



## FLOWLINE ABANDONMENT FORM

<b>SITE NAME:</b> Bnruntz G16-23							<b>DATE:</b> 6/24/2024	<b>REM. PROJECT #:</b> 32833	<b>WEATHER:</b> Sunny 90s	
<b>SITE DIRECTIONS:</b> E CR 44 N CR 43, 0.4N, 0.2 E into site							<b>CLIENT:</b> Noble			
<b>LEGALS AND LAT/LONG:</b> 40.308760, -104.663730							<b>TASMAN PERSONNEL:</b> LB, LoB			
<b>SOIL TYPES:</b> Well Graded Sand - SW							<b>SURFACE GRADIENT:</b> South			
<b>SOIL SAMPLING</b>							<b>FACILITY INFRASTRUCTURE</b>			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity	Photo?
							Above Ground Storage Tank (AST)			
6/24/2024 09:17	FL01R-W@1'	0.8	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel			
6/24/2024 09:24	FL01-01@1'	1.2	No Staining	No Odor	Yes	Lab	Separator			
6/24/2024 09:31	FL01-02@2'	0.8	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)			
6/24/2024 09:34	FL01-03@2'	1.1	No Staining	No Odor	Yes	Lab	Dump Line			
6/24/2024 09:37	FL01-04@1'	1.2	No Staining	No Odor	Yes	Grab	Wellhead			
6/24/2024 09:40	FL01-05@1'	1.0	No Staining	No Odor	Yes	Grab	Flowline		1	✓
6/24/2024 09:44	FL01-06@1'	4.2	No Staining	Organic Odor	Yes	Lab	Other:			
6/24/2024 10:20	BKG01@1'	1.0	No Staining	No Odor	Yes	Lab	Soil Loads Removed			
6/24/2024 10:22	BKG01@2'	0.6	No Staining	No Odor	Yes	Lab	<b>IMPACTED SOIL IDENTIFIED?</b>			
							<b>ESTIMATED VOLUME OF IMPACTS:</b>			
							Date	Number	CY	
							Total Removed		0	0
							<b>Disposal Facility:</b>			
							<b>Groundwater Recovery</b>			
							<b>DATE GW ENCOUNTERED:</b>		<b>DEPTH:</b>	
							<b>GROUNDWATER IN CONTACT WITH IMPACTED SOIL?</b>			
							<b>LNAPL OR SHEEN OBSERVED ON GW?</b>			
<b>GROUNDWATER SAMPLING</b>							Date	BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?				
							Total Removed		0	
							<b>Disposal Facility:</b>			



**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE - 100322**  
**BRUNTZ G16-23, WELD COUNTY, COLORADO**  
**REM # 32833**

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude/Longitude			
FL01R-W@1'	6/24/2024	1	40.308760	-104.663704	0.8	0.8
FL01-01@1'	6/24/2024	1	40.308804	-104.663245	0.8	1.2
FL01-02@2'	6/24/2024	2	40.308914	-104.662884	0.8	0.8
FL01-03@2'	6/24/2024	2	40.309221	-104.662733	0.9	1.1
FL01-04@1'	6/24/2024	1	40.309675	-104.662730	0.9	1.2
FL01-05@1'	6/24/2024	1	40.310222	-104.662761	0.9	1.0
FL01-06@1'	6/24/2024	1	40.310710	-104.662799	0.8	4.2
BKG01@1'	6/24/2024	1	40.308801	-104.663803	0.9	1.0
BKG01@2'	6/24/2024	2	40.308801	-104.663803	0.9	0.6

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

bgs = Below ground surface

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE - 100322  
BRUNTZ G16-23, WELD COUNTY, COLORADO  
REM # 32833

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01-01@1'	6/24/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-02@2'	6/24/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-03@2'	6/24/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.012	<500	<0.50	<50	<50
FL01-06@1'	6/24/2024	1	<0.0020	0.0058	<0.0050	0.012	<0.0050	<0.0050	3.3	190	<0.50	190	<50
FL01R-W@1'	6/24/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

**Notes:**

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
3. \* Indicates laboratory minimum detection limit in excess of SSL
4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg

ECMC = Energy & Carbon Management Commission

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

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE - 100322  
BRUNTZ G16-23, WELD COUNTY, COLORADO  
REM # 32833

Sample ID	Sample Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-01@1'	6/24/2024	1	0.158	0.278	<b>0.339</b>	<b>0.201</b>	<b>0.302</b>	0.0976	0.332	0.0441	1.01	0.187	0.153	0.804	<b>0.0433</b>	<b>0.0840</b>
FL01-02@2'	6/24/2024	2	0.00727	0.0208	<b>0.0578</b>	0.0385	0.0664	0.0230	0.0573	0.00557	0.137	0.00926	0.0165	0.126	<0.00500	<0.00500
FL01-03@2'	6/24/2024	2	0.172	0.321	<b>0.491</b>	<b>0.303</b>	<b>0.462</b>	0.148	0.481	0.0621	1.49	0.198	0.304	1.18	<b>0.0376</b>	<b>0.0685</b>
FL01-06@1'	6/24/2024	1	<b>1.98</b>	2.55	<b>3.26</b>	<b>1.98</b>	<b>2.98</b>	1.00	3.07	<b>0.545</b>	<b>10.3</b>	<b>2.26</b>	<b>1.81</b>	<b>7.94</b>	<b>0.583</b>	<b>1.15</b>
FL01R-W@1'	6/24/2024	1	0.166	0.180	<b>0.449</b>	<b>0.287</b>	<b>0.416</b>	0.138	0.415	0.0503	1.21	0.176	0.183	0.976	<b>0.0120</b>	0.0184

