

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 21, 2025

Mike Medina

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Bruntz G16-23 Flowline

Work Order #2501085

Enclosed are the results of analyses for samples received by Summit Scientific on 01/09/25 17:38. 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 fluid and cursive, with the first name being more prominent.

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: Mike Medina

Reported:
01/21/25 11:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01-E@3'	2501085-01	Soil	01/09/25 09:36	01/09/25 17:38
SS02-E@1'	2501085-02	Soil	01/09/25 09:38	01/09/25 17:38
SS03-E@1'	2501085-03	Soil	01/09/25 09:40	01/09/25 17:38
SS04-E@1'	2501085-04	Soil	01/09/25 09:42	01/09/25 17:38
SS05-E@1'	2501085-05	Soil	01/09/25 09:44	01/09/25 17:38
SS01-D@4'	2501085-06	Soil	01/09/25 14:21	01/09/25 17:38
SS02-D@2'	2501085-07	Soil	01/09/25 14:23	01/09/25 17:38
SS03-D@2'	2501085-08	Soil	01/09/25 14:25	01/09/25 17:38
SS04-D@2'	2501085-09	Soil	01/09/25 14:27	01/09/25 17:38
SS05-D@2'	2501085-10	Soil	01/09/25 14:29	01/09/25 17:38

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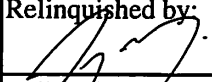
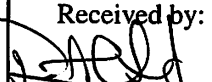
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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2501085	

Client: Noble / Tasman		Send Data To: Project Manager: Mike Medina		Send Invoice To: Company: Noble Energy	
Address: 6855 W 119th Ave		E-Mail: jason.davidson@chevron.com; tas-chevron-2@tasman-geo.com; rbueuf27@chevron.com		Project Name/Location: Bruntz G16-23 Flowline	
City/State/Zip: Broomfield / CO / 80020		Project Name: Bruntz G16-23 Flowline		AFE#:	
Phone: 303-487-1228		Project Number:		PO/Billing Codes:	
Sampler Name: Jon Meyer				Contact: Jason Davidson	

					Preservative				Matrix			Analysis Requested						Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	* Full 915-1 Suite	pH, EC, SAR, boron	* Table 915-1 Metals		
1	SS01-E@3'	1/9/25	936	2			X			X							X		X	
2	SS02-F@1'		938																	
3	SS03-F@1'		940																	
4	SS04-E@1'		942																	
5	SS05-E@1'		944																	
6	SS01-D@4'		1421																	
7	SS02-D@2'		1423																	
8	SS03-D@2'		1425																	
9	SS04-D@2'		1427																	
10	SS05-D@2'		1429																	
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 1/9/25 1600	Received by: Tasman Dropbox	Date/Time: 1/9/25 1600	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Dropbox	Date/Time: 1/9/25 1738	Received by: 	Date/Time: 1/9/25 1738	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
				Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 5.9	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order: 2501085Client: Nobel Asman Client Project ID: Bruntz G 16-23 FlowlineShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ ☒ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 5.9Thermometer # 1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 20e
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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, H ₂ SO ₄ , NaOH, HNO ₃ , 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.
AS
Custodian Printed Name

1/9/25
Date/Time



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

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS01-E@3'
2501085-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.37	58.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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01/21/25 11:59

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2501085-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00975	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	EPA 8270D SIM	
Anthracene	0.0150	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0287	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0201	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0325	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00950	0.00500	"	"	"	"	"	"	
Chrysene	0.0296	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00634	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0749	0.00500	"	"	"	"	"	"	
Fluorene	0.0109	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0159	0.00500	"	"	"	"	"	"	
Pyrene	0.0648	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0259	77.6 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.76	0.200	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B	

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SS01-E@3'
2501085-01 (Soil)

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Total Metals by EPA 6020B

Barium	55.0	0.400	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B
Cadmium	0.216	0.200	"	"	"	"	"	"
Copper	18.7	0.400	"	"	"	"	"	"
Lead	6.50	0.200	"	"	"	"	"	"
Nickel	3.77	0.400	"	"	"	"	"	"
Silver	0.106	0.0200	"	"	"	"	"	"
Zinc	20.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0813	01/17/25	01/17/25	EPA 7196A	

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

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.0	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	17.6	0.0500	"	"	"	"	"	"	
Sodium	303	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.0	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BIA0400	01/10/25	01/13/25	Calculation	

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SS01-E@3'
2501085-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.18	0.0100		mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 09:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.46			pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

