

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 25, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Brown 44-24 Tank Battery

Work Order #2407179

Enclosed are the results of analyses for samples received by Summit Scientific on 07/15/24 18:27. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2407179-01	Soil	07/15/24 09:17	07/15/24 18:27
PWVW01-S@2'	2407179-02	Soil	07/15/24 11:28	07/15/24 18:27
PWVW01-B@4'	2407179-03	Soil	07/15/24 11:30	07/15/24 18:27
SEP01-DL@2'	2407179-04	Soil	07/15/24 10:51	07/15/24 18:27
SEP01-FL@2'	2407179-05	Soil	07/15/24 10:53	07/15/24 18:27
BKG01@0-6"	2407179-06	Soil	07/15/24 11:22	07/15/24 18:27
BKG01@2'	2407179-07	Soil	07/15/24 11:23	07/15/24 18:27
BKG01@4'	2407179-08	Soil	07/15/24 11:24	07/15/24 18:27

Summit Scientific

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<b>Send Data To:</b>		<b>Send Invoice To:</b>	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: <u>Crewton</u>	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <u>Brown 44.24 Tank Battery</u>	
City/State/Zip: Broomfield/CO/ 80020		AFE#: <u>UWRWE-A2785-ABN</u>	
Phone: <u>978-857-4408</u>	Project Name: <u>Brown 44.24 Tank Battery</u>	PO/Billing Codes:	
Sampler Name: <del>Elizabeth Brauer</del> <sup>mw</sup> <u>Matthew Wenzel</u>	Project Number:	Contact: <u>Miguel Barron</u>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH		Boron - HWS	HOLD	
1	AST01@0-6"	7-15-24	0917	3			X			X				X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	PWV01.S@2'		1128											X	X	X	X	X	X		
3	PWV01.B@4'		1130											X	X	X	X	X	X		
4	SEPO1.DL@2'		1051											X	X	X	X	X	X		
5	SEPO1.FL@2'		1053											X	X	X	X	X	X		
6	BKGO1@0-6"		1122											X	X	X	X	X	X		
7	BKGO1@2'		1123											X	X	X	X	X	X		
8	BKGO1@4'		1124											X	X	X	X	X	X		
9	PWV01.N@2'		1126																	X	
10	PWV01.E@2'		1127																	X	
11	PWV01.W@2'		1129																	X	
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7-15-24 1415</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>7-15-24 1415</u>	TAT Business Days	Field DO	<b>Notes:</b>
				Same Day	Field EC	
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>7-15-24 1827</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7-15-24 1827</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb. <input checked="" type="checkbox"/>	
Temperature Upon Receipt: <u>8.9</u>	Corrected Temperature: <u>8</u>	IR gun #:	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2407179

Client: Nodel Tasmann Client Project ID: Brown 44-24 Tank Battery

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> 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"/>	<u>no ice</u>
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? 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)? <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

1/13/24  
Date/Time



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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**AST01@0-6"**  
**2407179-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0428	07/16/24	07/17/24	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: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0417	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.6 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0430	07/16/24	07/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.10	56.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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07/25/24 13:09

**AST01@0-6"**  
**2407179-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0410	07/16/24	07/17/24	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: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0255	76.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.2 %	40-150		"	"	"	"	

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**AST01@0-6"**  
**2407179-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.37	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	22.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.59	0.400	"	"	"	"	"	"	
Lead	2.40	0.200	"	"	"	"	"	"	
Nickel	2.39	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.61	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	65.8	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	4.02	0.0500	"	"	"	"	"	"	
Sodium	15.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.489	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

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**Reported:**  
07/25/24 13:09

**AST01@0-6"**  
**2407179-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	97.1			%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.148	0.0100		mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 09:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.99			pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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Project Number: UWRWE-A2785-ABN  
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**Reported:**  
07/25/24 13:09

