

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 10, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

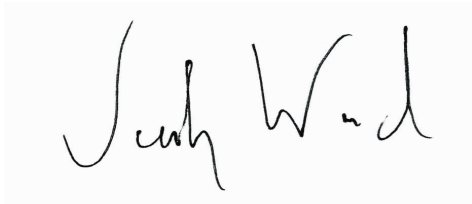
Broomfield, CO 80020

RE: Noble - Gutterson State CC20-04

Work Order #2409031

Enclosed are the results of analyses for samples received by Summit Scientific on 09/04/24 17:37. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial 'J' and 'W'.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01-FL01-01@3'	2409031-01	Soil	09/04/24 11:30	09/04/24 17:37
SS01-FL01-01@2'	2409031-02	Soil	09/04/24 11:35	09/04/24 17:37
SS02-FL01-01@2'	2409031-03	Soil	09/04/24 11:40	09/04/24 17:37
SS03-FL01-01@2'	2409031-04	Soil	09/04/24 11:45	09/04/24 17:37
SS04-FL01-01@2'	2409031-05	Soil	09/04/24 11:50	09/04/24 17:37
FS01-FL01-06@3'	2409031-06	Soil	09/04/24 10:30	09/04/24 17:37
SS01-FL01-06@2'	2409031-07	Soil	09/04/24 10:35	09/04/24 17:37
SS02-FL01-06@2'	2409031-08	Soil	09/04/24 10:40	09/04/24 17:37
SS03-FL01-06@2'	2409031-09	Soil	09/04/24 10:45	09/04/24 17:37
SS04-FL01-06@2'	2409031-10	Soil	09/04/24 10:50	09/04/24 17:37
FS01-FL01-07@3'	2409031-11	Soil	09/04/24 09:45	09/04/24 17:37
SS01-FL01-07@2'	2409031-12	Soil	09/04/24 09:50	09/04/24 17:37
SS02-FL01-07@2'	2409031-13	Soil	09/04/24 09:55	09/04/24 17:37
SS03-FL01-07@2'	2409031-14	Soil	09/04/24 10:00	09/04/24 17:37
SS04-FL01-07@2'	2409031-15	Soil	09/04/24 10:05	09/04/24 17:37
BKG01@2'	2409031-16	Soil	09/04/24 12:00	09/04/24 17:37
BKG02@2'	2409031-17	Soil	09/04/24 12:10	09/04/24 17:37
BKG03@2'	2409031-18	Soil	09/04/24 12:20	09/04/24 17:37
BKG04@2'	2409031-19	Soil	09/04/24 12:30	09/04/24 17:37
BKG05@2'	2409031-20	Soil	09/04/24 12:40	09/04/24 17:37

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.

		Send Data To:	Send Invoice To:
Client: Noble/Tasman		Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <i>Guttersen State CC20-04</i>
City/State/Zip: Broomfield/CO/ 80020			AFE#:
Phone: (317) 445-0601		Project Name: <i>Guttersen State CC20-04</i>	PO/Billing Codes:
Sampler Name: Luke Moran		Project Number:	Contact: Dan Peterson

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	FS01-FL01-01@3'	9/4/24	1130	3			3				X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	SS01-FL01-01@2'		1135																		
3	SS02-FL01-01@2'		1140																		
4	SS03-FL01-01@2'		1145																		
5	SS04-FL01-01@2'		1150																		
6	FS01-FL01-06@3'		1030																		
7	SS01-FL01-06@2'		1035																		
8	SS02-FL01-06@2'		1040																		
9	SS03-FL01-06@2'		1045																		
10	SS04-FL01-06@2'		1050																		
11	FS01-FL01-07@3'		0945																		
12	SS01-FL01-07@2'		0950																		
13	SS02-FL01-07@2'		0955																		
14	SS03-FL01-07@2'		1000																		
15	SS04-FL01-07@2'		1005																		

Relinquished by: <i>Luke Moran</i>	Date/Time: 9/4/24 1700	Received by: Tasman Lock Box	Date/Time: 9/4/24 1700	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 9/4/24 1737	Received by: <i>[Signature]</i>	Date/Time: 9/4/24 1737	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 4.0	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

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

Lab ID	Page 2 of 2
2409031.2	

Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <i>Butterson State CC20-04</i>
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: (317) 445-0601	Project Name: <i>Butterson State CC20-04</i>	PO/Billing Codes:
Sampler Name: Luke Moran	Project Number:	Contact: Dan Peterson

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	BK601 @ 2'	9/4/24	1200	1			1			X						X							SAR, EC, pH by saturated paste
2	BK602 @ 2'		1210																				
3	BK603 @ 2'		1220																				
4	BK604 @ 2'		1230																				
5	BK605 @ 2'		1240																				
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: <i>Luke Moran</i>	Date/Time: 9/4/24	Received by: Tasman Lock Box	Date/Time: 9/4/24	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 9/24/24	Received by: <i>[Signature]</i>	Date/Time: 9/24/24	1 Day	Field ORP	
	Date/Time: 1/3/25		Date/Time: 1/3/25	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 9.0	Corrected Temperature: <i>8</i>	IR gun #:		HNO3 lot #:		