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Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-E@1'
2501085-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0407	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.64	61.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0206	61.8 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0201	60.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3660-ABN
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Reported:
01/21/25 11:59

SS02-E@1'
2501085-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.07	0.200	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B
Barium	47.7	0.400	"	"	"	"	"	"
Cadmium	0.210	0.200	"	"	"	"	"	"
Copper	23.2	0.400	"	"	"	"	"	"
Lead	7.01	0.200	"	"	"	"	"	"
Nickel	3.68	0.400	"	"	"	"	"	"
Silver	0.106	0.0200	"	"	"	"	"	"
Zinc	21.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.0	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	87.4	0.0500	"	"	"	"	"	"	
Sodium	894	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	17.7	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-E@1'
2501085-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.7	%	1	BIA0400	01/10/25	01/13/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.87	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.52		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

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: Mike Medina

Reported:
01/21/25 11:59

SS03-E@1'
2501085-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.40	67.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS03-E@1'
2501085-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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	0.00634	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.9 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 09:40**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS03-E@1'
2501085-03 (Soil)

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Total Metals by EPA 6020B

Arsenic	1.71	0.200	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B
Barium	47.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.58	0.400	"	"	"	"	"	"
Lead	5.64	0.200	"	"	"	"	"	"
Nickel	3.22	0.400	"	"	"	"	"	"
Silver	0.0846	0.0200	"	"	"	"	"	"
Zinc	15.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	99.4	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	26.5	0.0500	"	"	"	"	"	"	
Sodium	260	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.99	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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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: Mike Medina

Reported:
01/21/25 11:59

SS03-E@1'
2501085-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BIA0400	01/10/25	01/13/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.95	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.43		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-E@1'
2501085-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.33	66.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-E@1'
2501085-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.3 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0265	79.5 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-E@1'
2501085-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.49	0.200	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B
Barium	46.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	15.9	0.400	"	"	"	"	"	"
Lead	5.29	0.200	"	"	"	"	"	"
Nickel	3.39	0.400	"	"	"	"	"	"
Silver	0.0894	0.0200	"	"	"	"	"	"
Zinc	17.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.9	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	14.7	0.0500	"	"	"	"	"	"	
Sodium	234	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.68	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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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: Mike Medina

Reported:
01/21/25 11:59

SS04-E@1'
2501085-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.3		%	1	BIA0400	01/10/25	01/13/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.56	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

Summit Scientific

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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: Mike Medina

Reported:
01/21/25 11:59

SS05-E@1'
2501085-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 09:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0384	96.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.83	62.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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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: Mike Medina

Reported:
01/21/25 11:59

SS05-E@1'
2501085-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0340	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	EPA 8270D SIM	
Anthracene	0.119	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.237	0.00500	"	"	"	"	"	"	E
Benzo (a) pyrene	0.173	0.00500	"	"	"	"	"	"	E
Benzo (b) fluoranthene	0.286	0.00500	"	"	"	"	"	"	E
Benzo (k) fluoranthene	0.107	0.00500	"	"	"	"	"	"	
Chrysene	0.238	0.00500	"	"	"	"	"	"	E
Dibenz (a,h) anthracene	0.0369	0.00500	"	"	"	"	"	"	
Fluoranthene	0.372	0.00500	"	"	"	"	"	"	E
Fluorene	0.0554	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.105	0.00500	"	"	"	"	"	"	
Pyrene	0.375	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0185	55.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.8 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.94	0.200	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B	

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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: Mike Medina

Reported:
01/21/25 11:59

SS05-E@1'
2501085-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Barium	68.5	0.400	mg/kg dry	1	BIA0417	01/10/25	01/10/25	EPA 6020B
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	14.0	0.400	"	"	"	"	"	"
Lead	6.11	0.200	"	"	"	"	"	"
Nickel	3.89	0.400	"	"	"	"	"	"
Silver	0.0997	0.0200	"	"	"	"	"	"
Zinc	19.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.8	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	23.7	0.0500	"	"	"	"	"	"	
Sodium	433	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.7	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 09:44**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS05-E@1'
2501085-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.5	%	1	BIA0400	01/10/25	01/13/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.10	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 09:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BIA0387	01/09/25	01/10/25	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: Mike Medina

Reported:
01/21/25 11:59

SS01-D@4'
2501085-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 14:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.83	70.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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: Mike Medina

