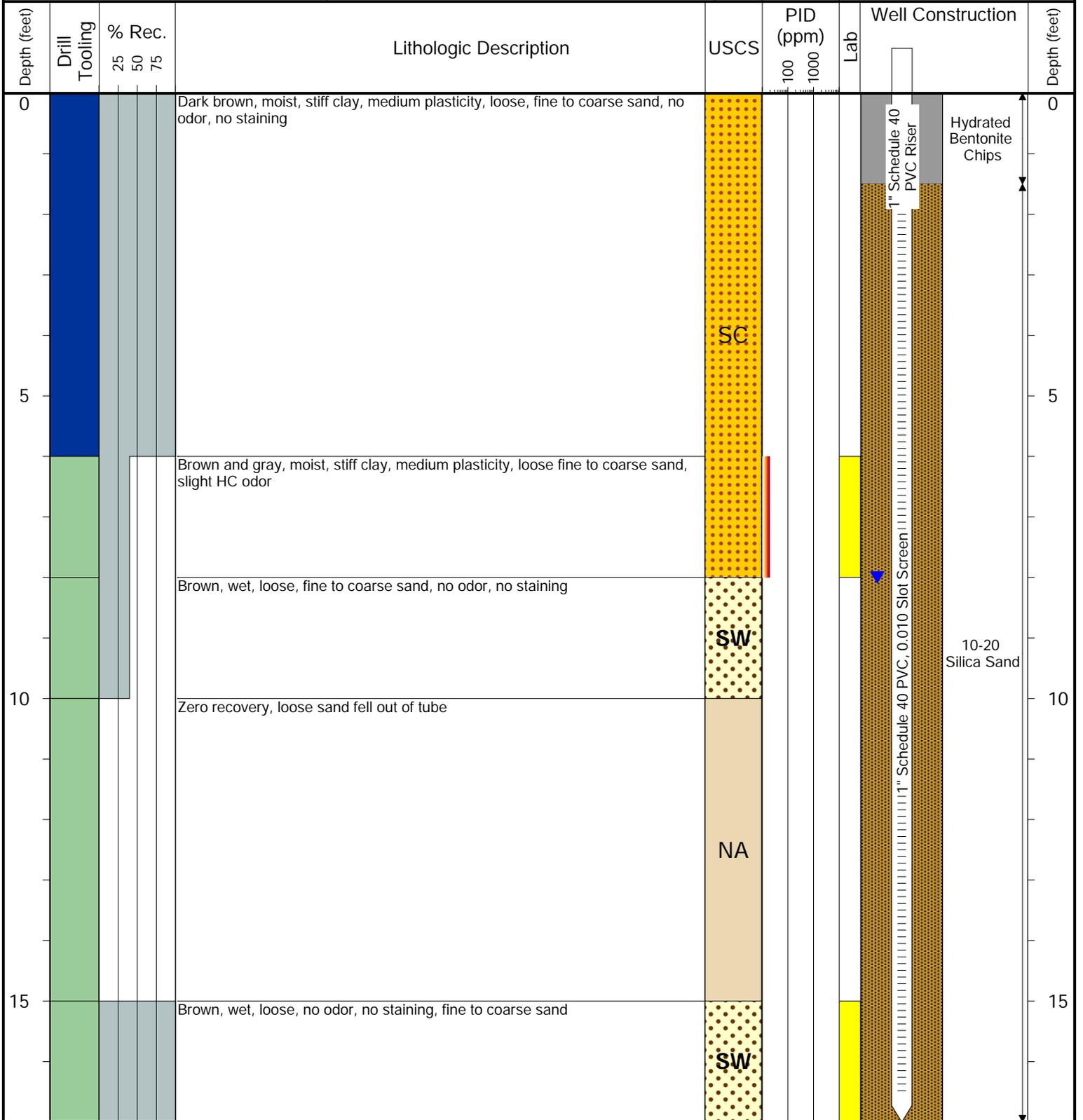
Laboratory Sample Types:
 Geotechnical Lab (Purple), Analytical Chemistry Lab (Yellow), Geotechnical & Analytical Chemistry Lab (Blue/Yellow)



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Hunter Merlo
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Hand Auger/PowerProbe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 5/3/22 - 5/13/22
 TOTAL WELL DEPTH (FT. BGS): 17
 DEPTH TO WATER (FT. BGS): 8

Frank 1, 12-02, 7-4 (FAC)
 BORING / WELL ID: BH04
 LOCATION: Weld County, Colorado
 LATITUDE (WGS 84): 40.332133365
 LONGITUDE (WGS 84): -104.489884465
 CASING ELEVATION (FT. AMSL): 4606.752
 GROUND ELEVATION (FT. AMSL): 4604.892



