

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 27, 2024

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - Five Rivers K09-21D  
Work Order #2408292

Enclosed are the results of analyses for samples received by Summit Scientific on 08/23/24 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury  
President



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

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06-FL01-M@3'	2408292-01	Soil	08/23/24 09:39	08/23/24 17:40
SS05-FL01-M@3'	2408292-02	Soil	08/23/24 10:48	08/23/24 17:40
SS07-FL01-M@3'	2408292-03	Soil	08/23/24 10:51	08/23/24 17:40

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*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.*



S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2408292

Client: Nodel Tamman Client Project ID: Free Rivers K09-21D

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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 2CE
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sameday
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

8/23/24  
Date/Time



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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS06-FL01-M@3'**  
**2408292-01 (Soil)**

Summit Scientific

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0745	08/23/24	08/23/24	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: **08/23/24 09:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.4 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0746	"	08/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.30	50.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: [none]  
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08/27/24 13:26

**SS06-FL01-M@3'**  
**2408292-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0747	08/26/24	08/27/24	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: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.9 %	40-150		"	"	"	"	

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0759	08/26/24	08/26/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS06-FL01-M@3'**  
**2408292-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.880	0.200	mg/kg dry	1	BHH0755	08/26/24	08/26/24	EPA 6020B
Barium	31.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.25	0.400	"	"	"	"	"	"
Lead	5.44	0.200	"	"	"	"	"	"
Nickel	2.48	0.400	"	"	"	"	"	"
Silver	0.0323	0.0200	"	"	"	"	"	"
Zinc	20.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0760	08/26/24	08/26/24	EPA 7196A	

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	11.6	0.0500	mg/L dry	1	BHH0742	08/23/24	08/26/24	EPA 6020B	
Magnesium	53.0	0.0500	"	"	"	"	"	"	
Sodium	62.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.72	0.00100	units	1	BHH0812	08/27/24	08/27/24	Calculation	

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

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
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08/27/24 13:26

**SS06-FL01-M@3'**  
**2408292-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3		%	1	BHH0753	08/26/24	08/26/24	Calculation	

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.348	0.0100	mmhos/cm	1	BHH0744	08/23/24	08/26/24	EPA 120.1	

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

Date Sampled: **08/23/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.10		pH Units	1	BHH0743	08/23/24	08/26/24	EPA 9045D	

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS05-FL01-M@3'**  
**2408292-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0745	08/23/24	08/23/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.010</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.13</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.070</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.055</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.3</b>	0.50	"	"	"	"	"	"	

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0406	101 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0400	100 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0397	99.3 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0746	"	08/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	7.14	57.1 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS05-FL01-M@3'**  
**2408292-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0747	08/26/24	08/27/24	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: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0220	66.1 %	40-150		"	"	"	"	

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

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0759	08/26/24	08/26/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS05-FL01-M@3'**  
**2408292-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.84	0.181	mg/kg dry	1	BHH0755	08/26/24	08/26/24	EPA 6020B	
Barium	75.0	0.362	"	"	"	"	"	"	
Cadmium	0.392	0.181	"	"	"	"	"	"	
Copper	10.6	0.362	"	"	"	"	"	"	
Lead	15.8	0.181	"	"	"	"	"	"	
Nickel	5.01	0.362	"	"	"	"	"	"	
Silver	0.0860	0.0181	"	"	"	"	"	"	
Zinc	55.3	0.362	"	"	"	"	"	"	
Selenium	0.433	0.236	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0760	08/26/24	08/26/24	EPA 7196A	

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

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.22	0.0500	mg/L dry	1	BHH0742	08/23/24	08/26/24	EPA 6020B	
Magnesium	3.60	0.0500	"	"	"	"	"	"	
Sodium	8.47	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.620	0.00100	units	1	BHH0812	08/27/24	08/27/24	Calculation	

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

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS05-FL01-M@3'**  
**2408292-02 (Soil)**

**Summit Scientific**

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

% Solids	85.5	%	1	BHH0753	08/26/24	08/26/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.102	0.0100	mmhos/cm	1	BHH0744	08/23/24	08/26/24	EPA 120.1	