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2409031

Client: Noble Tisman Client Project ID: Guthersen State CC20-04

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVZCE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS
Custodian Printed Name

9/4/24
Date/Time



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

Project: Noble - Gutttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-01@3'
2409031-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHI0085	09/04/24	09/04/24	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: **09/04/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0414	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.7	85.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
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Reported:
09/10/24 10:55

FS01-FL01-01@3'
2409031-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0142	42.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0146	43.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 11:30**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-01@3'
2409031-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.51	0.200	mg/kg dry	1	BHI0104	09/05/24	09/06/24	EPA 6020B	
Barium	49.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.81	0.400	"	"	"	"	"	"	
Lead	4.38	0.200	"	"	"	"	"	"	
Nickel	3.14	0.400	"	"	"	"	"	"	
Silver	0.0286	0.0200	"	"	"	"	"	"	
Zinc	13.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	441	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	76.7	0.0500	"	"	"	"	"	"	
Sodium	15.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.180	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: UWRWE-A3676-ABN
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Reported:
09/10/24 10:55

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2409031-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.635	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.12		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-01@2'
2409031-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/04/24	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: **09/04/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0393	98.3 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.0	88.0 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-01@2'
2409031-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00983	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	EPA 8270D SIM	
Anthracene	0.0330	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0921	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0623	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0933	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0328	0.00500	"	"	"	"	"	"	
Chrysene	0.0893	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0128	0.00500	"	"	"	"	"	"	
Fluoranthene	0.190	0.00500	"	"	"	"	"	"	
Fluorene	0.0111	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0658	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0138	41.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.66	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-01@2'
2409031-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	46.8	0.400	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.07	0.400	"	"	"	"	"	"	
Lead	4.11	0.200	"	"	"	"	"	"	
Nickel	3.92	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	102	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	16.2	0.0500	"	"	"	"	"	"	
Sodium	7.81	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.190	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 11:35**

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

Project: Noble - Guttarsen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-01@2'
2409031-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	93.8	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.452	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-01@2'
2409031-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/04/24	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: **09/04/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0382	95.6 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.0	88.2 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-01@2'
2409031-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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	0.00572	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: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0162	48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-01@2'
2409031-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.36	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	47.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.82	0.400	"	"	"	"	"	"	
Lead	4.06	0.200	"	"	"	"	"	"	
Nickel	3.93	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	228	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	37.1	0.0500	"	"	"	"	"	"	
Sodium	4.80	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0777	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-01@2'
2409031-03 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.115	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.19		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-01@2'
2409031-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/04/24	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: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0414	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.96	79.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-01@2'
2409031-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0160	48.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 11:45**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-01@2'
2409031-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.79	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	55.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.47	0.400	"	"	"	"	"	"	
Lead	4.86	0.200	"	"	"	"	"	"	
Nickel	5.03	0.400	"	"	"	"	"	"	
Silver	0.0212	0.0200	"	"	"	"	"	"	
Zinc	20.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	246	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	44.6	0.0500	"	"	"	"	"	"	
Sodium	7.76	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.120	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-01@2'
2409031-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.107	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.43		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-01@2'
2409031-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/04/24	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: **09/04/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0414	103 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	10.1	80.4 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-01@2'
2409031-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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	0.00793	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00636	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 11:50**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-01@2'
2409031-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.48	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B
Barium	121	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.03	0.400	"	"	"	"	"	"
Lead	5.37	0.200	"	"	"	"	"	"
Nickel	4.07	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	16.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.0	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	7.91	0.0500	"	"	"	"	"	"	
Sodium	12.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.478	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-01@2'
2409031-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.324	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.87		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-06@3'
2409031-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0409	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.9	87.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-06@3'
2409031-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:30**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-06@3'
2409031-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	38.0	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B	
Barium	38.5	0.400	"	"	"	"	"	"	
Cadmium	1.92	0.200	"	"	"	"	"	"	
Copper	39.5	0.400	"	"	"	"	"	"	
Lead	18.9	0.200	"	"	"	"	"	"	
Nickel	39.3	0.400	"	"	"	"	"	"	
Silver	1.94	0.0200	"	"	"	"	"	"	
Zinc	42.6	0.400	"	"	"	"	"	"	
Selenium	3.86	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	279	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	62.7	0.0500	"	"	"	"	"	"	
Sodium	7.50	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.106	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:30**

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 - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-06@3'
2409031-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	96.6	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.204	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.43		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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

Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-06@2'
2409031-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0368	91.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.8	94.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-06@2'
2409031-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0158	47.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:35**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-06@2'
2409031-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.85	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B
Barium	122	0.400	"	"	"	"	"	"
Cadmium	0.252	0.200	"	"	"	"	"	"
Copper	5.64	0.400	"	"	"	"	"	"
Lead	15.8	0.200	"	"	"	"	"	"
Nickel	4.49	0.400	"	"	"	"	"	"
Silver	0.0201	0.0200	"	"	"	"	"	"
Zinc	29.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	459	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	88.4	0.0500	"	"	"	"	"	"	
Sodium	13.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.153	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:35**

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 - Gutterson State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-06@2'
2409031-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	96.2	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:35**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.172	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.11		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-06@2'
2409031-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0370	92.6 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/04/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	12.2	97.9 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-06@2'
2409031-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0178	53.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:40**

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 - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-06@2'
2409031-08 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.84	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B
Barium	117	0.400	"	"	"	"	"	"
Cadmium	0.251	0.200	"	"	"	"	"	"
Copper	5.77	0.400	"	"	"	"	"	"
Lead	33.0	0.200	"	"	"	"	"	"
Nickel	4.50	0.400	"	"	"	"	"	"
Silver	0.0232	0.0200	"	"	"	"	"	"
Zinc	29.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	108	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	16.6	0.0500	"	"	"	"	"	"	
Sodium	14.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.341	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: Noble - Guttarsen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-06@2'
2409031-08 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	95.6	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.485	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.67		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: Noble - Guttarsen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-06@2'
2409031-09 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.3 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0418	105 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.4 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	10.9	87.4 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
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Reported:
09/10/24 10:55

SS03-FL01-06@2'
2409031-09 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0200	60.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:45**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-06@2'
2409031-09 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	36.8	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B
Barium	165	0.400	"	"	"	"	"	"
Cadmium	2.11	0.200	"	"	"	"	"	"
Copper	31.0	0.400	"	"	"	"	"	"
Lead	54.7	0.200	"	"	"	"	"	"
Nickel	28.7	0.400	"	"	"	"	"	"
Silver	1.83	0.0200	"	"	"	"	"	"
Zinc	79.2	0.400	"	"	"	"	"	"
Selenium	3.12	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	92.8	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	19.9	0.0500	"	"	"	"	"	"	
Sodium	3.11	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0764	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-06@2'
2409031-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	96.3	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:45**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0933	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-06@2'
2409031-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0376	94.0 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.5 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	10.4	83.5 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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09/10/24 10:55

SS04-FL01-06@2'
2409031-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	EPA 8270D SIM	
Anthracene	0.0139	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00955	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00544	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00959	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0114	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0214	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0176	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:50**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-06@2'
2409031-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	36.8	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B
Barium	152	0.400	"	"	"	"	"	"
Cadmium	2.10	0.200	"	"	"	"	"	"
Copper	31.6	0.400	"	"	"	"	"	"
Lead	49.1	0.200	"	"	"	"	"	"
Nickel	29.5	0.400	"	"	"	"	"	"
Silver	1.84	0.0200	"	"	"	"	"	"
Zinc	70.8	0.400	"	"	"	"	"	"
Selenium	3.21	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	513	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	66.8	0.0500	"	"	"	"	"	"	
Sodium	8.02	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0885	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:50**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-06@2'
2409031-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	96.4	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.327	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-07@3'
2409031-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0373	93.2 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.2	89.9 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-07@3'
2409031-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0169	50.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 09:45**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-07@3'
2409031-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	41.2	0.200	mg/kg dry	1	BHI0104	09/05/24	09/05/24	EPA 6020B	
Barium	161	0.400	"	"	"	"	"	"	
Cadmium	2.29	0.200	"	"	"	"	"	"	
Copper	34.2	0.400	"	"	"	"	"	"	
Lead	35.3	0.200	"	"	"	"	"	"	
Nickel	32.9	0.400	"	"	"	"	"	"	
Silver	2.03	0.0200	"	"	"	"	"	"	
Zinc	59.9	0.400	"	"	"	"	"	"	
Selenium	3.73	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.5	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	7.39	0.0500	"	"	"	"	"	"	
Sodium	17.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.684	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 09:45**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

FS01-FL01-07@3'
2409031-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.0	%	1	BHI0092	09/05/24	09/05/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.335	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-07@2'
2409031-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0424	106 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.9	95.1 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Gutterson State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-07@2'
2409031-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 09:50**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-07@2'
2409031-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.915	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	29.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.29	0.400	"	"	"	"	"	"	
Lead	3.10	0.200	"	"	"	"	"	"	
Nickel	2.15	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.26	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	177	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	23.1	0.0500	"	"	"	"	"	"	
Sodium	5.39	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.101	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS01-FL01-07@2'
2409031-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.0		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 09:50**