Drilling / Sample Method:
 Macro-Core (Green)
 Solid Stem Auger (Light Green)
 Hollow Stem Auger (Dark Green)
 Hand Auger (Blue)

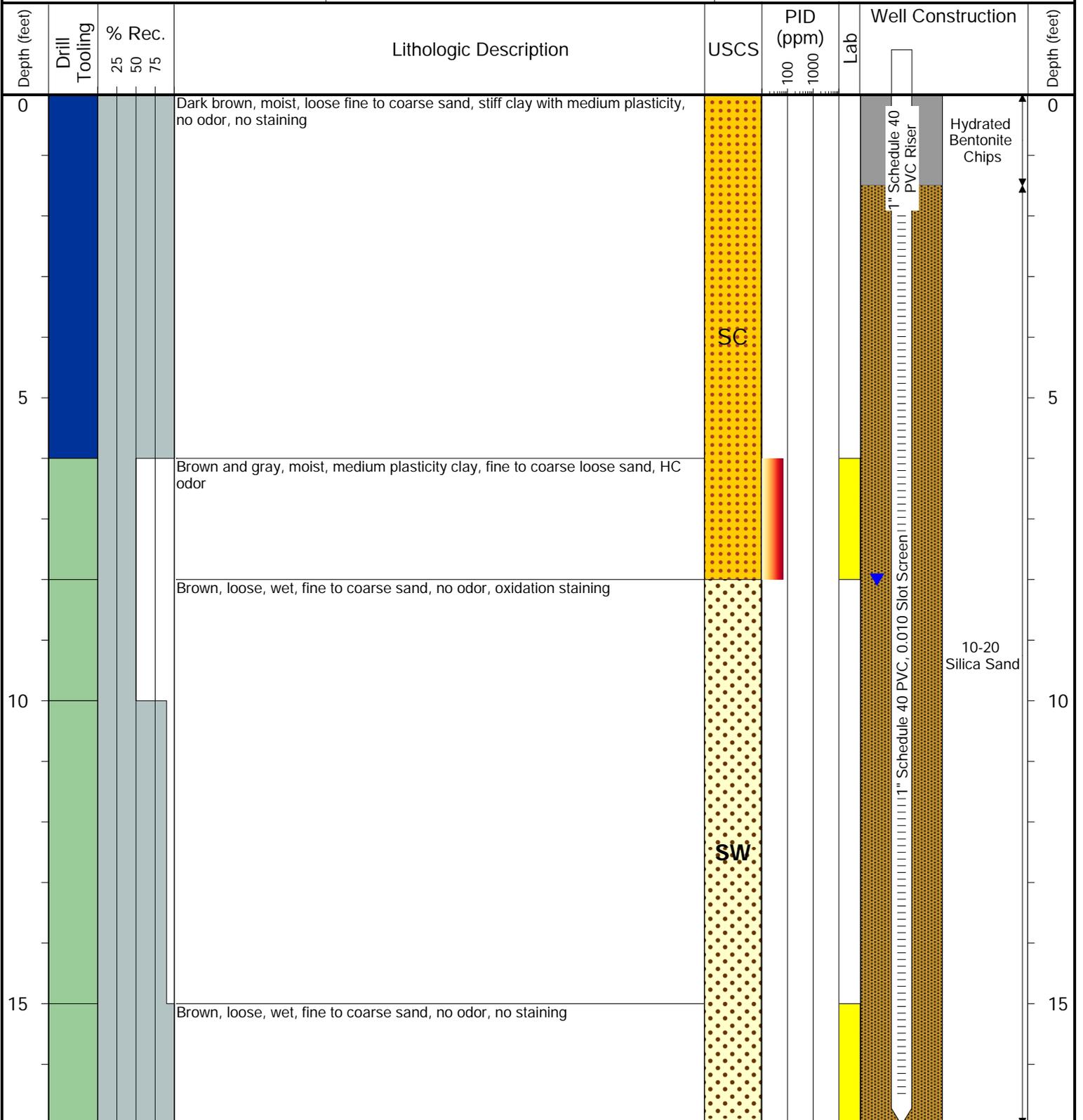
Laboratory Sample Types:
 Geotechnical Lab (Purple)
 Analytical Chemistry Lab (Yellow)
 Geotechnical & Analytical Chemistry Lab (Blue/Yellow)



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Hunter Merlo
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Hand Auger/PowerProbe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 5/3/22 - 5/13/22
 TOTAL WELL DEPTH (FT. BGS): 17
 DEPTH TO WATER (FT. BGS): 8