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

Date Sampled: **08/23/24 10:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.97		pH Units	1	BHH0743	08/23/24	08/26/24	EPA 9045D	

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS07-FL01-M@3'**  
**2408292-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHH0745	08/23/24	08/23/24	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: **08/23/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0746	"	08/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.58	68.6 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS07-FL01-M@3'**  
**2408292-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0747	08/26/24	08/27/24	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: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0162	48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0759	08/26/24	08/26/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/23/24 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 - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS07-FL01-M@3'**  
**2408292-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.22	0.200	mg/kg dry	1	BHH0755	08/26/24	08/26/24	EPA 6020B	
Barium	53.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.84	0.400	"	"	"	"	"	"	
Lead	5.06	0.200	"	"	"	"	"	"	
Nickel	5.20	0.400	"	"	"	"	"	"	
Silver	0.0219	0.0200	"	"	"	"	"	"	
Zinc	18.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0760	08/26/24	08/26/24	EPA 7196A	

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.5	0.0500	mg/L dry	1	BHH0742	08/23/24	08/26/24	EPA 6020B	
Magnesium	11.6	0.0500	"	"	"	"	"	"	
Sodium	28.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BHH0812	08/27/24	08/27/24	Calculation	

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

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**SS07-FL01-M@3'**  
**2408292-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BHH0753	08/26/24	08/26/24	Calculation	

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.412	0.0100	mmhos/cm	1	BHH0744	08/23/24	08/26/24	EPA 120.1	

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

Date Sampled: **08/23/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BHH0743	08/23/24	08/26/24	EPA 9045D	

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

### 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 BHH0745 - EPA 5030 Soil MS

##### Blank (BHH0745-BLK1)

Prepared & Analyzed: 08/23/24

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>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.7</i>	<i>50-150</i>				

##### LCS (BHH0745-BS1)

Prepared & Analyzed: 08/23/24

Benzene	0.103	0.0020	mg/kg	0.100		103	70-130				
Toluene	0.103	0.0050	"	0.100		103	70-130				
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130				
m,p-Xylene	0.208	0.010	"	0.200		104	70-130				
o-Xylene	0.103	0.0050	"	0.100		103	70-130				
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130				
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130				
Naphthalene	0.0975	0.0038	"	0.100		97.5	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0436</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.3</i>	<i>50-150</i>				

##### Matrix Spike (BHH0745-MS1)

Source: 2408292-01

Prepared & Analyzed: 08/23/24

Benzene	0.0918	0.0020	mg/kg	0.100	ND	91.8	70-130				
Toluene	0.0911	0.0050	"	0.100	ND	91.1	70-130				
Ethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130				
m,p-Xylene	0.186	0.010	"	0.200	ND	93.2	70-130				
o-Xylene	0.0889	0.0050	"	0.100	ND	88.9	70-130				
1,2,4-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130				
1,3,5-Trimethylbenzene	0.0858	0.0050	"	0.100	ND	85.8	70-130				
Naphthalene	0.0743	0.0038	"	0.100	ND	74.3	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.2</i>	<i>50-150</i>				

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0745 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHH0745-MSD1)</b>	<b>Source: 2408292-01</b>			<b>Prepared &amp; Analyzed: 08/23/24</b>						
Benzene	0.0959	0.0020	mg/kg	0.100	ND	95.9	70-130	4.41	30	
Toluene	0.0944	0.0050	"	0.100	ND	94.4	70-130	3.56	30	
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	8.32	30	
m,p-Xylene	0.200	0.010	"	0.200	ND	99.9	70-130	7.02	30	
o-Xylene	0.0944	0.0050	"	0.100	ND	94.4	70-130	5.99	30	
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.100	ND	89.2	70-130	2.69	30	
1,3,5-Trimethylbenzene	0.0920	0.0050	"	0.100	ND	92.0	70-130	7.02	30	
Naphthalene	0.0737	0.0038	"	0.100	ND	73.7	70-130	0.810	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>97.9</i>	<i>50-150</i>			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0746 - EPA 3550A**

**Blank (BHH0746-BLK1)**

Prepared & Analyzed: 08/23/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.5	30-150				