**PWVW01-S@2'**  
**2407179-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0428	07/16/24	07/17/24	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: **07/15/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0438	109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	105 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>140</b>	50		mg/kg	1	BHG0430	07/16/24	07/18/24	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>110</b>	50		"	"	"	"	"	"	

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.27	58.2 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-S@2'**  
**2407179-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0410	07/16/24	07/17/24	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	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0116</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0145</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0287</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0331	99.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0168	50.3 %	40-150		"	"	"	"	

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

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-S@2'**  
**2407179-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.63	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	30.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.51	0.400	"	"	"	"	"	"	
Lead	4.96	0.200	"	"	"	"	"	"	
Nickel	2.72	0.400	"	"	"	"	"	"	
Silver	0.0422	0.0200	"	"	"	"	"	"	
Zinc	15.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 07/15/24 11:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: 07/15/24 11:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	78.2	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	3.65	0.0500	"	"	"	"	"	"	
Sodium	14.5	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 07/15/24 11:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.435	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-S@2'**  
**2407179-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.163	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-B@4'**  
**2407179-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHG0428	07/16/24	07/17/24	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.3</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0430	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0430	07/16/24	07/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.11	56.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-B@4'**  
**2407179-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0410	07/16/24	07/17/24	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	"	"	"	"	"	"	"
<b>Fluoranthene</b>	<b>0.00646</b>	0.00500	"	"	"	"	"	"	"
Fluorene	ND	0.00500	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	"
<b>Pyrene</b>	<b>0.00912</b>	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0303	91.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.6 %	40-150		"	"	"	"	

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 11:30**

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 - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-B@4'**  
**2407179-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.15	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	57.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.89	0.400	"	"	"	"	"	"	
Lead	6.02	0.200	"	"	"	"	"	"	
Nickel	3.66	0.400	"	"	"	"	"	"	
Silver	0.0390	0.0200	"	"	"	"	"	"	
Zinc	16.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	256	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	3.42	0.0500	"	"	"	"	"	"	
Sodium	27.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.473	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**PWVW01-B@4'**  
**2407179-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.168	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.33		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-DL@2'**  
**2407179-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHG0428	07/16/24	07/17/24	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: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0450	112 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0430	07/16/24	07/18/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.52	60.1 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-DL@2'**  
**2407179-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0410	07/16/24	07/17/24	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: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0235	70.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.6 %	40-150		"	"	"	"	

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

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 10:51**

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 - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-DL@2'**  
**2407179-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.14	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	75.5	0.400	"	"	"	"	"	"	
Cadmium	0.473	0.200	"	"	"	"	"	"	
Copper	8.81	0.400	"	"	"	"	"	"	
Lead	12.6	0.200	"	"	"	"	"	"	
Nickel	4.47	0.400	"	"	"	"	"	"	
Silver	0.180	0.0200	"	"	"	"	"	"	
Zinc	29.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	180	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	4.05	0.0500	"	"	"	"	"	"	
Sodium	21.0	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.423	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

Date Sampled: **07/15/24 10:51**

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-DL@2'**  
**2407179-04 (Soil)**

**Summit Scientific**

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

% Solids	85.6	%	1	BHG0418	07/16/24	07/16/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.150</b>	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>6.93</b>		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-FL@2'**  
**2407179-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHG0428	07/16/24	07/17/24	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: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	99.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0430	07/16/24	07/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.0	88.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-FL@2'**  
**2407179-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0410	07/16/24	07/17/24	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: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0235	70.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.2 %	40-150		"	"	"	"	

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

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 10:53**

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 - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-FL@2'**  
**2407179-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.81	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B
Barium	63.7	0.400	"	"	"	"	"	"
Cadmium	0.507	0.200	"	"	"	"	"	"
Copper	8.27	0.400	"	"	"	"	"	"
Lead	13.9	0.200	"	"	"	"	"	"
Nickel	4.21	0.400	"	"	"	"	"	"
Silver	0.200	0.0200	"	"	"	"	"	"
Zinc	29.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	222	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	4.64	0.0500	"	"	"	"	"	"	
Sodium	22.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.402	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