**Notes:**

- Bold** values exceed the ECMC Table 915-1 limit(s)
- Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- \* Indicates laboratory minimum detection limit in excess of SSL

ECMC = Colorado Energy & Carbon Management Commission

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

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE - 100322**  
**BRUNTZ G16-23, WELD COUNTY, COLORADO**  
**REM # 32833**

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01-01@1'	6/24/2024	1	7.31	0.363	1.02	<2.00
FL01-02@2'	6/24/2024	2	7.69	0.586	4.03	<2.00
FL01-03@2'	6/24/2024	2	7.77	1.60	5.32	<2.00
FL01-06@1'	6/24/2024	1	<b>8.57</b>	<b>6.20</b>	<b>23.8</b>	<2.00
FL01R-W@1'	6/24/2024	1	<b>8.39</b>	0.414	0.600	<2.00
BKG01@1'	6/24/2024	1	7.60	0.542	1.88	<2.00
BKG01@2'	6/24/2024	2	8.25	0.462	1.38	<2.00
Maximum Background Concentration			8.25	0.542	1.88	-
Mean Background Concentration			7.93	0.502	1.63	-

**Notes:**

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE - 100322  
BRUNTZ G16-23, WELD COUNTY, COLORADO  
REM # 32833

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) <sup>[4]</sup> (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-01@1'	6/24/2024	1	<b>0.776</b>	50.7	0.219	<0.30*	2.10	8.35	1.43	<b>0.266</b>	0.0724	7.87
FL01-02@2'	6/24/2024	2	<b>0.655</b>	51.6	<b>0.396</b>	<0.30*	2.77	12.5	1.35	<0.260	0.143	10.8
FL01-03@2'	6/24/2024	2	<b>0.717</b>	76.2	0.270	<0.30*	2.21	8.65	1.86	<0.260	0.0992	8.49
FL01-06@1'	6/24/2024	1	<b>0.692</b>	68.1	0.296	<0.30*	27.0	9.22	1.65	<b>0.261</b>	0.0703	13.3
FL01R-W@1'	6/24/2024	1	<b>0.699</b>	59.3	0.240	<0.30*	2.98	8.92	1.60	<b>0.332</b>	0.0567	8.74
BKG01@1'	6/24/2024	1	0.775	76.5	0.266	<0.30*	2.29	9.20	1.76	<0.260	0.0807	8.78
BKG01@2'	6/24/2024	2	0.858	108	0.223	<0.30*	1.96	6.97	2.35	0.313	0.0808	7.65
Maximum Background Concentration			0.858	108	0.266	-	-	-	-	0.313	-	-
Maximum Background Concentration X 1.25			1.07	135	0.333	-	-	-	-	0.391	-	-
Mean Background Concentration			0.817	92.3	0.245	-	-	-	-	0.287	-	-
Mean Background Concentration X 1.25			1.02	115	0.306	-	-	-	-	0.358	-	-

**Notes:**

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Red** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- Compound falls within ECMC Table 915-1 Footnote 9.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

\* Indicates laboratory minimum detection limit in excess of SSL



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Riser pit with unidentified white debris			

<b>Equipment ID:</b> FL01R-W@1'		<b>Equipment Type:</b> Flowline	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing S			

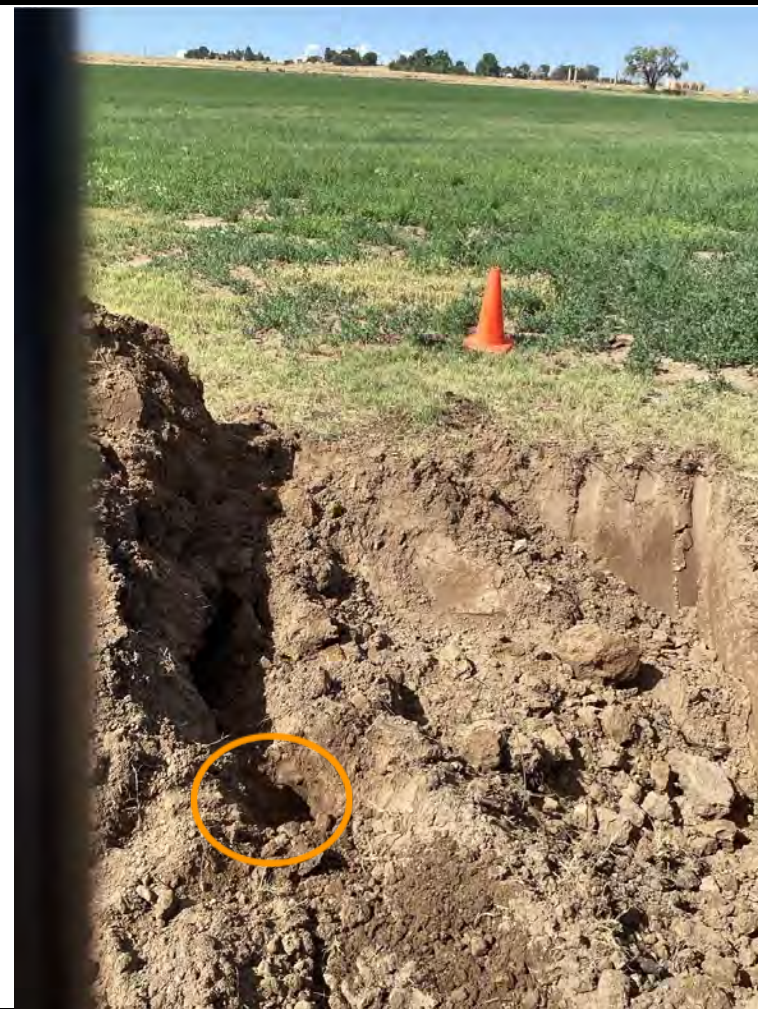


<b>Equipment ID:</b> FL01-01 @1'		<b>Equipment Type:</b> Flowline		<b>Equipment ID:</b> FL01-02 @2'		<b>Equipment Type:</b> Flowline	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> FACING N				<b>Notes/Conditions:</b> Facing W			