Frank 1, 12-02, 7-4 (FAC)
 BORING / WELL ID: BH05
 LOCATION: Weld County, Colorado
 LATITUDE (WGS 84): 40.332199669
 LONGITUDE (WGS 84): -104.489953297
 CASING ELEVATION (FT. AMSL): 4606.472
 GROUND ELEVATION (FT. AMSL): 4604.732



Drilling / Sample Method:

- Macro-Core
- Solid Stem Auger
- Hollow Stem Auger
- Hand Auger

Laboratory Sample Types:

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

ATTACHMENT C

LABORATORY GROUNDWATER ANALYTICAL REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 10, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Frank 1,12-02,7-4

Work Order #2206058

Enclosed are the results of analyses for samples received by Summit Scientific on 06/02/22 17:48. 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 - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2206058-01	Water	06/02/22 12:20	06/02/22 17:48
BH02	2206058-02	Water	06/02/22 12:30	06/02/22 17:48
BH03	2206058-03	Water	06/02/22 12:40	06/02/22 17:48
BH04	2206058-04	Water	06/02/22 12:50	06/02/22 17:48
BH05	2206058-05	Water	06/02/22 13:00	06/02/22 17:48

Summit Scientific

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



Summit Scientific

2206058

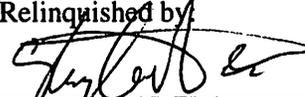
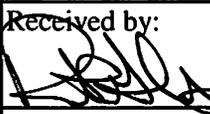
S₂

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

Page 1 of 1

Client: Noble / Tasman Project Manager: Jake Whritenour, Invoice: ~~Jacob Evans~~ Erica Zuniga
Address: 6855 W. 119th Ave E-Mail: jwhritenour@tasman-geo.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-261-6247 Project Name: Frank 1, 12-07, 7-4
Sampler Name: Stanley Gilbert Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260B BTEX	Naphthalene	1,2,4-trimethylbenzene	1,3,5 trimethylbenzene	TDS, chloride ion, sulfate ion	
1	BH02	6/2/77	1220	4	X				X				X	X	X	X	X	
2	BH02		1230															
3	BH03		1240															
4	BH04		1250															
5	BH05		1300															
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 6/2/77 1630	Received by: Tasman's Lock Box	Date/Time: 6/2/77 1630	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 2.1 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/2/77 1748	Received by: 	Date/Time: 6/2/77 1748		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2206058

Client: Noble/Tasman Client Project ID: Frank 1, 12-02, 7-4

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

-

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
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, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	-			HCl
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.

[Signature]
Custodian Printed Name

0222
Date/Time

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

BH01
2206058-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/22 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFF0086	06/03/22	06/04/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/02/22 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	8.85	66.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.8 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/02/22 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	206	12.0		mg/L	200	BFF0130	06/03/22	06/06/22	EPA 300.0	
Sulfate	555	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/02/22 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1600	10.0		mg/L	1	BFF0113	06/05/22	06/07/22	SM2540C	

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

BH02
2206058-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/22 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFF0086	06/03/22	06/04/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/02/22 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	8.99	67.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.5	93.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.7	95.1 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/02/22 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	255	12.0		mg/L	200	BFF0130	06/03/22	06/06/22	EPA 300.0	
Sulfate	596	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/02/22 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1910	10.0		mg/L	1	BFF0113	06/05/22	06/07/22	SM2540C	

Summit Scientific

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



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

BH03
2206058-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFF0086	06/03/22	06/04/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/02/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	8.37	62.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.4	92.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.8	96.3 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/02/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	213	12.0		mg/L	200	BFF0130	06/03/22	06/06/22	EPA 300.0	
Sulfate	489	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/02/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1540	10.0		mg/L	1	BFF0113	06/05/22	06/07/22	SM2540C	

Summit Scientific

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



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

BH04
2206058-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFF0086	06/03/22	06/04/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/02/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	7.94	59.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.2	91.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.8	96.4 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/02/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	178	12.0		mg/L	200	BFF0130	06/03/22	06/06/22	EPA 300.0	
Sulfate	197	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/02/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	868	10.0		mg/L	1	BFF0113	06/05/22	06/07/22	SM2540C	

Summit Scientific

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



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

BH05
2206058-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/02/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFF0086	06/03/22	06/04/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/02/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	8.71	65.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.4	93.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.8	104 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/02/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	344	12.0		mg/L	200	BFF0130	06/03/22	06/06/22	EPA 300.0	
Sulfate	779	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/02/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2280	10.0		mg/L	1	BFF0113	06/05/22	06/07/22	SM2540C	

Summit Scientific



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

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 BFF0086 - EPA 5030 Water MS

Blank (BFF0086-BLK1)