Date Sampled: **07/15/24 10:53**

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 - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**SEP01-FL@2'**  
**2407179-05 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>88.1</b>	%	1	BHG0418	07/16/24	07/16/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.135</b>	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.96</b>		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@0-6"**  
**2407179-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>4.11</b>	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	<b>90.6</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.591</b>	0.200	"	"	"	"	"	"	
Copper	<b>11.4</b>	0.400	"	"	"	"	"	"	
Lead	<b>21.1</b>	0.200	"	"	"	"	"	"	
Nickel	<b>5.11</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.338</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>38.9</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>47.3</b>	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	<b>8.03</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>65.5</b>	0.0500	"	"	"	"	"	"	

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@0-6''**  
**2407179-06 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.32	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.758	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.87		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@2'**  
**2407179-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>4.01</b>	0.200	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	<b>126</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.296</b>	0.200	"	"	"	"	"	"	
Copper	<b>5.40</b>	0.400	"	"	"	"	"	"	
Lead	<b>11.3</b>	0.200	"	"	"	"	"	"	
Nickel	<b>5.33</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.0874</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>24.2</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>21.6</b>	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	<b>3.41</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>27.0</b>	0.0500	"	"	"	"	"	"	

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@2'**  
**2407179-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.42	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.8		%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.313	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@4'**  
**2407179-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHG0417	07/16/24	07/17/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.76	0.181	mg/kg dry	1	BHG0422	07/16/24	07/18/24	EPA 6020B	
Barium	83.9	0.362	"	"	"	"	"	"	
Cadmium	0.188	0.181	"	"	"	"	"	"	
Copper	3.96	0.362	"	"	"	"	"	"	
Lead	7.00	0.181	"	"	"	"	"	"	
Nickel	4.48	0.362	"	"	"	"	"	"	
Silver	0.0385	0.0181	"	"	"	"	"	"	
Zinc	17.6	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0420	07/16/24	07/16/24	EPA 7196A	

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

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	32.1	0.0500	mg/L dry	1	BHG0423	07/16/24	07/17/24	EPA 6020B	
Magnesium	7.80	0.0500	"	"	"	"	"	"	
Sodium	81.1	0.0500	"	"	"	"	"	"	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**BKG01@4'**  
**2407179-08 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.33	0.00100	units	1	BHG0491	07/18/24	07/18/24	Calculation	

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

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BHG0418	07/16/24	07/16/24	Calculation	

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

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.709	0.0100	mmhos/cm	1	BHG0433	07/16/24	07/17/24	EPA 120.1	

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

Date Sampled: **07/15/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BHG0432	07/16/24	07/17/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

### 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 BHG0428 - EPA 5030 Soil MS

##### Blank (BHG0428-BLK1)

Prepared: 07/16/24 Analyzed: 07/17/24

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0388		"	0.0400		96.9	50-150				
<i>Surrogate: Toluene-d8</i>	0.0405		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0397		"	0.0400		99.2	50-150				

##### LCS (BHG0428-BS1)

Prepared: 07/16/24 Analyzed: 07/17/24

Benzene	0.149	0.0020	mg/kg	0.150		99.4	70-130				
Toluene	0.145	0.0050	"	0.150		96.9	70-130				
Ethylbenzene	0.150	0.0050	"	0.150		100	70-130				
m,p-Xylene	0.299	0.010	"	0.300		99.7	70-130				
o-Xylene	0.144	0.0050	"	0.150		95.8	70-130				
1,2,4-Trimethylbenzene	0.137	0.0050	"	0.150		91.3	70-130				
1,3,5-Trimethylbenzene	0.136	0.0050	"	0.150		90.7	70-130				
Naphthalene	0.136	0.0038	"	0.150		90.5	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0409		"	0.0400		102	50-150				
<i>Surrogate: Toluene-d8</i>	0.0412		"	0.0400		103	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0409		"	0.0400		102	50-150				