<b>Equipment ID:</b> FL01-03@2'		<b>Equipment Type:</b> Flowline	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing W			

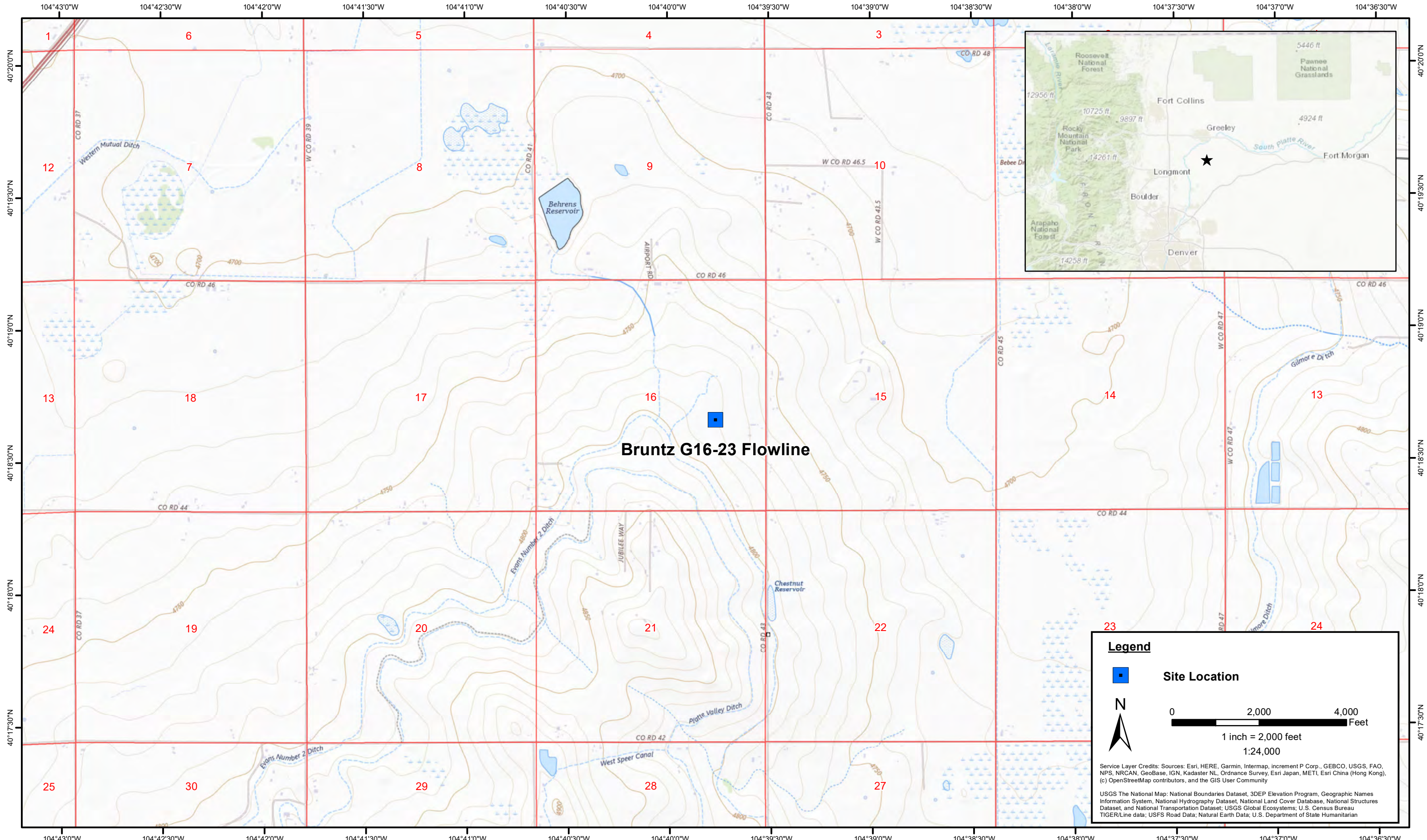
<b>Equipment ID:</b> FL01-04@1'		<b>Equipment Type:</b> Flowline	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing W			




<b>Equipment ID:</b> FL01-05 @1'		<b>Equipment Type:</b> Flowline		<b>Equipment ID:</b> FL01-06 @1'		<b>Equipment Type:</b> Flowline	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing W				<b>Notes/Conditions:</b> Facing SW			




<b>Equipment ID:</b> BKG01@1'		<b>Equipment Type:</b>		<b>Equipment ID:</b> BKG01@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing W				<b>Notes/Conditions:</b> Facing W			



**Legend**

 **Site Location**

 N

0 2,000 4,000 Feet

1 inch = 2,000 feet  
1:24,000

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian

DATE:	July 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Clonts



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

**Noble Energy, Inc. – DJ Basin**  
**Bruntz G16-23 Flowline**  
NESE, Section 16, Township 4 North, Range 65 West  
Weld County, Colorado

Site Location Map

Figure  
1



DATE: 07/09/2024

DESIGNED BY: JW

DRAWN BY: EH

**TASMAN**  
GEOSCIENCES

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

**Noble Energy, Inc. – DJ Basin**  
**Bruntz G16-23**  
 NESE, Section 16, Township 4 North, Range 65 West  
 Weld County, Colorado

Flowline Closure & Soil  
 Analytical Results Map  
 (06/24/2024)