Reported:
01/21/25 11:59

SS01-D@4'
2501085-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00581	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00575	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00797	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.00657	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0216	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00931	0.00500	"	"	"	"	"	"	
Pyrene	0.0170	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0158	47.3 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0161	48.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0401	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 14:21**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS01-D@4'
2501085-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.15	0.200	mg/kg dry	1	BIA0419	01/10/25	01/10/25	EPA 6020B
Barium	51.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.82	0.400	"	"	"	"	"	"
Lead	6.48	0.200	"	"	"	"	"	"
Nickel	4.08	0.400	"	"	"	"	"	"
Silver	0.112	0.0200	"	"	"	"	"	"
Zinc	18.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	85.4	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	22.3	0.0500	"	"	"	"	"	"	
Sodium	246	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.13	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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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: Mike Medina

Reported:
01/21/25 11:59

SS01-D@4'
2501085-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	BIA0400	01/10/25	01/13/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.20	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-D@2'
2501085-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 14:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/09/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.15	73.2 %	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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-D@2'
2501085-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0192	57.6 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.9 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0402	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 14:23**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-D@2'
2501085-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.62	0.200	mg/kg dry	1	BIA0419	01/10/25	01/10/25	EPA 6020B
Barium	77.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.20	0.400	"	"	"	"	"	"
Lead	7.01	0.200	"	"	"	"	"	"
Nickel	6.41	0.400	"	"	"	"	"	"
Silver	0.118	0.0200	"	"	"	"	"	"
Zinc	20.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	186	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	56.0	0.0500	"	"	"	"	"	"	
Sodium	579	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.56	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS02-D@2'
2501085-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BIA0400	01/10/25	01/13/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.02	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.70		pH Units	1	BIA0387	01/09/25	01/10/25	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: Mike Medina

Reported:
01/21/25 11:59

SS03-D@2'
2501085-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0388	96.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/10/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.13	73.0 %	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: Mike Medina

Reported:
01/21/25 11:59

SS03-D@2'
2501085-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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	0.00744	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0151	45.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BIA0402	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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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: Mike Medina

Reported:
01/21/25 11:59

SS03-D@2'
2501085-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.20	0.200	mg/kg dry	1	BIA0419	01/10/25	01/10/25	EPA 6020B
Barium	53.4	0.400	"	"	"	"	"	"
Cadmium	0.215	0.200	"	"	"	"	"	"
Copper	5.76	0.400	"	"	"	"	"	"
Lead	7.53	0.200	"	"	"	"	"	"
Nickel	4.12	0.400	"	"	"	"	"	"
Silver	0.127	0.0200	"	"	"	"	"	"
Zinc	21.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.5	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	9.90	0.0500	"	"	"	"	"	"	
Sodium	85.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.04	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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: Mike Medina

Reported:
01/21/25 11:59

SS03-D@2'
2501085-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	92.1	%	1	BIA0400	01/10/25	01/13/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.856	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.70		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-D@2'
2501085-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/09/25	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: **01/09/25 14:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0402	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/10/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.42	75.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-D@2'
2501085-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	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: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.9 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0158	47.3 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0402	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 14:27**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS04-D@2'
2501085-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.75	0.200	mg/kg dry	1	BIA0419	01/10/25	01/10/25	EPA 6020B
Barium	66.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.40	0.400	"	"	"	"	"	"
Lead	6.02	0.200	"	"	"	"	"	"
Nickel	5.23	0.400	"	"	"	"	"	"
Silver	0.106	0.0200	"	"	"	"	"	"
Zinc	18.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	104	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	26.9	0.0500	"	"	"	"	"	"	
Sodium	309	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.99	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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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: Mike Medina

Reported:
01/21/25 11:59

SS04-D@2'
2501085-09 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9		%	1	BIA0400	01/10/25	01/13/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.65	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BIA0387	01/09/25	01/10/25	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: Mike Medina

Reported:
01/21/25 11:59

SS05-D@2'
2501085-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BIA0382	01/09/25	01/10/25	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: **01/09/25 14:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BIA0384	01/09/25	01/10/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.2	81.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
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Reported:
01/21/25 11:59

SS05-D@2'
2501085-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIA0563	01/14/25	01/17/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0504	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0329	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0655	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0226	0.00500	"	"	"	"	"	"	
Chrysene	0.0569	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0102	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0882	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0265	0.00500	"	"	"	"	"	"	
Pyrene	0.0798	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0183	55.0 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.5 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIA0402	01/10/25	01/10/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/09/25 14:29**