##### Matrix Spike (BHG0428-MS1)

Source: 2407133-01

Prepared: 07/16/24 Analyzed: 07/17/24

Benzene	0.111	0.0020	mg/kg	0.150	ND	74.0	70-130				
Toluene	0.0924	0.0050	"	0.150	ND	61.6	70-130				QM-05
Ethylbenzene	0.0603	0.0050	"	0.150	ND	40.2	70-130				QM-05
m,p-Xylene	0.119	0.010	"	0.300	ND	39.8	70-130				QM-05
o-Xylene	0.0953	0.0050	"	0.150	ND	63.5	70-130				QM-05
1,2,4-Trimethylbenzene	0.0273	0.0050	"	0.150	ND	18.2	70-130				QM-05
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.150	ND	68.5	70-130				QM-05
Naphthalene	0.0397	0.0038	"	0.150	ND	26.5	70-130				QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0396		"	0.0400		98.9	50-150				
<i>Surrogate: Toluene-d8</i>	0.0401		"	0.0400		100	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0417		"	0.0400		104	50-150				

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0428 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHG0428-MSD1)</b>	<b>Source: 2407133-01</b>			<b>Prepared: 07/16/24 Analyzed: 07/17/24</b>						
Benzene	0.112	0.0020	mg/kg	0.150	ND	75.0	70-130	1.37	30	
Toluene	0.0974	0.0050	"	0.150	ND	64.9	70-130	5.22	30	QM-05
Ethylbenzene	0.0612	0.0050	"	0.150	ND	40.8	70-130	1.48	30	QM-05
m,p-Xylene	0.131	0.010	"	0.300	ND	43.7	70-130	9.31	30	QM-05
o-Xylene	0.0988	0.0050	"	0.150	ND	65.8	70-130	3.56	30	QM-05
1,2,4-Trimethylbenzene	0.0316	0.0050	"	0.150	ND	21.0	70-130	14.6	30	QM-05
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.150	ND	66.3	70-130	3.26	30	QM-05
Naphthalene	0.0373	0.0038	"	0.150	ND	24.8	70-130	6.39	30	QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0430 - EPA 3550A**

**Blank (BHG0430-BLK1)**

Prepared & Analyzed: 07/16/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.4		"	12.5		91.6	30-150				

**LCS (BHG0430-BS1)**

Prepared & Analyzed: 07/16/24

C10-C28 (DRO)	449	50	mg/kg	500		89.8	70-130				
Surrogate: <i>o</i> -Terphenyl	11.2		"	12.5		89.5	30-150				

**Matrix Spike (BHG0430-MS1)**

Source: 2407156-01

Prepared: 07/16/24 Analyzed: 07/17/24

C10-C28 (DRO)	1430	50	mg/kg	500	1140	56.8	70-130				QM-02
Surrogate: <i>o</i> -Terphenyl	10.2		"	12.5		81.3	30-150				

**Matrix Spike Dup (BHG0430-MSD1)**

Source: 2407156-01

Prepared: 07/16/24 Analyzed: 07/17/24

C10-C28 (DRO)	1190	50	mg/kg	500	1140	10.3	70-130	17.7	20		QM-02
Surrogate: <i>o</i> -Terphenyl	10.5		"	12.5		84.4	30-150				

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0410 - EPA 5030 Soil MS**

**Blank (BHG0410-BLK1)**

Prepared & Analyzed: 07/16/24

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0420</i>		<i>"</i>	<i>0.0333</i>		<i>126</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0310</i>		<i>"</i>	<i>0.0333</i>		<i>93.0</i>		<i>40-150</i>		