FIGURE  
2

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 09, 2024

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - Bruntz G16-23 Flowline  
Work Order #2406363

Enclosed are the results of analyses for samples received by Summit Scientific on 06/24/24 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury  
President



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

Project: Noble - Bruntz G16-23 Flowline  
Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@1'	2406363-01	Soil	06/24/24 09:17	06/24/24 17:45
FL01-01@1'	2406363-02	Soil	06/24/24 09:24	06/24/24 17:45
FL01-02@2'	2406363-03	Soil	06/24/24 09:31	06/24/24 17:45
FL01-03@2'	2406363-04	Soil	06/24/24 09:34	06/24/24 17:45
FL01-06@1'	2406363-05	Soil	06/24/24 09:44	06/24/24 17:45
BKG01@1'	2406363-06	Soil	06/24/24 10:20	06/24/24 17:45
BKG01@2'	2406363-07	Soil	06/24/24 10:22	06/24/24 17:45



4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 1 of 1
2406363	

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company: Chevron	
Address: 6855 W 119th Ave		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Bruntz G16-23 FL	
City/State/Zip: Broomfield / CO / 80020				AFE#: LW RWE - A8660-ABN	
Phone: 970-214-7901		Project Name: Bruntz G16-23 FL		PO/Billing Codes:	
Sampler Name: Lillian Buck + Loren Bohannon		Project Number:		Contact: LB Dan Peterson - Miguel Barron	

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	pH, EC, SAR	Boron - HWS	Metals - 915		HOLD
1	FLO1B-WC 1'	6/24/24	917	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	FLO1-01C 1'		924																	
3	FLO1-02C 2'		931																	
4	FLO1-03C 2'		934																	
5	FLO1-06C 1'		944																	
6	BKG01C 1'		1020	2																
7	BKG01C 2'		1022	1																
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: Loren Bohannon	Date/Time: 6/24/24 1200	Received by: Tasman Lockbox	Date/Time: 6/24/24 1200	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 6/24/24 1745	Received by: [Signature]	Date/Time: 6/24/24 1745	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 7.7	Corrected Temperature: 6	IR gun #:	HNO3 lot #:	Standard	X	Field Turb.

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2406363

Client: Noblet Casman Client Project ID: Pruntz Gillo-23 FL

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? <sup>(1)</sup> <b>NOTE:</b> 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
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):

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

AS

Custodian Printed Name

6/24/24  
Date/Time



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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01R-W@1'**  
**2406363-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/24/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0425	106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.0 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.7	85.3 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01R-W@1'**  
**2406363-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.166	0.00500	mg/kg	1	BHF0816	06/25/24	06/26/24	EPA 8270D SIM	
Anthracene	0.180	0.0500	"	10	"	"	06/26/24	"	
Benzo (a) anthracene	0.449	0.0500	"	"	"	"	"	"	
Benzo (a) pyrene	0.287	0.0500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.416	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.138	0.0500	"	"	"	"	"	"	
Chrysene	0.415	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0503	0.00500	"	1	"	"	06/26/24	"	
Fluoranthene	1.21	0.0500	"	10	"	"	06/26/24	"	
Fluorene	0.176	0.00500	"	1	"	"	06/26/24	"	
Indeno (1,2,3-cd) pyrene	0.183	0.00500	"	"	"	"	"	"	
Pyrene	0.976	0.0500	"	10	"	"	06/26/24	"	
1-Methylnaphthalene	0.0120	0.00500	"	1	"	"	06/26/24	"	
2-Methylnaphthalene	0.0184	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.699	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01R-W@1'**  
**2406363-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	59.3	0.400	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Cadmium	0.240	0.200	"	"	"	"	"	"	
Copper	2.98	0.400	"	"	"	"	"	"	
Lead	8.92	0.200	"	"	"	"	"	"	
Nickel	1.60	0.400	"	"	"	"	"	"	
Silver	0.0567	0.0200	"	"	"	"	"	"	
Zinc	8.74	0.400	"	"	"	"	"	"	
Selenium	0.332	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	71.0	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	5.55	0.0500	"	"	"	"	"	"	
Sodium	19.5	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.600	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	BHF0799	06/25/24	06/26/24	Calculation	

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Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01R-W@1'**  
**2406363-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.414</b>	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.39</b>		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-01@1'**  
**2406363-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	16.6	133 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-01@1'**  
**2406363-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.158	0.0500	mg/kg	10	BHF0816	06/25/24	06/26/24	EPA 8270D SIM	
Anthracene	0.278	0.0500	"	"	"	"	"	"	
Benzo (a) anthracene	0.339	0.0500	"	"	"	"	"	"	
Benzo (a) pyrene	0.201	0.0500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.302	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0976	0.0500	"	"	"	"	"	"	
Chrysene	0.332	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0441	0.00500	"	1	"	"	06/26/24	"	
Fluoranthene	1.01	0.0500	"	10	"	"	06/26/24	"	
Fluorene	0.187	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.153	0.00500	"	1	"	"	06/26/24	"	
Pyrene	0.804	0.0500	"	10	"	"	06/26/24	"	
1-Methylnaphthalene	0.0433	0.00500	"	1	"	"	06/26/24	"	
2-Methylnaphthalene	0.0840	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0213	63.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.776	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-01@1'**  
**2406363-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	50.7	0.400	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Cadmium	0.219	0.200	"	"	"	"	"	"	
Copper	2.10	0.400	"	"	"	"	"	"	
Lead	8.35	0.200	"	"	"	"	"	"	
Nickel	1.43	0.400	"	"	"	"	"	"	
Silver	0.0724	0.0200	"	"	"	"	"	"	
Zinc	7.87	0.400	"	"	"	"	"	"	
Selenium	0.266	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	336	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	4.86	0.0500	"	"	"	"	"	"	
Sodium	68.9	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.02	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.5		%	1	BHF0799	06/25/24	06/26/24	Calculation	