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 - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS05-D@2'
2501085-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.37	0.200	mg/kg dry	1	BIA0419	01/10/25	01/10/25	EPA 6020B
Barium	57.8	0.400	"	"	"	"	"	"
Cadmium	0.264	0.200	"	"	"	"	"	"
Copper	6.82	0.400	"	"	"	"	"	"
Lead	9.56	0.200	"	"	"	"	"	"
Nickel	4.33	0.400	"	"	"	"	"	"
Silver	0.165	0.0200	"	"	"	"	"	"
Zinc	25.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIA0398	01/10/25	01/10/25	EPA 7196A	

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

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	133	0.0500	mg/L dry	1	BIA0383	01/09/25	01/10/25	EPA 6020B	
Magnesium	28.9	0.0500	"	"	"	"	"	"	
Sodium	206	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.22	0.00100	units	1	BIA0502	01/13/25	01/13/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

SS05-D@2'
2501085-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.2	%	1	BIA0400	01/10/25	01/13/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.50	0.0100	mmhos/cm	1	BIA0388	01/09/25	01/10/25	EPA 120.1	

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

Date Sampled: **01/09/25 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63		pH Units	1	BIA0387	01/09/25	01/10/25	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BIA0382 - EPA 5030 Soil MS

Blank (BIA0382-BLK1)

Prepared: 01/09/25 Analyzed: 01/10/25

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	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	50-150			

LCS (BIA0382-BS1)

Prepared: 01/09/25 Analyzed: 01/10/25

Benzene	0.111	0.0020	mg/kg	0.100		111	70-130			
Toluene	0.109	0.0050	"	0.100		109	70-130			
Ethylbenzene	0.0979	0.0050	"	0.100		97.9	70-130			
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130			
o-Xylene	0.0981	0.0050	"	0.100		98.1	70-130			
1,2,4-Trimethylbenzene	0.0984	0.0050	"	0.100		98.4	70-130			
1,3,5-Trimethylbenzene	0.0966	0.0050	"	0.100		96.6	70-130			
Naphthalene	0.0912	0.0038	"	0.100		91.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.8	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

Matrix Spike (BIA0382-MS1)

Source: 2501085-01

Prepared: 01/09/25 Analyzed: 01/10/25

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130			
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Ethylbenzene	0.0858	0.0050	"	0.100	ND	85.8	70-130			
m,p-Xylene	0.170	0.010	"	0.200	ND	84.8	70-130			
o-Xylene	0.0861	0.0050	"	0.100	ND	86.1	70-130			
1,2,4-Trimethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130			
1,3,5-Trimethylbenzene	0.0819	0.0050	"	0.100	ND	81.9	70-130			
Naphthalene	0.0730	0.0038	"	0.100	ND	73.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		99.9	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

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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: Mike Medina

Reported:
01/21/25 11:59

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

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

Batch BIA0382 - EPA 5030 Soil MS

Matrix Spike Dup (BIA0382-MSD1)		Source: 2501085-01			Prepared: 01/09/25 Analyzed: 01/10/25					
Benzene	0.0998	0.0020	mg/kg	0.100	ND	99.8	70-130	0.659	30	
Toluene	0.0994	0.0050	"	0.100	ND	99.4	70-130	0.0905	30	
Ethylbenzene	0.0875	0.0050	"	0.100	ND	87.5	70-130	2.01	30	
m,p-Xylene	0.175	0.010	"	0.200	ND	87.5	70-130	3.10	30	
o-Xylene	0.0866	0.0050	"	0.100	ND	86.6	70-130	0.591	30	
1,2,4-Trimethylbenzene	0.0832	0.0050	"	0.100	ND	83.2	70-130	1.38	30	
1,3,5-Trimethylbenzene	0.0844	0.0050	"	0.100	ND	84.4	70-130	3.03	30	
Naphthalene	0.0768	0.0038	"	0.100	ND	76.8	70-130	5.09	30	
Surrogate: 1,2-Dichloroethane-d4		0.0398	"	0.0400		99.4	50-150			
Surrogate: Toluene-d8		0.0404	"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene		0.0402	"	0.0400		100	50-150			

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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BIA0384 - EPA 3550A

Blank (BIA0384-BLK1)

Prepared: 01/09/25 Analyzed: 01/10/25

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.3		"	12.5		106	30-150			

LCS (BIA0384-BS1)

Prepared: 01/09/25 Analyzed: 01/10/25

C10-C28 (DRO)	547	50	mg/kg	500		109	70-130			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike (BIA0384-MS1)

Source: 2501085-01

Prepared: 01/09/25 Analyzed: 01/10/25

C10-C28 (DRO)	564	50	mg/kg	500	28.2	107	70-130			
Surrogate: o-Terphenyl	9.58		"	12.5		76.6	30-150			