**LCS (BHG0410-BS1)**

Prepared & Analyzed: 07/16/24

Acenaphthene	0.0236	0.00500	mg/kg	0.0333		70.7		31-137		
Anthracene	0.0237	0.00500	"	0.0333		71.0		30-120		
Benzo (a) anthracene	0.0241	0.00500	"	0.0333		72.2		30-120		
Benzo (a) pyrene	0.0214	0.00500	"	0.0333		64.1		30-120		
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333		65.1		30-120		
Benzo (k) fluoranthene	0.0221	0.00500	"	0.0333		66.2		30-120		
Chrysene	0.0234	0.00500	"	0.0333		70.3		30-120		
Dibenz (a,h) anthracene	0.0219	0.00500	"	0.0333		65.7		30-120		
Fluoranthene	0.0236	0.00500	"	0.0333		70.9		30-120		
Fluorene	0.0235	0.00500	"	0.0333		70.5		30-120		
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333		42.6		30-120		
Pyrene	0.0279	0.00500	"	0.0333		83.6		35-142		
1-Methylnaphthalene	0.0324	0.00500	"	0.0333		97.2		35-142		
2-Methylnaphthalene	0.0294	0.00500	"	0.0333		88.1		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0302</i>		<i>"</i>	<i>0.0333</i>		<i>90.6</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0249</i>		<i>"</i>	<i>0.0333</i>		<i>74.7</i>		<i>40-150</i>		

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0410 - EPA 5030 Soil MS**

<b>Matrix Spike (BHG0410-MS1)</b>	<b>Source: 2407158-01</b>			<b>Prepared &amp; Analyzed: 07/16/24</b>						
Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.5	31-137			
Anthracene	0.0226	0.00500	"	0.0333	ND	67.8	30-120			
Benzo (a) anthracene	0.0244	0.00500	"	0.0333	ND	73.2	30-120			
Benzo (a) pyrene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Benzo (b) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.7	30-120			
Benzo (k) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.5	30-120			
Chrysene	0.0238	0.00500	"	0.0333	ND	71.5	30-120			
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120			
Fluoranthene	0.0228	0.00500	"	0.0333	ND	68.3	30-120			
Fluorene	0.0242	0.00500	"	0.0333	ND	72.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0301	0.00500	"	0.0333	ND	90.2	30-120			
Pyrene	0.0284	0.00500	"	0.0333	ND	85.2	35-142			
1-Methylnaphthalene	0.0330	0.00500	"	0.0333	ND	99.1	15-130			
2-Methylnaphthalene	0.0304	0.00500	"	0.0333	ND	91.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0328</i>		<i>"</i>	<i>0.0333</i>		<i>98.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0246</i>		<i>"</i>	<i>0.0333</i>		<i>73.8</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BHG0410-MSD1)</b>	<b>Source: 2407158-01</b>			<b>Prepared &amp; Analyzed: 07/16/24</b>						
Acenaphthene	0.0243	0.00500	mg/kg	0.0333	ND	72.8	31-137	0.365	30	
Anthracene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	1.48	30	
Benzo (a) anthracene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	3.77	30	
Benzo (a) pyrene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	3.52	30	
Benzo (b) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	3.44	30	
Benzo (k) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120	4.71	30	
Chrysene	0.0229	0.00500	"	0.0333	ND	68.8	30-120	3.87	30	
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	7.71	30	
Fluoranthene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	1.85	30	
Fluorene	0.0235	0.00500	"	0.0333	ND	70.4	30-120	3.03	30	
Indeno (1,2,3-cd) pyrene	0.0293	0.00500	"	0.0333	ND	88.0	30-120	2.45	30	
Pyrene	0.0261	0.00500	"	0.0333	ND	78.3	35-142	8.42	30	
1-Methylnaphthalene	0.0319	0.00500	"	0.0333	ND	95.8	15-130	3.37	50	
2-Methylnaphthalene	0.0297	0.00500	"	0.0333	ND	89.1	15-130	2.26	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0309</i>		<i>"</i>	<i>0.0333</i>		<i>92.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0240</i>		<i>"</i>	<i>0.0333</i>		<i>72.0</i>	<i>40-150</i>			