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**Reported:**  
07/09/24 07:54

**FL01-01@1'**  
**2406363-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.363</b>	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 09:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.31</b>		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline  
Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-02@2'**  
**2406363-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	18.3	147 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
07/09/24 07:54

**FL01-02@2'**  
**2406363-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00727	0.00500	mg/kg	1	BHF0816	06/25/24	06/26/24	EPA 8270D SIM	
Anthracene	0.0208	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0578	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0385	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0664	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0230	0.00500	"	"	"	"	"	"	
Chrysene	0.0573	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00557	0.00500	"	"	"	"	"	"	
Fluoranthene	0.137	0.00500	"	"	"	"	"	"	
Fluorene	0.00926	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	"	"	"	"	"	
Pyrene	0.126	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0142	42.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.655	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	

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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-02@2'**  
**2406363-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	51.6	0.400	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Cadmium	0.396	0.200	"	"	"	"	"	"	
Copper	2.77	0.400	"	"	"	"	"	"	
Lead	12.5	0.200	"	"	"	"	"	"	
Nickel	1.35	0.400	"	"	"	"	"	"	
Silver	0.143	0.0200	"	"	"	"	"	"	
Zinc	10.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.2	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	8.04	0.0500	"	"	"	"	"	"	
Sodium	105	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.03	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1		%	1	BHF0799	06/25/24	06/26/24	Calculation	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-02@2'**  
**2406363-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.586</b>	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 09:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.69</b>		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline  
Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-03@2'**  
**2406363-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.012</b>	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0435	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-03@2'**  
**2406363-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	0.172	0.100	mg/kg	20	BHF0816	06/25/24	06/26/24	EPA 8270D SIM	
Anthracene	0.321	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	0.491	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	0.303	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.462	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.148	0.100	"	"	"	"	"	"	
Chrysene	0.481	0.100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0621	0.00500	"	1	"	"	06/26/24	"	
Fluoranthene	1.49	0.100	"	20	"	"	06/26/24	"	
Fluorene	0.198	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.304	0.100	"	"	"	"	"	"	E
Pyrene	1.18	0.100	"	"	"	"	"	"	
1-Methylnaphthalene	0.0376	0.00500	"	1	"	"	06/26/24	"	
2-Methylnaphthalene	0.0685	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.717	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	

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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-03@2'**  
**2406363-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	76.2	0.400	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Cadmium	0.270	0.200	"	"	"	"	"	"	
Copper	2.21	0.400	"	"	"	"	"	"	
Lead	8.65	0.200	"	"	"	"	"	"	
Nickel	1.86	0.400	"	"	"	"	"	"	
Silver	0.0992	0.0200	"	"	"	"	"	"	
Zinc	8.49	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	88.6	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	17.2	0.0500	"	"	"	"	"	"	
Sodium	209	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.32	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BHF0799	06/25/24	06/26/24	Calculation	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-03@2'**  
**2406363-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>1.60</b>	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.77</b>		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-06@1'**  
**2406363-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	EPA 8260B	
<b>Toluene</b>	<b>0.0058</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.012</b>	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>3.3</b>	0.038	"	10	"	"	07/01/24	"	
Gasoline Range Hydrocarbons	ND	0.50	"	1	"	"	06/29/24	"	

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0421	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>190</b>	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.9	119 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-06@1'**  
**2406363-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	1.98	0.500	mg/kg	100	BHF0816	06/25/24	06/26/24	EPA 8270D SIM	
Anthracene	2.55	0.500	"	"	"	"	"	"	
Benzo (a) anthracene	3.26	0.500	"	"	"	"	"	"	
Benzo (a) pyrene	1.98	0.500	"	"	"	"	"	"	
Benzo (b) fluoranthene	2.98	0.500	"	"	"	"	"	"	
Benzo (k) fluoranthene	1.00	0.500	"	"	"	"	"	"	
Chrysene	3.07	0.500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.545	0.500	"	"	"	"	"	"	
Fluoranthene	10.3	0.500	"	"	"	"	"	"	
Fluorene	2.26	0.500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	1.81	0.500	"	"	"	"	"	"	
Pyrene	7.94	0.500	"	"	"	"	"	"	
1-Methylnaphthalene	0.583	0.00500	"	1	"	"	"	"	E
2-Methylnaphthalene	1.15	0.00500	"	"	"	"	"	"	E

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0195	58.5 %	40-150		"	"	06/26/24	"	
Surrogate: Fluoranthene-d10	0.0103	31.0 %	40-150		"	"	"	"	S-02

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.692	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-06@1'**  
**2406363-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	68.1	0.400	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Cadmium	0.296	0.200	"	"	"	"	"	"	
Copper	27.0	0.400	"	"	"	"	"	"	
Lead	9.22	0.200	"	"	"	"	"	"	
Nickel	1.65	0.400	"	"	"	"	"	"	
Silver	0.0703	0.0200	"	"	"	"	"	"	
Zinc	13.3	0.400	"	"	"	"	"	"	
Selenium	0.261	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	91.7	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	54.0	0.0500	"	"	"	"	"	"	
Sodium	1160	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	23.8	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BHF0799	06/25/24	06/26/24	Calculation	