**LCS (BHH0746-BS1)**

Prepared & Analyzed: 08/23/24

C10-C28 (DRO)	435	50	mg/kg	500		87.0	70-130				
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.6	30-150				

**Matrix Spike (BHH0746-MS1)**

Source: 2408292-01

Prepared & Analyzed: 08/23/24

C10-C28 (DRO)	455	50	mg/kg	500	ND	91.0	70-130				
Surrogate: <i>o</i> -Terphenyl	8.58		"	12.5		68.6	30-150				

**Matrix Spike Dup (BHH0746-MSD1)**

Source: 2408292-01

Prepared & Analyzed: 08/23/24

C10-C28 (DRO)	409	50	mg/kg	500	ND	81.8	70-130	10.6	20		
Surrogate: <i>o</i> -Terphenyl	6.90		"	12.5		55.2	30-150				

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0747 - EPA 5030 Soil MS**

**Blank (BHH0747-BLK1)**

Prepared & Analyzed: 08/26/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0180		"	0.0333	54.0	40-150				
Surrogate: Fluoranthene-d10	0.0286		"	0.0333	85.8	40-150				

**LCS (BHH0747-BS1)**

Prepared & Analyzed: 08/26/24

Acenaphthene	0.0249	0.00500	mg/kg	0.0333	74.6	31-137				
Anthracene	0.0286	0.00500	"	0.0333	85.9	30-120				
Benzo (a) anthracene	0.0326	0.00500	"	0.0333	97.8	30-120				
Benzo (a) pyrene	0.0294	0.00500	"	0.0333	88.3	30-120				
Benzo (b) fluoranthene	0.0291	0.00500	"	0.0333	87.2	30-120				
Benzo (k) fluoranthene	0.0294	0.00500	"	0.0333	88.3	30-120				
Chrysene	0.0306	0.00500	"	0.0333	91.8	30-120				
Dibenz (a,h) anthracene	0.0335	0.00500	"	0.0333	100	30-120				
Fluoranthene	0.0307	0.00500	"	0.0333	92.1	30-120				
Fluorene	0.0284	0.00500	"	0.0333	85.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0216	0.00500	"	0.0333	64.7	30-120				
Pyrene	0.0317	0.00500	"	0.0333	95.2	35-142				
1-Methylnaphthalene	0.0183	0.00500	"	0.0333	55.0	35-142				
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	50.4	35-142				
Surrogate: 2-Methylnaphthalene-d10	0.0176		"	0.0333	52.8	40-150				
Surrogate: Fluoranthene-d10	0.0309		"	0.0333	92.7	40-150				

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

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0747 - EPA 5030 Soil MS**

<b>Matrix Spike (BHH0747-MS1)</b>	<b>Source: 2408278-01</b>			<b>Prepared &amp; Analyzed: 08/26/24</b>						
Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.8	31-137			
Anthracene	0.0218	0.00500	"	0.0333	ND	65.5	30-120			
Benzo (a) anthracene	0.0239	0.00500	"	0.0333	ND	71.7	30-120			
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.6	30-120			
Benzo (b) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.0	30-120			
Benzo (k) fluoranthene	0.0206	0.00500	"	0.0333	ND	61.8	30-120			
Chrysene	0.0229	0.00500	"	0.0333	ND	68.7	30-120			
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120			
Fluoranthene	0.0230	0.00500	"	0.0333	ND	69.0	30-120			
Fluorene	0.0226	0.00500	"	0.0333	ND	67.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0180	0.00500	"	0.0333	ND	54.0	30-120			
Pyrene	0.0234	0.00500	"	0.0333	ND	70.3	35-142			
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.2	15-130			
2-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.6	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0333</i>		<i>54.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0236</i>		<i>"</i>	<i>0.0333</i>		<i>70.8</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BHH0747-MSD1)</b>	<b>Source: 2408278-01</b>			<b>Prepared &amp; Analyzed: 08/26/24</b>						
Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	64.0	31-137	8.55	30	
Anthracene	0.0235	0.00500	"	0.0333	ND	70.6	30-120	7.52	30	
Benzo (a) anthracene	0.0264	0.00500	"	0.0333	ND	79.1	30-120	9.81	30	
Benzo (a) pyrene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	12.8	30	
Benzo (b) fluoranthene	0.0235	0.00500	"	0.0333	ND	70.6	30-120	13.0	30	
Benzo (k) fluoranthene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	13.8	30	
Chrysene	0.0252	0.00500	"	0.0333	ND	75.6	30-120	9.60	30	
Dibenz (a,h) anthracene	0.0238	0.00500	"	0.0333	ND	71.3	30-120	18.7	30	
Fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120	8.20	30	
Fluorene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	2.57	30	
Indeno (1,2,3-cd) pyrene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	20.3	30	
Pyrene	0.0257	0.00500	"	0.0333	ND	77.0	35-142	9.12	30	
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.2	15-130	13.6	50	
2-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	57.9	15-130	13.6	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0208</i>		<i>"</i>	<i>0.0333</i>		<i>62.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0252</i>		<i>"</i>	<i>0.0333</i>		<i>75.5</i>	<i>40-150</i>			