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

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

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

**Batch BHG0417 - EPA 3050B**

<b>Blank (BHG0417-BLK1)</b>				Prepared: 07/16/24 Analyzed: 07/17/24							
Boron	ND	2.00	mg/L								
<b>LCS (BHG0417-BS1)</b>				Prepared: 07/16/24 Analyzed: 07/17/24							
Boron	5.10	2.00	mg/L	5.00	102	80-120					
<b>Duplicate (BHG0417-DUP1)</b>				<b>Source: 2407179-01</b>		Prepared: 07/16/24 Analyzed: 07/17/24					
Boron	0.151	2.00	mg/L		0.178			16.1	20		
<b>Matrix Spike (BHG0417-MS1)</b>				<b>Source: 2407179-01</b>		Prepared: 07/16/24 Analyzed: 07/17/24					
Boron	5.25	2.00	mg/L	5.04	0.178	101	75-125				
<b>Matrix Spike Dup (BHG0417-MSD1)</b>				<b>Source: 2407179-01</b>		Prepared: 07/16/24 Analyzed: 07/17/24					
Boron	5.65	2.00	mg/L	5.04	0.178	109	75-125	7.31	25		

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

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

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

**Batch BHG0422 - EPA 3050B**

**Blank (BHG0422-BLK1)**

Prepared: 07/16/24 Analyzed: 07/18/24

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 (BHG0422-BS1)**

Prepared: 07/16/24 Analyzed: 07/18/24

Arsenic	35.9	0.200	mg/kg wet	37.9	94.9	80-120
Barium	36.4	0.400	"	37.9	96.2	80-120
Cadmium	1.75	0.200	"	1.89	92.3	80-120
Copper	39.0	0.400	"	37.9	103	80-120
Lead	18.1	0.200	"	18.9	95.8	80-120
Nickel	39.0	0.400	"	37.9	103	80-120
Silver	1.77	0.0200	"	1.89	93.7	80-120
Zinc	37.7	0.400	"	37.9	99.4	80-120
Selenium	3.55	0.260	"	3.79	93.8	80-120

**Duplicate (BHG0422-DUP1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/18/24

Arsenic	2.60	0.200	mg/kg dry	1.37	61.8	20	QR-02
Barium	24.4	0.400	"	22.2	9.58	20	
Cadmium	0.0923	0.200	"	0.0721	24.5	20	QR-01
Copper	3.22	0.400	"	2.59	21.6	20	QR-01
Lead	2.98	0.200	"	2.40	21.5	20	QR-02
Nickel	3.21	0.400	"	2.39	29.3	20	QR-01
Silver	0.00990	0.0200	"	0.0105	6.25	20	
Zinc	10.3	0.400	"	8.61	17.5	20	
Selenium	ND	0.260	"	ND		20	

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0422 - EPA 3050B**

**Matrix Spike (BHG0422-MS1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/18/24

Arsenic	38.7	0.200	mg/kg dry	40.2	1.37	92.8	75-125			
Barium	56.3	0.400	"	40.2	22.2	84.9	75-125			
Cadmium	1.96	0.200	"	2.01	0.0721	93.9	75-125			
Copper	34.0	0.400	"	40.2	2.59	78.1	75-125			
Lead	21.3	0.200	"	20.1	2.40	93.8	75-125			
Nickel	33.8	0.400	"	40.2	2.39	78.2	75-125			
Silver	1.85	0.0200	"	2.01	0.0105	91.5	75-125			
Zinc	39.4	0.400	"	40.2	8.61	76.7	75-125			
Selenium	3.49	0.260	"	4.02	ND	86.9	75-125			