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6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**FL01-06@1'**  
**2406363-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.20	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.57		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**BKG01@1'**  
**2406363-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.775	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Barium	76.5	0.400	"	"	"	"	"	"	
Cadmium	0.266	0.200	"	"	"	"	"	"	
Copper	2.29	0.400	"	"	"	"	"	"	
Lead	9.20	0.200	"	"	"	"	"	"	
Nickel	1.76	0.400	"	"	"	"	"	"	
Silver	0.0807	0.0200	"	"	"	"	"	"	
Zinc	8.78	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	43.5	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	6.64	0.0500	"	"	"	"	"	"	
Sodium	50.4	0.0500	"	"	"	"	"	"	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**BKG01@1'**  
**2406363-06 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.88	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BHF0799	06/25/24	06/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.542	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**BKG01@2'**  
**2406363-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0798	06/25/24	06/27/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>0.858</b>	0.200	mg/kg dry	1	BHF0814	06/25/24	06/28/24	EPA 6020B	
Barium	<b>108</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.223</b>	0.200	"	"	"	"	"	"	
Copper	<b>1.96</b>	0.400	"	"	"	"	"	"	
Lead	<b>6.97</b>	0.200	"	"	"	"	"	"	
Nickel	<b>2.35</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.0808</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>7.65</b>	0.400	"	"	"	"	"	"	
Selenium	<b>0.313</b>	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0815	06/25/24	06/25/24	EPA 7196A	

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

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>423</b>	0.0500	mg/L dry	1	BHF0889	06/26/24	06/28/24	EPA 6020B	
Magnesium	<b>6.42</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>104</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline  
Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**BKG01@2'**  
**2406363-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.38	0.00100	units	1	BHF0955	06/28/24	06/28/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BHF0799	06/25/24	06/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.462	0.0100	mmhos/cm	1	BHF0891	06/26/24	06/27/24	EPA 120.1	

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

Date Sampled: **06/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BHF0892	06/26/24	06/27/24	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

### 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 BHF0886 - EPA 5030 Soil MS

##### Blank (BHF0886-BLK1)

Prepared: 06/26/24 Analyzed: 06/29/24

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	0.0390		"	0.0400		97.4	50-150				
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150				
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	50-150				

##### LCS (BHF0886-BS1)

Prepared: 06/26/24 Analyzed: 06/29/24

Benzene	0.0979	0.0020	mg/kg	0.100		97.9	70-130				
Toluene	0.0977	0.0050	"	0.100		97.7	70-130				
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130				
m,p-Xylene	0.188	0.010	"	0.200		94.0	70-130				
o-Xylene	0.0882	0.0050	"	0.100		88.2	70-130				
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130				
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100		99.4	70-130				
Naphthalene	0.101	0.0038	"	0.100		101	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	50-150				
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150				
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150				

##### Matrix Spike (BHF0886-MS1)

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/29/24

Benzene	0.0741	0.0020	mg/kg	0.100	ND	74.1	70-130				
Toluene	0.0751	0.0050	"	0.100	ND	75.1	70-130				
Ethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130				
m,p-Xylene	0.158	0.010	"	0.200	ND	79.1	70-130				
o-Xylene	0.0758	0.0050	"	0.100	ND	75.8	70-130				
1,2,4-Trimethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130				
1,3,5-Trimethylbenzene	0.0907	0.0050	"	0.100	ND	90.7	70-130				
Naphthalene	0.0495	0.0038	"	0.100	ND	49.5	70-130				QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	50-150				
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150				
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7	50-150				

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0886 - EPA 5030 Soil MS**

Matrix Spike Dup (BHF0886-MSD1)	Source: 2406363-01			Prepared: 06/26/24 Analyzed: 06/29/24						
Benzene	0.0760	0.0020	mg/kg	0.100	ND	76.0	70-130	2.52	30	
Toluene	0.0758	0.0050	"	0.100	ND	75.8	70-130	0.994	30	
Ethylbenzene	0.0885	0.0050	"	0.100	ND	88.5	70-130	1.21	30	
m,p-Xylene	0.158	0.010	"	0.200	ND	79.1	70-130	0.00	30	
o-Xylene	0.0767	0.0050	"	0.100	ND	76.7	70-130	1.10	30	
1,2,4-Trimethylbenzene	0.0796	0.0050	"	0.100	ND	79.6	70-130	1.10	30	
1,3,5-Trimethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130	3.81	30	
Naphthalene	0.0498	0.0038	"	0.100	ND	49.8	70-130	0.483	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline  
Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0884 - EPA 3550A**

**Blank (BHF0884-BLK1)**

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	15.7		"	12.5		126		30-150			

**LCS (BHF0884-BS1)**

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	646	50	mg/kg	500		129		70-130			
Surrogate: <i>o</i> -Terphenyl	16.9		"	12.5		136		30-150			

**Matrix Spike (BHF0884-MS1)**

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	617	50	mg/kg	500	14.8	120		70-130			
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		107		30-150			

**Matrix Spike Dup (BHF0884-MSD1)**

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	653	50	mg/kg	500	14.8	128		70-130	5.60	20	
Surrogate: <i>o</i> -Terphenyl	12.6		"	12.5		101		30-150			

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**Reported:**  
07/09/24 07:54

**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 BHF0816 - EPA 5030 Soil MS**

**Blank (BHF0816-BLK1)**

Prepared & Analyzed: 06/25/24

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	0.0265		"	0.0333		79.4	40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.9	40-150			