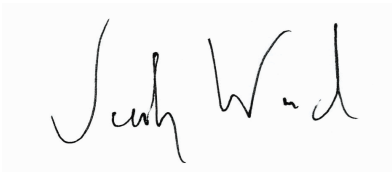
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0718	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.09		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Gutttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-07@2'
2409031-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0356	88.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.5	91.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-07@2'
2409031-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0167	50.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/05/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 09:55**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-07@2'
2409031-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.986	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	31.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.75	0.400	"	"	"	"	"	"	
Lead	3.43	0.200	"	"	"	"	"	"	
Nickel	2.35	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.8	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	13.9	0.0500	"	"	"	"	"	"	
Sodium	42.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.10	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS02-FL01-07@2'
2409031-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.5			%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.761	0.0100		mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.43			pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-07@2'
2409031-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.3	82.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-07@2'
2409031-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/05/24	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: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0176	52.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:00**

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-07@2'
2409031-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.914	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B
Barium	30.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.49	0.400	"	"	"	"	"	"
Lead	2.80	0.200	"	"	"	"	"	"
Nickel	2.35	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	9.65	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	68.0	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	10.3	0.0500	"	"	"	"	"	"	
Sodium	11.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.341	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS03-FL01-07@2'
2409031-14 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	97.3			%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.252	0.0100		mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.63			pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-07@2'
2409031-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0085	09/04/24	09/05/24	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: **09/04/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0359	89.7 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.4 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0087	09/04/24	09/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	10.6	85.1 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Broomfield CO, 80020

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Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-07@2'
2409031-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0093	09/05/24	09/06/24	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: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0139	41.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 10:05**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-07@2'
2409031-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.863	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	28.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.48	0.400	"	"	"	"	"	"	
Lead	2.73	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.48	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.9	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	11.6	0.0500	"	"	"	"	"	"	
Sodium	27.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.767	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

SS04-FL01-07@2'
2409031-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.0		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.562	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.55		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Gutttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG01@2'
2409031-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.17	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	33.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.48	0.400	"	"	"	"	"	"	
Lead	3.05	0.200	"	"	"	"	"	"	
Nickel	2.64	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	16.9	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	3.38	0.0500	"	"	"	"	"	"	
Sodium	0.848	0.0500	"	"	"	"	"	"	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG01@2'
2409031-16 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0493	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.6		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0514	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.66		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Gutttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG02@2'
2409031-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.13	0.179	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	36.5	0.357	"	"	"	"	"	"	
Cadmium	ND	0.179	"	"	"	"	"	"	
Copper	2.90	0.357	"	"	"	"	"	"	
Lead	3.28	0.179	"	"	"	"	"	"	
Nickel	3.01	0.357	"	"	"	"	"	"	
Silver	ND	0.0179	"	"	"	"	"	"	
Zinc	11.7	0.357	"	"	"	"	"	"	
Selenium	ND	0.232	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	30.6	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	5.54	0.0500	"	"	"	"	"	"	
Sodium	0.581	0.0500	"	"	"	"	"	"	

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Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG02@2'
2409031-17 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0254	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.5		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.342	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG03@2'
2409031-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.16	0.200	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	52.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.63	0.400	"	"	"	"	"	"	
Lead	5.06	0.200	"	"	"	"	"	"	
Nickel	5.42	0.400	"	"	"	"	"	"	
Silver	0.0257	0.0200	"	"	"	"	"	"	
Zinc	19.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	132	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	8.63	0.0500	"	"	"	"	"	"	
Sodium	0.969	0.0500	"	"	"	"	"	"	

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Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG03@2'
2409031-18 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0221	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.232	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG04@2'
2409031-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.43	0.181	mg/kg dry	1	BHI0104	09/05/24	09/10/24	EPA 6020B	
Barium	54.3	0.362	"	"	"	"	"	"	
Cadmium	ND	0.181	"	"	"	"	"	"	
Copper	4.73	0.362	"	"	"	"	"	"	
Lead	5.01	0.181	"	"	"	"	"	"	
Nickel	4.73	0.362	"	"	"	"	"	"	
Silver	ND	0.0181	"	"	"	"	"	"	
Zinc	18.3	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	130	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	20.2	0.0500	"	"	"	"	"	"	
Sodium	0.617	0.0500	"	"	"	"	"	"	

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Project: Noble - Guttarsen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG04@2'
2409031-19 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0133	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.5		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0586	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.69		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG05@2'
2409031-20 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHI0102	09/05/24	09/06/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.19	0.200	mg/kg dry	1	BHI0105	09/05/24	09/05/24	EPA 6020B	
Barium	32.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.17	0.400	"	"	"	"	"	"	
Lead	2.86	0.200	"	"	"	"	"	"	
Nickel	2.44	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.82	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0095	09/05/24	09/05/24	EPA 7196A	

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

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	72.7	0.0500	mg/L dry	1	BHI0079	09/04/24	09/05/24	EPA 6020B	
Magnesium	14.9	0.0500	"	"	"	"	"	"	
Sodium	0.916	0.0500	"	"	"	"	"	"	

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Project: Noble - Guttarsen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

BKG05@2'
2409031-20 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0256	0.00100	units	1	BHI0163	09/06/24	09/06/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.4		%	1	BHI0092	09/05/24	09/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0507	0.0100	mmhos/cm	1	BHI0081	09/04/24	09/05/24	EPA 120.1	