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

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0759 - EPA 3050B**

**Blank (BHH0759-BLK1)**

Prepared & Analyzed: 08/26/24

Boron ND 2.00 mg/L

**LCS (BHH0759-BS1)**

Prepared & Analyzed: 08/26/24

Boron 4.60 2.00 mg/L 5.00 92.1 80-120

**Duplicate (BHH0759-DUP1)**

Source: 2408265-01

Prepared & Analyzed: 08/26/24

Boron ND 2.00 mg/L ND 20

**Matrix Spike (BHH0759-MS1)**

Source: 2408265-01

Prepared & Analyzed: 08/26/24

Boron 4.65 2.00 mg/L 5.00 ND 93.1 75-125

**Matrix Spike Dup (BHH0759-MSD1)**

Source: 2408265-01

Prepared & Analyzed: 08/26/24

Boron 4.73 2.00 mg/L 5.00 ND 94.6 75-125 1.63 25

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

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

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

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

**Batch BHH0755 - EPA 3050B**

**Blank (BHH0755-BLK1)**

Prepared & Analyzed: 08/26/24

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 (BHH0755-BS1)**

Prepared & Analyzed: 08/26/24

Arsenic	38.6	0.200	mg/kg wet	37.3	104	80-120
Barium	39.1	0.400	"	37.3	105	80-120
Cadmium	1.81	0.200	"	1.87	96.9	80-120
Copper	38.2	0.400	"	37.3	102	80-120
Lead	18.8	0.200	"	18.7	101	80-120
Nickel	38.4	0.400	"	37.3	103	80-120
Silver	2.05	0.0200	"	1.87	110	80-120
Zinc	37.2	0.400	"	37.3	99.6	80-120
Selenium	3.77	0.260	"	3.73	101	80-120

**Duplicate (BHH0755-DUP1)**

Source: 2408273-01

Prepared & Analyzed: 08/26/24

Arsenic	0.869	0.200	mg/kg dry	1.22	33.9	20	QR-01
Barium	22.4	0.400	"	27.7	21.3	20	QR-02
Cadmium	0.115	0.200	"	0.153	27.9	20	QR-01
Copper	2.39	0.400	"	3.19	28.8	20	QR-01
Lead	3.77	0.200	"	4.98	27.6	20	QR-02
Nickel	2.05	0.400	"	2.52	20.3	20	QR-01
Silver	0.00851	0.0200	"	0.0116	31.2	20	QR-01
Zinc	16.5	0.400	"	14.0	16.7	20	
Selenium	ND	0.260	"	ND		20	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0755 - EPA 3050B**

**Matrix Spike (BHH0755-MS1)**

Source: 2408273-01

Prepared & Analyzed: 08/26/24

Arsenic	39.2	0.200	mg/kg dry	39.0	1.22	97.5	75-125			
Barium	64.7	0.400	"	39.0	27.7	95.1	75-125			
Cadmium	1.94	0.200	"	1.95	0.153	91.8	75-125			
Copper	40.0	0.400	"	39.0	3.19	94.6	75-125			
Lead	23.2	0.200	"	19.5	4.98	93.8	75-125			
Nickel	40.2	0.400	"	39.0	2.52	96.8	75-125			
Silver	1.81	0.0200	"	1.95	0.0116	92.2	75-125			
Zinc	51.0	0.400	"	39.0	14.0	95.1	75-125			
Selenium	3.42	0.260	"	3.90	ND	87.9	75-125			