**LCS (BHF0816-BS1)**

Prepared & Analyzed: 06/25/24

Acenaphthene	0.0222	0.00500	mg/kg	0.0333		66.6	31-137			
Anthracene	0.0243	0.00500	"	0.0333		73.0	30-120			
Benzo (a) anthracene	0.0265	0.00500	"	0.0333		79.6	30-120			
Benzo (a) pyrene	0.0254	0.00500	"	0.0333		76.1	30-120			
Benzo (b) fluoranthene	0.0258	0.00500	"	0.0333		77.3	30-120			
Benzo (k) fluoranthene	0.0249	0.00500	"	0.0333		74.7	30-120			
Chrysene	0.0256	0.00500	"	0.0333		76.8	30-120			
Dibenz (a,h) anthracene	0.0241	0.00500	"	0.0333		72.2	30-120			
Fluoranthene	0.0256	0.00500	"	0.0333		76.9	30-120			
Fluorene	0.0245	0.00500	"	0.0333		73.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0246	0.00500	"	0.0333		73.9	30-120			
Pyrene	0.0264	0.00500	"	0.0333		79.3	35-142			
1-Methylnaphthalene	0.0216	0.00500	"	0.0333		64.8	35-142			
2-Methylnaphthalene	0.0221	0.00500	"	0.0333		66.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.9	40-150			
Surrogate: Fluoranthene-d10	0.0265		"	0.0333		79.4	40-150			

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0816 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0816-MS1)</b>	<b>Source: 2406339-01</b>			<b>Prepared &amp; Analyzed: 06/25/24</b>								
Acenaphthene	0.0153	0.00500	mg/kg	0.0333	ND	45.8	31-137					
Anthracene	0.0165	0.00500	"	0.0333	ND	49.4	30-120					
Benzo (a) anthracene	0.0179	0.00500	"	0.0333	ND	53.6	30-120					
Benzo (a) pyrene	0.0170	0.00500	"	0.0333	ND	51.0	30-120					
Benzo (b) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120					
Benzo (k) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.7	30-120					
Chrysene	0.0169	0.00500	"	0.0333	ND	50.6	30-120					
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.6	30-120					
Fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120					
Fluorene	0.0164	0.00500	"	0.0333	ND	49.1	30-120					
Indeno (1,2,3-cd) pyrene	0.0146	0.00500	"	0.0333	ND	43.9	30-120					
Pyrene	0.0186	0.00500	"	0.0333	ND	55.8	35-142					
1-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.8	15-130					
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0232</i>		<i>"</i>	<i>0.0333</i>		<i>69.7</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0333</i>		<i>54.2</i>	<i>40-150</i>					

<b>Matrix Spike Dup (BHF0816-MSD1)</b>	<b>Source: 2406339-01</b>			<b>Prepared &amp; Analyzed: 06/25/24</b>								
Acenaphthene	0.0148	0.00500	mg/kg	0.0333	ND	44.4	31-137	2.97	30			
Anthracene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	11.2	30			
Benzo (a) anthracene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	13.8	30			
Benzo (a) pyrene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	13.1	30			
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	16.3	30			
Benzo (k) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	16.1	30			
Chrysene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	14.1	30			
Dibenz (a,h) anthracene	0.0147	0.00500	"	0.0333	ND	44.0	30-120	10.0	30			
Fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	7.64	30			
Fluorene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	2.23	30			
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	4.23	30			
Pyrene	0.0157	0.00500	"	0.0333	ND	47.0	35-142	17.1	30			
1-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.5	15-130	7.55	50			
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.4	15-130	8.07	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0218</i>		<i>"</i>	<i>0.0333</i>		<i>65.4</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0168</i>		<i>"</i>	<i>0.0333</i>		<i>50.5</i>	<i>40-150</i>					

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

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BHF0798 - EPA 3050B**

**Blank (BHF0798-BLK1)**

Prepared: 06/25/24 Analyzed: 06/27/24

Boron ND 2.00 mg/L

**LCS (BHF0798-BS1)**

Prepared: 06/25/24 Analyzed: 06/27/24

Boron 5.15 2.00 mg/L 5.00 103 80-120

**Duplicate (BHF0798-DUP1)**

Source: 2406339-01

Prepared: 06/25/24 Analyzed: 06/27/24

Boron 0.932 2.00 mg/L 0.931 0.165 20

**Matrix Spike (BHF0798-MS1)**

Source: 2406339-01

Prepared: 06/25/24 Analyzed: 06/27/24

Boron 5.84 2.00 mg/L 5.02 0.931 97.9 75-125

**Matrix Spike Dup (BHF0798-MSD1)**

Source: 2406339-01

Prepared: 06/25/24 Analyzed: 06/27/24

Boron 6.05 2.00 mg/L 5.02 0.931 102 75-125 3.57 25

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6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BHF0814 - EPA 3050B**

**Blank (BHF0814-BLK1)**

Prepared: 06/25/24 Analyzed: 06/28/24

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	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

**LCS (BHF0814-BS1)**

Prepared: 06/25/24 Analyzed: 06/28/24

Arsenic	37.9	0.200	mg/kg wet	40.0	94.7	80-120
Barium	37.2	0.400	"	40.0	93.1	80-120
Cadmium	1.88	0.200	"	2.00	94.2	80-120
Copper	39.9	0.400	"	40.0	99.7	80-120
Lead	19.1	0.200	"	20.0	95.3	80-120
Nickel	39.2	0.400	"	40.0	98.0	80-120
Silver	1.88	0.0200	"	2.00	94.0	80-120
Zinc	38.6	0.400	"	40.0	96.5	80-120
Selenium	3.85	0.260	"	4.00	96.2	80-120

**Duplicate (BHF0814-DUP1)**

Source: 2406061-01RE1

Prepared: 06/25/24 Analyzed: 06/28/24

Arsenic	0.307	0.200	mg/kg wet	0.264	15.1	20	
Barium	14.5	0.400	"	15.1	4.07	20	
Cadmium	0.136	0.200	"	0.146	6.94	20	
Copper	1.15	0.400	"	1.04	9.71	20	
Lead	3.42	0.200	"	3.93	13.8	20	
Nickel	0.684	0.400	"	0.481	34.8	20	QR-04
Silver	0.0277	0.0200	"	0.0314	12.4	20	
Zinc	5.25	0.400	"	4.97	5.51	20	
Selenium	ND	0.260	"	0.240	200	20	QR-01