Matrix Spike Dup (BIA0384-MSD1)

Source: 2501085-01

Prepared: 01/09/25 Analyzed: 01/10/25

C10-C28 (DRO)	646	50	mg/kg	500	28.2	124	70-130	13.6	20	
Surrogate: o-Terphenyl	8.83		"	12.5		70.6	30-150			

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Tasman Geosciences
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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BIA0563 - EPA 5030 Soil MS

Blank (BIA0563-BLK1)

Prepared: 01/14/25 Analyzed: 01/17/25

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	0.0165		"	0.0333		49.5	40-140			
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-140			

LCS (BIA0563-BS1)

Prepared: 01/14/25 Analyzed: 01/17/25

Acenaphthene	0.0219	0.00500	mg/kg	0.0333		65.7	40-140			
Anthracene	0.0261	0.00500	"	0.0333		78.2	40-140			
Benzo (a) anthracene	0.0261	0.00500	"	0.0333		78.4	40-140			
Benzo (a) pyrene	0.0254	0.00500	"	0.0333		76.1	40-140			
Benzo (b) fluoranthene	0.0230	0.00500	"	0.0333		68.9	40-140			
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333		71.9	40-140			
Chrysene	0.0256	0.00500	"	0.0333		76.9	40-140			
Dibenz (a,h) anthracene	0.0368	0.00500	"	0.0333		111	40-140			
Fluoranthene	0.0267	0.00500	"	0.0333		80.2	40-140			
Fluorene	0.0263	0.00500	"	0.0333		78.8	40-140			
Indeno (1,2,3-cd) pyrene	0.0236	0.00500	"	0.0333		70.9	40-140			
Pyrene	0.0264	0.00500	"	0.0333		79.3	40-140			
1-Methylnaphthalene	0.0168	0.00500	"	0.0333		50.3	40-140			
2-Methylnaphthalene	0.0170	0.00500	"	0.0333		51.1	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0159		"	0.0333		47.8	40-140			
Surrogate: Fluoranthene-d10	0.0273		"	0.0333		81.8	40-140			

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BIA0563 - EPA 5030 Soil MS

Matrix Spike (BIA0563-MS1)		Source: 2501048-03			Prepared: 01/14/25 Analyzed: 01/17/25					
Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.2	40-140			
Anthracene	0.0234	0.00500	"	0.0333	ND	70.2	40-140			
Benzo (a) anthracene	0.0242	0.00500	"	0.0333	ND	72.7	40-140			
Benzo (a) pyrene	0.0241	0.00500	"	0.0333	0.00657	52.6	40-140			
Benzo (b) fluoranthene	0.0254	0.00500	"	0.0333	0.00954	47.7	40-140			
Benzo (k) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.6	40-140			
Chrysene	0.0253	0.00500	"	0.0333	0.00510	60.6	40-140			
Dibenz (a,h) anthracene	0.0276	0.00500	"	0.0333	ND	82.8	40-140			
Fluoranthene	0.0295	0.00500	"	0.0333	0.0105	56.9	40-140			
Fluorene	0.0232	0.00500	"	0.0333	ND	69.6	40-140			
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	0.0101	26.2	40-140			QM-05
Pyrene	0.0280	0.00500	"	0.0333	0.00864	58.1	40-140			
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.0	40-140			
2-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.4	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0199		"	0.0333		59.6	40-140			
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.6	40-140			

Matrix Spike Dup (BIA0563-MSD1)		Source: 2501048-03			Prepared: 01/14/25 Analyzed: 01/17/25					
Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	69.0	40-140	4.02	30	
Anthracene	0.0233	0.00500	"	0.0333	ND	69.9	40-140	0.327	30	
Benzo (a) anthracene	0.0250	0.00500	"	0.0333	ND	75.1	40-140	3.20	30	
Benzo (a) pyrene	0.0233	0.00500	"	0.0333	0.00657	50.2	40-140	3.33	30	
Benzo (b) fluoranthene	0.0282	0.00500	"	0.0333	0.00954	56.1	40-140	10.5	30	
Benzo (k) fluoranthene	0.0237	0.00500	"	0.0333	ND	71.1	40-140	3.64	30	
Chrysene	0.0258	0.00500	"	0.0333	0.00510	62.2	40-140	2.09	30	
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333	ND	77.0	40-140	7.21	30	
Fluoranthene	0.0322	0.00500	"	0.0333	0.0105	65.1	40-140	8.84	30	
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	40-140	0.572	30	
Indeno (1,2,3-cd) pyrene	0.0180	0.00500	"	0.0333	0.0101	23.6	40-140	4.75	30	QM-05
Pyrene	0.0306	0.00500	"	0.0333	0.00864	66.0	40-140	9.02	30	
1-Methylnaphthalene	0.0231	0.00500	"	0.0333	ND	69.2	40-140	11.0	30	
2-Methylnaphthalene	0.0250	0.00500	"	0.0333	ND	74.9	40-140	4.70	30	
Surrogate: 2-Methylnaphthalene-d10	0.0212		"	0.0333		63.7	40-140			
Surrogate: Fluoranthene-d10	0.0222		"	0.0333		66.7	40-140			