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

Date Sampled: **09/04/24 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.14		pH Units	1	BHI0083	09/04/24	09/05/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHI0085 - EPA 5030 Soil MS

Blank (BHI0085-BLK1)

Prepared: 09/04/24 Analyzed: 09/05/24

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>	0.0360		"	0.0400		89.9	50-150				
<i>Surrogate: Toluene-d8</i>	0.0401		"	0.0400		100	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0385		"	0.0400		96.3	50-150				

LCS (BHI0085-BS1)

Prepared: 09/04/24 Analyzed: 09/05/24

Benzene	0.0976	0.0020	mg/kg	0.100		97.6	70-130				
Toluene	0.0919	0.0050	"	0.100		91.9	70-130				
Ethylbenzene	0.100	0.0050	"	0.100		100	70-130				
m,p-Xylene	0.185	0.010	"	0.200		92.7	70-130				
o-Xylene	0.0860	0.0050	"	0.100		86.0	70-130				
1,2,4-Trimethylbenzene	0.0730	0.0050	"	0.100		73.0	70-130				
1,3,5-Trimethylbenzene	0.0837	0.0050	"	0.100		83.7	70-130				
Naphthalene	0.0838	0.0038	"	0.100		83.8	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0377		"	0.0400		94.4	50-150				
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0377		"	0.0400		94.2	50-150				

Matrix Spike (BHI0085-MS1)

Source: 2409031-01

Prepared: 09/04/24 Analyzed: 09/05/24

Benzene	0.0969	0.0020	mg/kg	0.100	ND	96.9	70-130				
Toluene	0.0905	0.0050	"	0.100	ND	90.5	70-130				
Ethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130				
m,p-Xylene	0.175	0.010	"	0.200	ND	87.3	70-130				
o-Xylene	0.0790	0.0050	"	0.100	ND	79.0	70-130				
1,2,4-Trimethylbenzene	0.0695	0.0050	"	0.100	ND	69.5	70-130				QM-05
1,3,5-Trimethylbenzene	0.0798	0.0050	"	0.100	ND	79.8	70-130				
Naphthalene	0.0788	0.0038	"	0.100	ND	78.8	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0376		"	0.0400		94.0	50-150				
<i>Surrogate: Toluene-d8</i>	0.0430		"	0.0400		107	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0376		"	0.0400		94.0	50-150				

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHI0085 - EPA 5030 Soil MS

Matrix Spike Dup (BHI0085-MSD1)	Source: 2409031-01			Prepared: 09/04/24 Analyzed: 09/05/24					
Benzene	0.0957	0.0020	mg/kg	0.100	ND	95.7	70-130	1.21	30
Toluene	0.0900	0.0050	"	0.100	ND	90.0	70-130	0.565	30
Ethylbenzene	0.0948	0.0050	"	0.100	ND	94.8	70-130	0.285	30
m,p-Xylene	0.177	0.010	"	0.200	ND	88.4	70-130	1.25	30
o-Xylene	0.0795	0.0050	"	0.100	ND	79.5	70-130	0.605	30
1,2,4-Trimethylbenzene	0.0714	0.0050	"	0.100	ND	71.4	70-130	2.72	30
1,3,5-Trimethylbenzene	0.0822	0.0050	"	0.100	ND	82.2	70-130	2.96	30
Naphthalene	0.0808	0.0038	"	0.100	ND	80.8	70-130	2.41	30
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	50-150		
Surrogate: Toluene-d8	0.0427		"	0.0400		107	50-150		
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	50-150		

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04
Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHI0087 - EPA 3550A

Blank (BHI0087-BLK1)

Prepared: 09/04/24 Analyzed: 09/05/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		105	30-150				

LCS (BHI0087-BS1)

Prepared: 09/04/24 Analyzed: 09/05/24

C10-C28 (DRO)	408	50	mg/kg	500		81.6	70-130				
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		96.2	30-150				

Matrix Spike (BHI0087-MS1)

Source: 2409031-01

Prepared: 09/04/24 Analyzed: 09/05/24

C10-C28 (DRO)	416	50	mg/kg	500	ND	83.3	70-130				
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5		99.9	30-150				

Matrix Spike Dup (BHI0087-MSD1)

Source: 2409031-01

Prepared: 09/04/24 Analyzed: 09/05/24

C10-C28 (DRO)	444	50	mg/kg	500	ND	88.7	70-130	6.33	20		
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5		99.4	30-150				

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHI0093 - EPA 5030 Soil MS

Blank (BHI0093-BLK1)

Prepared & Analyzed: 09/05/24

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>0.0193</i>		"	<i>0.0333</i>		<i>57.8</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0194</i>		"	<i>0.0333</i>		<i>58.2</i>		<i>40-150</i>			

LCS (BHI0093-BS1)