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6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0814 - EPA 3050B**

**Matrix Spike (BHF0814-MS1)**

Source: 2406061-01RE1 Prepared: 06/25/24 Analyzed: 06/28/24

Arsenic	12.8	0.200	mg/kg wet	38.5	0.264	32.7	75-125				QM-05
Barium	52.8	0.400	"	38.5	15.1	98.0	75-125				
Cadmium	2.02	0.200	"	1.92	0.146	97.4	75-125				
Copper	13.7	0.400	"	38.5	1.04	32.9	75-125				QM-05
Lead	20.4	0.200	"	19.2	3.93	85.7	75-125				
Nickel	13.2	0.400	"	38.5	0.481	33.1	75-125				QM-05
Silver	1.87	0.0200	"	1.92	0.0314	95.6	75-125				
Zinc	17.7	0.400	"	38.5	4.97	33.0	75-125				QM-05
Selenium	1.45	0.260	"	3.85	0.240	31.5	75-125				QM-05

**Matrix Spike Dup (BHF0814-MSD1)**

Source: 2406061-01RE1 Prepared: 06/25/24 Analyzed: 06/28/24

Arsenic	10.4	0.200	mg/kg wet	36.5	0.264	27.8	75-125	20.9	25		QM-05
Barium	53.4	0.400	"	36.5	15.1	105	75-125	1.12	25		
Cadmium	1.90	0.200	"	1.82	0.146	96.3	75-125	5.93	25		
Copper	11.4	0.400	"	36.5	1.04	28.3	75-125	18.3	25		QM-05
Lead	20.1	0.200	"	18.2	3.93	88.6	75-125	1.59	25		
Nickel	10.9	0.400	"	36.5	0.481	28.5	75-125	19.3	25		QM-05
Silver	1.73	0.0200	"	1.82	0.0314	92.9	75-125	7.91	25		
Zinc	15.6	0.400	"	36.5	4.97	29.1	75-125	12.3	25		QM-05
Selenium	1.22	0.260	"	3.65	0.240	26.9	75-125	17.1	25		QM-05

**Post Spike (BHF0814-PS1)**

Source: 2406061-01RE1 Prepared: 06/25/24 Analyzed: 06/28/24

Arsenic	33.5		ug/l	100	0.681	32.8	75-125				QM-01
Barium	134		"	100	39.0	95.5	75-125				
Cadmium	5.24		"	5.00	0.377	97.3	75-125				
Copper	34.9		"	100	2.68	32.2	75-125				QM-01
Lead	54.5		"	50.0	10.1	88.7	75-125				
Nickel	33.5		"	100	1.24	32.3	75-125				QM-01
Silver	4.92		"	5.00	0.0810	96.8	75-125				
Zinc	44.9		"	100	12.8	32.1	75-125				QM-01
Selenium	3.30		"	10.0	0.619	26.8	75-125				QM-01

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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	Limit		

**Batch BHF0815 - 3060A Mod**

**Blank (BHF0815-BLK1)**

Prepared & Analyzed: 06/25/24

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BHF0815-BS1)**

Prepared & Analyzed: 06/25/24

Chromium, Hexavalent      25.2      0.30    mg/kg wet      25.0      101      80-120

**Duplicate (BHF0815-DUP1)**

**Source: 2406338-01**

Prepared & Analyzed: 06/25/24

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BHF0815-MS1)**

**Source: 2406338-01**

Prepared & Analyzed: 06/25/24

Chromium, Hexavalent      29.6      0.30    mg/kg dry      30.1      ND      98.6      75-125

**Matrix Spike Dup (BHF0815-MSD1)**

**Source: 2406338-01**

Prepared & Analyzed: 06/25/24

Chromium, Hexavalent      29.8      0.30    mg/kg dry      30.1      ND      99.0      75-125      0.405      20

Summit Scientific

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

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

**Summit Scientific**

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

**Batch BHF0889 - General Preparation**

**Blank (BHF0889-BLK1)**

Prepared: 06/26/24 Analyzed: 06/28/24

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BHF0889-BS1)**

Prepared: 06/26/24 Analyzed: 06/28/24

Calcium	5.07	0.0500	mg/L wet	5.00	101	70-130				
Magnesium	5.10	0.0500	"	5.00	102	70-130				
Sodium	4.51	0.0500	"	5.00	90.2	70-130				

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 07/09/24 07:54

**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 BHF0799 - General Preparation**

Duplicate (BHF0799-DUP1)	Source: 2406355-01			Prepared: 06/25/24 Analyzed: 06/26/24	
% Solids	91.0		%	91.5	0.556 20

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0891 - General Preparation**

**Blank (BHF0891-BLK1)**

Prepared: 06/26/24 Analyzed: 06/27/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHF0891-BS1)**

Prepared: 06/26/24 Analyzed: 06/27/24

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.7 95-105

**Duplicate (BHF0891-DUP1)**

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/27/24

Specific Conductance (EC) 0.402 0.0100 mmhos/cm 0.414 2.97 20

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

**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 BHF0892 - General Preparation**

**LCS (BHF0892-BS1)**

Prepared: 06/26/24 Analyzed: 06/27/24

pH	9.12		pH Units	9.18		99.3	95-105		
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**Duplicate (BHF0892-DUP1)**

**Source: 2406363-01**

Prepared: 06/26/24 Analyzed: 06/27/24

pH	8.37		pH Units	8.39		0.239	20		
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6855 W. 119th Ave.  
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/09/24 07:54

### 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.
- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- 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.
- 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.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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