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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: Mike Medina

Reported:
01/21/25 11:59

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

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

Batch BIA0401 - EPA 3050B

Blank (BIA0401-BLK1)

Prepared & Analyzed: 01/10/25

Boron ND 2.00 mg/L

LCS (BIA0401-BS1)

Prepared & Analyzed: 01/10/25

Boron 4.77 2.00 mg/L 5.00 95.4 80-120

Duplicate (BIA0401-DUP1)

Source: 2501083-01

Prepared & Analyzed: 01/10/25

Boron 1.15 2.00 mg/L 1.13 1.58 20

Matrix Spike (BIA0401-MS1)

Source: 2501083-01

Prepared & Analyzed: 01/10/25

Boron 4.96 2.00 mg/L 5.00 1.13 76.6 75-125

Matrix Spike Dup (BIA0401-MSD1)

Source: 2501083-01

Prepared & Analyzed: 01/10/25

Boron 5.27 2.00 mg/L 5.00 1.13 82.8 75-125 6.07 25

Batch BIA0402 - EPA 3050B

Blank (BIA0402-BLK1)

Prepared & Analyzed: 01/10/25

Boron ND 2.00 mg/L

LCS (BIA0402-BS1)

Prepared & Analyzed: 01/10/25

Boron 4.92 2.00 mg/L 5.00 98.4 80-120

Duplicate (BIA0402-DUP1)

Source: 2411521-41

Prepared & Analyzed: 01/10/25

Boron 0.832 2.00 mg/L 0.802 3.66 20

Matrix Spike (BIA0402-MS1)

Source: 2411521-41

Prepared & Analyzed: 01/10/25

Boron 5.43 2.00 mg/L 5.00 0.802 92.5 75-125

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

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

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

Batch BIA0402 - EPA 3050B

Matrix Spike Dup (BIA0402-MSD1)

Source: 2411521-41

Prepared & Analyzed: 01/10/25

Boron	5.56	2.00	mg/L	5.00	0.802	95.2	75-125	2.46	25	
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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: Mike Medina

Reported:
01/21/25 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0417 - EPA 3050B

Blank (BIA0417-BLK1)

Prepared & Analyzed: 01/10/25

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 (BIA0417-BS1)

Prepared & Analyzed: 01/10/25

Arsenic	40.5	0.200	mg/kg wet	41.7	97.2	80-120
Barium	40.5	0.400	"	41.7	97.2	80-120
Cadmium	2.05	0.200	"	2.08	98.4	80-120
Copper	42.2	0.400	"	41.7	101	80-120
Lead	20.1	0.200	"	20.8	96.3	80-120
Nickel	41.8	0.400	"	41.7	100	80-120
Silver	2.09	0.0200	"	2.08	100	80-120
Zinc	42.9	0.400	"	41.7	103	80-120
Selenium	4.40	0.260	"	4.17	106	80-120

Duplicate (BIA0417-DUP1)

Source: 2501083-01

Prepared & Analyzed: 01/10/25

Arsenic	4.94	0.200	mg/kg dry	2.94	51.0	20	QR-04
Barium	59.6	0.400	"	65.6	9.61	20	
Cadmium	0.212	0.200	"	0.221	4.55	20	
Copper	5.26	0.400	"	5.13	2.56	20	
Lead	6.19	0.200	"	8.15	27.2	20	QR-04
Nickel	3.55	0.400	"	4.30	19.2	20	
Silver	0.0866	0.0200	"	0.0918	5.81	20	
Zinc	18.4	0.400	"	19.4	5.63	20	
Selenium	ND	0.260	"	ND		20	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0417 - EPA 3050B