Prepared & Analyzed: 09/05/24

Acenaphthene	0.0176	0.00500	mg/kg	0.0333		52.9		31-137			
Anthracene	0.0187	0.00500	"	0.0333		56.0		30-120			
Benzo (a) anthracene	0.0203	0.00500	"	0.0333		60.8		30-120			
Benzo (a) pyrene	0.0183	0.00500	"	0.0333		54.9		30-120			
Benzo (b) fluoranthene	0.0190	0.00500	"	0.0333		56.9		30-120			
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333		53.1		30-120			
Chrysene	0.0184	0.00500	"	0.0333		55.3		30-120			
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333		49.4		30-120			
Fluoranthene	0.0192	0.00500	"	0.0333		57.5		30-120			
Fluorene	0.0191	0.00500	"	0.0333		57.3		30-120			
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333		50.3		30-120			
Pyrene	0.0190	0.00500	"	0.0333		57.1		35-142			
1-Methylnaphthalene	0.0179	0.00500	"	0.0333		53.8		35-142			
2-Methylnaphthalene	0.0173	0.00500	"	0.0333		51.8		35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0184</i>		"	<i>0.0333</i>		<i>55.1</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0197</i>		"	<i>0.0333</i>		<i>59.0</i>		<i>40-150</i>			

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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHI0093 - EPA 5030 Soil MS

Matrix Spike (BHI0093-MS1)	Source: 2409031-01			Prepared & Analyzed: 09/05/24								
Acenaphthene	0.0136	0.00500	mg/kg	0.0333	ND	40.7	31-137					
Anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120					
Benzo (a) anthracene	0.0176	0.00500	"	0.0333	ND	52.7	30-120					
Benzo (a) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120					
Benzo (b) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.3	30-120					
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.7	30-120					
Chrysene	0.0152	0.00500	"	0.0333	ND	45.6	30-120					
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333	ND	49.4	30-120					
Fluoranthene	0.0198	0.00500	"	0.0333	ND	59.5	30-120					
Fluorene	0.0142	0.00500	"	0.0333	ND	42.5	30-120					
Indeno (1,2,3-cd) pyrene	0.0161	0.00500	"	0.0333	ND	48.2	30-120					
Pyrene	0.0179	0.00500	"	0.0333	ND	53.7	35-142					
1-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.5	15-130					
2-Methylnaphthalene	0.0286	0.00500	"	0.0333	ND	85.7	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0134</i>		<i>"</i>	<i>0.0333</i>		<i>40.1</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0164</i>		<i>"</i>	<i>0.0333</i>		<i>49.3</i>	<i>40-150</i>					

Matrix Spike Dup (BHI0093-MSD1)	Source: 2409031-01			Prepared & Analyzed: 09/05/24								
Acenaphthene	0.0139	0.00500	mg/kg	0.0333	ND	41.6	31-137	2.25	30			
Anthracene	0.0147	0.00500	"	0.0333	ND	44.1	30-120	3.76	30			
Benzo (a) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120	14.1	30			
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	13.2	30			
Benzo (b) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	8.03	30			
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120	29.6	30			
Chrysene	0.0139	0.00500	"	0.0333	ND	41.7	30-120	9.02	30			
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	7.97	30			
Fluoranthene	0.0148	0.00500	"	0.0333	ND	44.5	30-120	28.8	30			
Fluorene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	2.94	30			
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	16.5	30			
Pyrene	0.0143	0.00500	"	0.0333	ND	42.8	35-142	22.6	30			
1-Methylnaphthalene	0.0139	0.00500	"	0.0333	ND	41.8	15-130	1.77	50			
2-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.6	15-130	67.2	50			QR-02
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0144</i>		<i>"</i>	<i>0.0333</i>		<i>43.1</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0148</i>		<i>"</i>	<i>0.0333</i>		<i>44.3</i>	<i>40-150</i>					

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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

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

Batch BHI0102 - EPA 3050B

Blank (BHI0102-BLK1)

Prepared & Analyzed: 09/05/24

Boron ND 2.00 mg/L

LCS (BHI0102-BS1)

Prepared & Analyzed: 09/05/24

Boron 4.71 2.00 mg/L 5.00 94.2 80-120

Duplicate (BHI0102-DUP1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Boron 0.124 2.00 mg/L 0.136 9.07 20

Matrix Spike (BHI0102-MS1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Boron 4.99 2.00 mg/L 5.00 0.136 97.1 75-125

Matrix Spike Dup (BHI0102-MSD1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Boron 4.90 2.00 mg/L 5.00 0.136 95.3 75-125 1.81 25

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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 BHI0104 - EPA 3050B

Blank (BHI0104-BLK1)

Prepared & Analyzed: 09/05/24

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 (BHI0104-BS1)