**Matrix Spike Dup (BHH0755-MSD1)**

Source: 2408273-01

Prepared & Analyzed: 08/26/24

Arsenic	38.1	0.200	mg/kg dry	40.8	1.22	90.4	75-125	2.77	25
Barium	65.9	0.400	"	40.8	27.7	93.7	75-125	1.79	25
Cadmium	1.95	0.200	"	2.04	0.153	88.3	75-125	0.664	25
Copper	39.4	0.400	"	40.8	3.19	88.9	75-125	1.49	25
Lead	22.5	0.200	"	20.4	4.98	86.1	75-125	3.06	25
Nickel	39.7	0.400	"	40.8	2.52	91.1	75-125	1.32	25
Silver	1.77	0.0200	"	2.04	0.0116	86.0	75-125	2.28	25
Zinc	51.0	0.400	"	40.8	14.0	90.9	75-125	0.0850	25
Selenium	3.39	0.260	"	4.08	ND	83.0	75-125	1.03	25

Summit Scientific

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

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

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

**Batch BHH0760 - 3060A Mod**

**Blank (BHH0760-BLK1)**

Prepared & Analyzed: 08/26/24

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BHH0760-BS1)**

Prepared & Analyzed: 08/26/24

Chromium, Hexavalent      5.25      0.30 mg/kg wet      5.00      105      80-120

**Duplicate (BHH0760-DUP1)**

**Source: 2408251-01**

Prepared & Analyzed: 08/26/24

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BHH0760-MS1)**

**Source: 2408251-01**

Prepared & Analyzed: 08/26/24

Chromium, Hexavalent      5.76      0.30 mg/kg dry      5.88      ND      98.0      75-125

**Matrix Spike Dup (BHH0760-MSD1)**

**Source: 2408251-01**

Prepared & Analyzed: 08/26/24

Chromium, Hexavalent      5.88      0.30 mg/kg dry      5.88      ND      100      75-125      2.02      20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

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

**Summit Scientific**

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

**Batch BHH0742 - General Preparation**

**Blank (BHH0742-BLK1)**

Prepared: 08/23/24 Analyzed: 08/26/24

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

**LCS (BHH0742-BS1)**

Prepared: 08/23/24 Analyzed: 08/26/24

Calcium	4.64	0.0500	mg/L wet	5.00		92.8	70-130			
Magnesium	5.33	0.0500	"	5.00		107	70-130			
Sodium	5.17	0.0500	"	5.00		103	70-130			

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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
 Project Manager: Jacob Whritenour

**Reported:**  
 08/27/24 13:26

**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 BHH0753 - General Preparation**

**Duplicate (BHH0753-DUP1)**

**Source: 2408270-01**

Prepared & Analyzed: 08/26/24

% Solids	83.5		%		85.6			2.50	20	
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6855 W. 119th Ave.  
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Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0744 - General Preparation**

**Blank (BHH0744-BLK1)**

Prepared: 08/23/24 Analyzed: 08/26/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHH0744-BS1)**

Prepared: 08/23/24 Analyzed: 08/26/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

**Duplicate (BHH0744-DUP1)**

Source: 2408250-01

Prepared: 08/23/24 Analyzed: 08/26/24

Specific Conductance (EC) 0.360 0.0100 mmhos/cm 0.367 1.81 20

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

**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 BHH0743 - General Preparation**

**LCS (BHH0743-BS1)**

Prepared: 08/23/24 Analyzed: 08/26/24

pH	9.04	pH Units	9.18	98.5	95-105
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**Duplicate (BHH0743-DUP1)**

Source: 2408250-01

Prepared: 08/23/24 Analyzed: 08/26/24

pH	8.51	pH Units	8.58	0.819	20
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Summit Scientific

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

Project: Noble - Five Rivers K09-21D

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
08/27/24 13:26

### 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 below the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- 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