Matrix Spike (BIA0417-MS1)		Source: 2501083-01			Prepared & Analyzed: 01/10/25					
Arsenic	48.3	0.200	mg/kg dry	48.2	2.94	94.0	75-125			
Barium	95.1	0.400	"	48.2	65.6	61.3	75-125			QM-05
Cadmium	2.51	0.200	"	2.41	0.221	94.9	75-125			
Copper	44.0	0.400	"	48.2	5.13	80.6	75-125			
Lead	27.5	0.200	"	24.1	8.15	80.2	75-125			
Nickel	42.3	0.400	"	48.2	4.30	78.9	75-125			
Silver	2.43	0.0200	"	2.41	0.0918	96.9	75-125			
Zinc	59.9	0.400	"	48.2	19.4	84.0	75-125			
Selenium	5.03	0.260	"	4.82	ND	104	75-125			

Matrix Spike Dup (BIA0417-MSD1)		Source: 2501083-01			Prepared & Analyzed: 01/10/25					
Arsenic	50.1	0.200	mg/kg dry	49.0	2.94	96.3	75-125	3.77	25	
Barium	107	0.400	"	49.0	65.6	84.7	75-125	11.8	25	
Cadmium	2.59	0.200	"	2.45	0.221	96.7	75-125	3.24	25	
Copper	41.6	0.400	"	49.0	5.13	74.4	75-125	5.63	25	QM-05
Lead	29.0	0.200	"	24.5	8.15	84.9	75-125	5.21	25	
Nickel	41.7	0.400	"	49.0	4.30	76.2	75-125	1.64	25	
Silver	2.44	0.0200	"	2.45	0.0918	95.6	75-125	0.333	25	
Zinc	56.8	0.400	"	49.0	19.4	76.2	75-125	5.37	25	
Selenium	4.81	0.260	"	4.90	ND	98.2	75-125	4.45	25	

Batch BIA0419 - EPA 3050B

Blank (BIA0419-BLK1)		Prepared & Analyzed: 01/10/25								
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	"							

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0419 - EPA 3050B

LCS (BIA0419-BS1)

Prepared & Analyzed: 01/10/25

Arsenic	37.0	0.200	mg/kg wet	40.0		92.5	80-120
Barium	38.7	0.400	"	40.0		96.6	80-120
Cadmium	1.91	0.200	"	2.00		95.7	80-120
Copper	38.9	0.400	"	40.0		97.3	80-120
Lead	19.1	0.200	"	20.0		95.5	80-120
Nickel	38.6	0.400	"	40.0		96.4	80-120
Silver	1.98	0.0200	"	2.00		98.8	80-120
Zinc	38.6	0.400	"	40.0		96.5	80-120
Selenium	3.90	0.260	"	4.00		97.5	80-120

Duplicate (BIA0419-DUP1)

Source: 2501061-01

Prepared & Analyzed: 01/10/25

Arsenic	1.19	0.200	mg/kg dry		1.68		34.1	20	QR-01
Barium	41.4	0.400	"		56.8		31.4	20	QR-04
Cadmium	0.0871	0.200	"		0.117		28.9	20	QR-01
Copper	2.87	0.400	"		3.60		22.3	20	QR-01
Lead	2.01	0.200	"		2.91		36.7	20	QR-04
Nickel	2.23	0.400	"		2.86		25.0	20	QR-01
Silver	0.0660	0.0200	"		0.0723		9.07	20	
Zinc	8.61	0.400	"		11.1		24.8	20	QR-04
Selenium	ND	0.260	"		ND			20	

Matrix Spike (BIA0419-MS1)

Source: 2501061-01

Prepared & Analyzed: 01/10/25

Arsenic	40.9	0.200	mg/kg dry	41.9	1.68	93.6	75-125	
Barium	83.6	0.400	"	41.9	56.8	63.8	75-125	QM-05
Cadmium	2.15	0.200	"	2.09	0.117	96.9	75-125	
Copper	38.6	0.400	"	41.9	3.60	83.5	75-125	
Lead	23.1	0.200	"	20.9	2.91	96.5	75-125	
Nickel	37.7	0.400	"	41.9	2.86	83.1	75-125	
Silver	2.11	0.0200	"	2.09	0.0723	97.1	75-125	
Zinc	45.8	0.400	"	41.9	11.1	83.0	75-125	
Selenium	4.34	0.260	"	4.19	ND	104	75-125	

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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: Mike Medina

Reported:
01/21/25 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BIA0419 - EPA 3050B