Prepared & Analyzed: 06/03/22

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	8.44		"	13.3		63.3		23-173			
<i>Surrogate: Toluene-d8</i>	11.8		"	13.3		88.4		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.5		"	13.3		86.0		21-167			

LCS (BFF0086-BS1)

Prepared & Analyzed: 06/03/22

Benzene	22.5	1.0	ug/l	33.3		67.5		51-132			
Toluene	29.1	1.0	"	33.3		87.4		51-138			
Ethylbenzene	35.2	1.0	"	33.3		106		58-146			
m,p-Xylene	73.4	2.0	"	66.7		110		57-144			
o-Xylene	36.5	1.0	"	33.3		110		53-146			
Naphthalene	27.3	1.0	"	33.3		81.8		70-130			
1,2,4-Trimethylbenzene	36.6	1.0	"	33.3		110		70-130			
1,3,5-Trimethylbenzene	37.2	1.0	"	33.3		112		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	9.35		"	13.3		70.1		23-173			
<i>Surrogate: Toluene-d8</i>	12.1		"	13.3		90.8		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.8		"	13.3		88.7		21-167			

Matrix Spike (BFF0086-MS1)

Source: 2206006-01

Prepared & Analyzed: 06/03/22

Benzene	22.6	1.0	ug/l	33.3	ND	67.9		34-141			
Toluene	30.0	1.0	"	33.3	ND	89.9		27-151			
Ethylbenzene	35.3	1.0	"	33.3	ND	106		29-160			
m,p-Xylene	74.2	2.0	"	66.7	ND	111		20-166			
o-Xylene	37.1	1.0	"	33.3	ND	111		33-159			
Naphthalene	30.3	1.0	"	33.3	ND	91.0		70-130			
1,2,4-Trimethylbenzene	37.2	1.0	"	33.3	ND	112		70-130			
1,3,5-Trimethylbenzene	37.6	1.0	"	33.3	ND	113		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	9.35		"	13.3		70.1		23-173			
<i>Surrogate: Toluene-d8</i>	12.2		"	13.3		91.6		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	11.6		"	13.3		86.9		21-167			

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFF0086 - EPA 5030 Water MS

Matrix Spike Dup (BFF0086-MSD1)	Source: 2206006-01			Prepared & Analyzed: 06/03/22						
Benzene	22.2	1.0	ug/l	33.3	ND	66.5	34-141	1.96	30	
Toluene	29.3	1.0	"	33.3	ND	87.8	27-151	2.36	30	
Ethylbenzene	34.8	1.0	"	33.3	ND	104	29-160	1.28	30	
m,p-Xylene	73.9	2.0	"	66.7	ND	111	20-166	0.419	30	
o-Xylene	37.3	1.0	"	33.3	ND	112	33-159	0.672	30	
Naphthalene	32.9	1.0	"	33.3	ND	98.8	70-130	8.22	30	
1,2,4-Trimethylbenzene	38.3	1.0	"	33.3	ND	115	70-130	2.73	30	
1,3,5-Trimethylbenzene	37.7	1.0	"	33.3	ND	113	70-130	0.292	30	
Surrogate: 1,2-Dichloroethane-d4	9.40		"	13.3		70.5	23-173			
Surrogate: Toluene-d8	12.1		"	13.3		90.6	20-170			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.0	21-167			

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

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 BFF0130 - General Preparation

Blank (BFF0130-BLK1)

Prepared: 06/03/22 Analyzed: 06/06/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BFF0130-BS1)

Prepared: 06/03/22 Analyzed: 06/06/22

Chloride	3.09	0.0600	mg/L	3.00	103	90-110		
Sulfate	15.9	0.300	"	15.0	106	90-110		

Duplicate (BFF0130-DUP1)

Source: 2206046-01

Prepared: 06/03/22 Analyzed: 06/06/22

Chloride	113	12.0	mg/L	104			7.94	20
Sulfate	1460	60.0	"	1480			1.28	20

Matrix Spike (BFF0130-MS1)

Source: 2206046-01

Prepared: 06/03/22 Analyzed: 06/06/22

Chloride	814	12.0	mg/L	600	104	118	80-120	
Sulfate	4870	60.0	"	3000	1480	113	80-120	

Summit Scientific

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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

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 BFF0113 - General Preparation

Blank (BFF0113-BLK1)

Prepared: 06/05/22 Analyzed: 06/07/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFF0113-DUP1)

Source: 2206058-01

Prepared: 06/05/22 Analyzed: 06/07/22

Total Dissolved Solids 1630 10.0 mg/L 1600 2.05 20

Summit Scientific



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

Project: Noble - Frank 1,12-02,7-4

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/10/22 09:48

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