Prepared: 09/05/24 Analyzed: 09/06/24

Arsenic	30.9	0.200	mg/kg wet	37.6		82.1	80-120
Barium	32.2	0.400	"	37.6		85.6	80-120
Cadmium	1.68	0.200	"	1.88		89.2	80-120
Copper	36.0	0.400	"	37.6		95.8	80-120
Lead	16.6	0.200	"	18.8		88.3	80-120
Nickel	35.5	0.400	"	37.6		94.4	80-120
Silver	1.67	0.0200	"	1.88		88.7	80-120
Zinc	35.8	0.400	"	37.6		95.2	80-120
Selenium	3.55	0.260	"	3.76		94.4	80-120

Duplicate (BHI0104-DUP1)

Source: 2409031-01

Prepared: 09/05/24 Analyzed: 09/06/24

Arsenic	1.41	0.200	mg/kg dry	1.51		7.20	20
Barium	45.1	0.400	"	49.9		10.1	20
Cadmium	0.118	0.200	"	0.119		0.763	20
Copper	2.69	0.400	"	2.81		4.44	20
Lead	4.29	0.200	"	4.38		2.20	20
Nickel	3.01	0.400	"	3.14		4.42	20
Silver	0.0257	0.0200	"	0.0286		10.7	20
Zinc	12.6	0.400	"	13.4		5.58	20
Selenium	ND	0.260	"	ND			20

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0104 - EPA 3050B

Matrix Spike (BHI0104-MS1)		Source: 2409031-01			Prepared: 09/05/24		Analyzed: 09/06/24	
Arsenic	34.9	0.181	mg/kg dry	39.1	1.51	85.4	75-125	
Barium	81.7	0.362	"	39.1	49.9	81.5	75-125	
Cadmium	1.96	0.181	"	1.95	0.119	94.0	75-125	
Copper	28.3	0.362	"	39.1	2.81	65.3	75-125	QM-05
Lead	22.2	0.181	"	19.5	4.38	91.2	75-125	
Nickel	28.8	0.362	"	39.1	3.14	65.8	75-125	QM-05
Silver	1.81	0.0181	"	1.95	0.0286	91.1	75-125	
Zinc	39.8	0.362	"	39.1	13.4	67.6	75-125	QM-05
Selenium	3.66	0.236	"	3.91	ND	93.6	75-125	

Matrix Spike Dup (BHI0104-MSD1)		Source: 2409031-01			Prepared: 09/05/24		Analyzed: 09/06/24			
Arsenic	33.9	0.200	mg/kg dry	41.2	1.51	78.6	75-125	2.86	25	
Barium	79.5	0.400	"	41.2	49.9	71.9	75-125	2.76	25	QM-05
Cadmium	1.91	0.200	"	2.06	0.119	87.2	75-125	2.13	25	
Copper	28.1	0.400	"	41.2	2.81	61.4	75-125	0.865	25	QM-05
Lead	21.4	0.200	"	20.6	4.38	82.8	75-125	3.59	25	
Nickel	28.6	0.400	"	41.2	3.14	61.8	75-125	0.953	25	QM-05
Silver	1.77	0.0200	"	2.06	0.0286	84.5	75-125	2.29	25	
Zinc	38.6	0.400	"	41.2	13.4	61.4	75-125	2.96	25	QM-05
Selenium	3.75	0.260	"	4.12	ND	91.0	75-125	2.47	25	

Batch BHI0105 - EPA 3050B

Blank (BHI0105-BLK1)					Prepared & Analyzed: 09/05/24	
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	"			

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0105 - EPA 3050B

LCS (BHI0105-BS1)

Prepared & Analyzed: 09/05/24

Arsenic	32.9	0.200	mg/kg wet	37.6		87.5	80-120			
Barium	32.7	0.400	"	37.6		87.1	80-120			
Cadmium	1.63	0.200	"	1.88		86.5	80-120			
Copper	34.6	0.400	"	37.6		92.0	80-120			
Lead	16.2	0.200	"	18.8		86.3	80-120			
Nickel	34.3	0.400	"	37.6		91.3	80-120			
Silver	1.66	0.0200	"	1.88		88.3	80-120			
Zinc	34.1	0.400	"	37.6		90.7	80-120			
Selenium	3.31	0.260	"	3.76		88.1	80-120			

Duplicate (BHI0105-DUP1)

Source: 2409013-01

Prepared & Analyzed: 09/05/24

Arsenic	4.29	0.200	mg/kg dry		6.37		39.0	20		QR-02
Barium	83.1	0.400	"		67.1		21.3	20		QR-02
Cadmium	0.268	0.200	"		0.284		5.62	20		
Copper	5.50	0.400	"		5.44		1.20	20		
Lead	7.38	0.200	"		7.46		1.05	20		
Nickel	6.16	0.400	"		5.93		3.79	20		
Silver	0.0399	0.0200	"		0.0302		27.5	20		QR-01
Zinc	22.3	0.400	"		21.4		4.08	20		
Selenium	ND	0.260	"		ND			20		

Matrix Spike (BHI0105-MS1)