Matrix Spike Dup (BIA0419-MSD1)		Source: 2501061-01			Prepared & Analyzed: 01/10/25					
Arsenic	42.0	0.200	mg/kg dry	44.3	1.68	91.0	75-125	2.64	25	
Barium	80.7	0.400	"	44.3	56.8	53.9	75-125	3.47	25	QM-05
Cadmium	2.20	0.200	"	2.21	0.117	94.0	75-125	2.40	25	
Copper	40.2	0.400	"	44.3	3.60	82.6	75-125	4.05	25	
Lead	23.1	0.200	"	22.1	2.91	91.2	75-125	0.117	25	
Nickel	39.3	0.400	"	44.3	2.86	82.2	75-125	4.16	25	
Silver	2.14	0.0200	"	2.21	0.0723	93.6	75-125	1.79	25	
Zinc	46.8	0.400	"	44.3	11.1	80.7	75-125	2.06	25	
Selenium	4.35	0.260	"	4.43	ND	98.3	75-125	0.360	25	

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BIA0398 - 3060A Mod

Blank (BIA0398-BLK1)					Prepared & Analyzed: 01/10/25					
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BIA0398-BS1)					Prepared & Analyzed: 01/10/25					
Chromium, Hexavalent	25.4	0.30	mg/kg wet	24.8		103	80-120			
Duplicate (BIA0398-DUP1)					Source: 2501085-02 Prepared & Analyzed: 01/10/25					
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BIA0398-MS1)					Source: 2501085-02 Prepared & Analyzed: 01/10/25					
Chromium, Hexavalent	29.2	0.30	mg/kg dry	27.4	ND	106	75-125			
Matrix Spike Dup (BIA0398-MSD1)					Source: 2501085-02 Prepared & Analyzed: 01/10/25					
Chromium, Hexavalent	27.2	0.30	mg/kg dry	27.2	ND	100	75-125	6.96	20	

Batch BIA0813 - 3060A Mod

Blank (BIA0813-BLK1)					Prepared & Analyzed: 01/17/25					
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BIA0813-BS1)					Prepared & Analyzed: 01/17/25					
Chromium, Hexavalent	26.1	0.30	mg/kg wet	26.0		100	80-120			
Duplicate (BIA0813-DUP1)					Source: 2501085-01 Prepared & Analyzed: 01/17/25					
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BIA0813-MS1)					Source: 2501085-01 Prepared & Analyzed: 01/17/25					
Chromium, Hexavalent	26.1	0.30	mg/kg dry	29.0	ND	90.2	75-125			

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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BIA0813 - 3060A Mod

Matrix Spike Dup (BIA0813-MSD1)

Source: 2501085-01

Prepared & Analyzed: 01/17/25

Chromium, Hexavalent	26.8	0.30	mg/kg dry	29.0	ND	92.6	75-125	2.63	20
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Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

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

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

Batch BIA0383 - General Preparation

Blank (BIA0383-BLK1)

Prepared: 01/09/25 Analyzed: 01/10/25

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

LCS (BIA0383-BS1)

Prepared: 01/09/25 Analyzed: 01/10/25

Calcium	5.44	0.0500	mg/L wet	5.00	109	70-130
Magnesium	5.12	0.0500	"	5.00	102	70-130
Sodium	5.22	0.0500	"	5.00	104	70-130

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN

Project Manager: Mike Medina

Reported:
01/21/25 11:59

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

Summit Scientific

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

Batch BIA0400 - General Preparation

Duplicate (BIA0400-DUP1)

Source: 2501083-01

Prepared: 01/10/25 Analyzed: 01/13/25

% Solids	84.6	%		85.0		0.501	20
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Broomfield CO, 80020

Project: Noble - Bruntz G16-23 Flowline
Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BIA0388 - General Preparation

Blank (BIA0388-BLK1)

Prepared: 01/09/25 Analyzed: 01/10/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BIA0388-BS1)

Prepared: 01/09/25 Analyzed: 01/10/25

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BIA0388-DUP1)

Source: 2501083-01

Prepared: 01/09/25 Analyzed: 01/10/25

Specific Conductance (EC) 5.09 0.0100 mmhos/cm 5.15 1.23 20

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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN

Project Manager: Mike Medina

Reported:
01/21/25 11:59

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

Summit Scientific

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

Batch BIA0387 - General Preparation

LCS (BIA0387-BS1)

Prepared: 01/09/25 Analyzed: 01/10/25

pH	9.13	pH Units	9.18	99.5	95-105
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Duplicate (BIA0387-DUP1)

Source: 2501083-01

Prepared: 01/09/25 Analyzed: 01/10/25

pH	7.87	pH Units	7.86	0.127	20
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Project: Noble - Bruntz G16-23 Flowline

Project Number: UWRWE-A3660-ABN
Project Manager: Mike Medina

Reported:
01/21/25 11:59

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
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