**Matrix Spike Dup (BHG0422-MSD1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/18/24

Arsenic	37.8	0.200	mg/kg dry	38.4	1.37	94.7	75-125	2.46	25	
Barium	54.4	0.400	"	38.4	22.2	83.8	75-125	3.55	25	
Cadmium	1.90	0.200	"	1.92	0.0721	95.3	75-125	3.01	25	
Copper	31.5	0.400	"	38.4	2.59	75.3	75-125	7.65	25	
Lead	21.4	0.200	"	19.2	2.40	98.7	75-125	0.433	25	
Nickel	31.2	0.400	"	38.4	2.39	75.0	75-125	8.06	25	
Silver	1.80	0.0200	"	1.92	0.0105	93.3	75-125	2.60	25	
Zinc	36.9	0.400	"	38.4	8.61	73.7	75-125	6.63	25	QM-07
Selenium	3.39	0.260	"	3.84	ND	88.3	75-125	2.96	25	

**Post Spike (BHG0422-PS1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/18/24

Arsenic	102		ug/l	100	3.34	98.9	75-125			
Barium	152		"	100	53.8	97.9	75-125			
Cadmium	5.06		"	5.00	0.175	97.6	75-125			
Copper	90.4		"	100	6.29	84.1	75-125			
Lead	55.8		"	50.0	5.83	99.9	75-125			
Nickel	90.0		"	100	5.80	84.2	75-125			
Silver	5.00		"	5.00	0.0256	99.5	75-125			
Zinc	104		"	100	20.9	82.6	75-125			
Selenium	9.35		"	10.0	0.157	91.9	75-125			

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

Project: Noble - Brown 44-24 Tank Battery  
Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BHG0420 - 3060A Mod**

**Blank (BHG0420-BLK1)**

Prepared & Analyzed: 07/16/24

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BHG0420-BS1)**

Prepared & Analyzed: 07/16/24

Chromium, Hexavalent      24.8      0.30 mg/kg wet      25.0      99.4      80-120

**Duplicate (BHG0420-DUP1)**

**Source: 2407165-01**

Prepared & Analyzed: 07/16/24

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BHG0420-MS1)**

**Source: 2407165-01**

Prepared & Analyzed: 07/16/24

Chromium, Hexavalent      28.4      0.30 mg/kg dry      29.6      ND      95.8      75-125

**Matrix Spike Dup (BHG0420-MSD1)**

**Source: 2407165-01**

Prepared & Analyzed: 07/16/24

Chromium, Hexavalent      29.1      0.30 mg/kg dry      29.6      ND      98.4      75-125      2.68      20

Summit Scientific

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0423 - General Preparation**

**Blank (BHG0423-BLK1)**

Prepared: 07/16/24 Analyzed: 07/17/24

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

**LCS (BHG0423-BS1)**

Prepared: 07/16/24 Analyzed: 07/17/24

Calcium	5.63	0.0500	mg/L wet	5.00	113	70-130
Magnesium	5.02	0.0500	"	5.00	100	70-130
Sodium	4.80	0.0500	"	5.00	95.9	70-130

Summit Scientific

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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 07/25/24 13:09

**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 BHG0418 - General Preparation**

**Duplicate (BHG0418-DUP1)**

**Source: 2407176-01**

Prepared & Analyzed: 07/16/24

% Solids	91.6		%		93.0			1.59	20	
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/25/24 13:09

**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 BHG0433 - General Preparation**

**Blank (BHG0433-BLK1)**

Prepared: 07/16/24 Analyzed: 07/17/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHG0433-BS1)**

Prepared: 07/16/24 Analyzed: 07/17/24

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 102 95-105

**Duplicate (BHG0433-DUP1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/17/24

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.148 0.680 20

Summit Scientific

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



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

Project: Noble - Brown 44-24 Tank Battery

Project Number: UWRWE-A2785-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 07/25/24 13:09

**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 BHG0432 - General Preparation**

**LCS (BHG0432-BS1)**

Prepared: 07/16/24 Analyzed: 07/17/24

pH	9.15		pH Units	9.18		99.7	95-105			
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**Duplicate (BHG0432-DUP1)**

Source: 2407179-01

Prepared: 07/16/24 Analyzed: 07/17/24

pH	8.92		pH Units	8.99			0.782	20		
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Summit Scientific

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07/25/24 13:09

### Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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-02 The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- 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