Source: 2409013-01

Prepared & Analyzed: 09/05/24

Arsenic	47.3	0.200	mg/kg dry	48.7	6.37	84.0	75-125			
Barium	122	0.400	"	48.7	67.1	114	75-125			
Cadmium	2.52	0.200	"	2.44	0.284	91.8	75-125			
Copper	35.3	0.400	"	48.7	5.44	61.4	75-125			QM-05
Lead	29.3	0.200	"	24.4	7.46	89.6	75-125			
Nickel	35.5	0.400	"	48.7	5.93	60.6	75-125			QM-05
Silver	2.23	0.0200	"	2.44	0.0302	90.4	75-125			
Zinc	54.4	0.400	"	48.7	21.4	67.7	75-125			QM-05
Selenium	3.74	0.260	"	4.87	ND	76.7	75-125			

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55


Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0105 - EPA 3050B

Matrix Spike Dup (BHI0105-MSD1)	Source: 2409013-01			Prepared & Analyzed: 09/05/24							
Arsenic	44.9	0.200	mg/kg dry	48.0	6.37	80.4	75-125	5.15	25		
Barium	128	0.400	"	48.0	67.1	127	75-125	4.45	25		QM-05
Cadmium	2.41	0.200	"	2.40	0.284	88.8	75-125	4.25	25		
Copper	33.0	0.400	"	48.0	5.44	57.5	75-125	6.79	25		QM-05
Lead	28.6	0.200	"	24.0	7.46	88.1	75-125	2.41	25		
Nickel	34.1	0.400	"	48.0	5.93	58.7	75-125	3.98	25		QM-05
Silver	2.15	0.0200	"	2.40	0.0302	88.3	75-125	3.86	25		
Zinc	53.3	0.400	"	48.0	21.4	66.5	75-125	2.04	25		QM-05
Selenium	3.49	0.260	"	4.80	ND	72.8	75-125	6.81	25		QM-05

Summit Scientific



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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHI0095 - 3060A Mod

Blank (BHI0095-BLK1)

Prepared & Analyzed: 09/05/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHI0095-BS1)

Prepared & Analyzed: 09/05/24

Chromium, Hexavalent 25.6 0.30 mg/kg wet 24.5 105 80-120

Duplicate (BHI0095-DUP1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHI0095-MS1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Chromium, Hexavalent 27.0 0.30 mg/kg dry 26.2 ND 103 75-125

Matrix Spike Dup (BHI0095-MSD1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

Chromium, Hexavalent 27.5 0.30 mg/kg dry 26.2 ND 105 75-125 1.92 20

Summit Scientific

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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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

Summit Scientific

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

Batch BHI0079 - General Preparation

Blank (BHI0079-BLK1)

Prepared: 09/04/24 Analyzed: 09/05/24


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

LCS (BHI0079-BS1)

Prepared: 09/04/24 Analyzed: 09/05/24

Calcium	5.60	0.0500	mg/L wet	5.00		112	70-130			
Magnesium	5.05	0.0500	"	5.00		101	70-130			
Sodium	5.28	0.0500	"	5.00		106	70-130			

Summit Scientific



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
 Project Manager: Jacob Whritenour

Reported:
 09/10/24 10:55

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

Summit Scientific

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

Batch BHI0092 - General Preparation


Duplicate (BHI0092-DUP1)

Source: 2409031-01

Prepared & Analyzed: 09/05/24

% Solids	92.8		%		92.7			0.0388	20	
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Summit Scientific



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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

Summit Scientific

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

Batch BHI0081 - General Preparation

Blank (BHI0081-BLK1)

Prepared: 09/04/24 Analyzed: 09/05/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHI0081-BS1)

Prepared: 09/04/24 Analyzed: 09/05/24

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

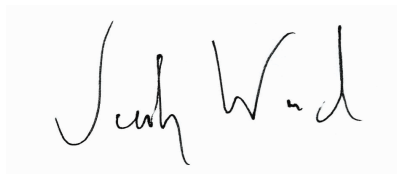
Duplicate (BHI0081-DUP1)

Source: 2409031-01

Prepared: 09/04/24 Analyzed: 09/05/24

Specific Conductance (EC) 0.700 0.0100 mmhos/cm 0.635 9.64 20

Summit Scientific



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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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

Summit Scientific

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

Batch BHI0083 - General Preparation

LCS (BHI0083-BS1)

Prepared: 09/04/24 Analyzed: 09/05/24

pH	9.23	pH Units	9.18	101	95-105
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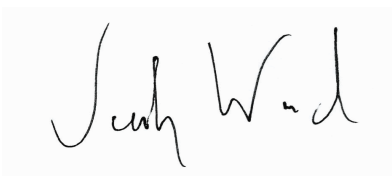
Duplicate (BHI0083-DUP1)

Source: 2409031-01

Prepared: 09/04/24 Analyzed: 09/05/24

pH	7.08	pH Units	7.12	0.563	20
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Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN
Project Manager: Jacob Whritenour

Reported:
09/10/24 10:55

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.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference