

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 18, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Hanscome C28-29D

Work Order #2409216

Enclosed are the results of analyses for samples received by Summit Scientific on 09/16/24 17:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS05-FL01-01@3'	2409216-01	Soil	09/16/24 11:54	09/16/24 17:36
SS06-FL01-01@3'	2409216-02	Soil	09/16/24 11:34	09/16/24 17:36
SS07-FL01-01@3'	2409216-03	Soil	09/16/24 11:43	09/16/24 17:36
SS08-FL01-01@1'	2409216-04	Soil	09/16/24 11:45	09/16/24 17:36
SS09-FL01-01@3'	2409216-05	Soil	09/16/24 11:47	09/16/24 17:36
FS02-FL01-01@4'	2409216-06	Soil	09/16/24 12:00	09/16/24 17:36
BKG06@3'	2409216-07	Soil	09/16/24 10:52	09/16/24 17:36
BKG06@4'	2409216-08	Soil	09/16/24 10:59	09/16/24 17:36

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

Lab ID	Page 1 of 1
2109216	

				Send Data To:				Send Invoice To:													
Client: Noble/Tasman				Project Manager: Jake Whritenour				Company: Noble													
Address: 6855 W. 119th Ave.				E-Mail: Jwhritenour@tasman-geo.com				Project Name/Location: Hanscome C28-29D													
City/State/Zip: Broomfield/CO/ 80020								AFE#:													
Phone: 937-554-5108				Project Name: Hanscome C28-29D				PO/Billing Codes:													
Sampler Name: Molly Parks				Project Number:				Contact: Keith Mclean													
				Preservative				Matrix				Analysis Requested				Special Instructions					
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	SS05-FL01-01 @ 3'	09-16-24	1154	2			X			X			X	X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	SS06-FL01-01 @ 3'		1134										X	X	X	X	X	X	X		
3	SS07-FL01-01 @ 3'		1143										X	X	X	X	X	X	X		
4	SS08-FL01-01 @ 1'		1145										X	X	X	X	X	X	X		
5	SS09-FL01-01 @ 3'		1147										X	X	X	X	X	X	X		
6	FS02-FL01-01 @ 4'		1200										X	X	X	X	X	X	X		
7	BK606 @ 3'		1052										X				X	X	X		
8	BK606 @ 4'		1059										X				X	X	X		
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by:	Date/Time:	Received by: Tasman Lock Box	Date/Time:	TAT Business Days	Field DO	Notes:	
MP	09-16-24 / 1503		09-16-24 / 1503	Same Day	X		Field EC
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day			Field ORP
Tasman Lock Box	09-16-24 / 1730		09-16-24 / 1734	2 Days			Field pH
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days			Field Temp.
				Standard		Field Turb.	
Temperature Upon Receipt: 73		Corrected Temperature: 70		IR gun #: 1		HNO3 lot #: 1	

S₂

Sample Receipt Checklist

S2 Work Order# 2409216Client: Narek Asman Client Project ID: Harcame C28-290Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.3Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 2CE
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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.				

Custodian Printed Name

Date/Time



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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS05-FL01-01@3'
2409216-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/17/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0466	117 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.87	78.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0218	65.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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SS05-FL01-01@3'
2409216-01 (Soil)

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Total Metals by EPA 6020B

Arsenic	3.55	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	76.4	0.400	"	"	"	"	"	"
Cadmium	0.214	0.200	"	"	"	"	"	"
Copper	4.56	0.400	"	"	"	"	"	"
Lead	7.20	0.200	"	"	"	"	"	"
Nickel	5.18	0.400	"	"	"	"	"	"
Silver	0.0651	0.0200	"	"	"	"	"	"
Zinc	20.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.9	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	14.0	0.0500	"	"	"	"	"	"	
Sodium	111	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.12	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
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SS05-FL01-01@3'
2409216-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.9	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS06-FL01-01@3'
2409216-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/16/24	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: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0438	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0405	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.85	70.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2409216-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0175	52.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS06-FL01-01@3'
2409216-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.08	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	84.4	0.400	"	"	"	"	"	"
Cadmium	0.218	0.200	"	"	"	"	"	"
Copper	4.96	0.400	"	"	"	"	"	"
Lead	8.10	0.200	"	"	"	"	"	"
Nickel	5.65	0.400	"	"	"	"	"	"
Silver	0.0474	0.0200	"	"	"	"	"	"
Zinc	21.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.8	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	9.29	0.0500	"	"	"	"	"	"	
Sodium	75.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.14	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 11:34**

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

Reported:
09/18/24 15:41

SS06-FL01-01@3'
2409216-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.9	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.964	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS07-FL01-01@3'
2409216-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/16/24	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: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	99.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.2	81.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS07-FL01-01@3'
2409216-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS07-FL01-01@3'
2409216-03 (Soil)

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Total Metals by EPA 6020B

Arsenic	3.45	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	54.3	0.400	"	"	"	"	"	"
Cadmium	0.255	0.200	"	"	"	"	"	"
Copper	4.54	0.400	"	"	"	"	"	"
Lead	5.97	0.200	"	"	"	"	"	"
Nickel	5.00	0.400	"	"	"	"	"	"
Silver	0.0216	0.0200	"	"	"	"	"	"
Zinc	18.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.6	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	14.9	0.0500	"	"	"	"	"	"	
Sodium	106	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.62	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 11:43**

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 - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS07-FL01-01@3'
2409216-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.2	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.07		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS08-FL01-01@1'
2409216-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/16/24	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: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0488	122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.06	72.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS08-FL01-01@1'
2409216-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0203	60.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS08-FL01-01@1'
2409216-04 (Soil)

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Total Metals by EPA 6020B

Arsenic	2.73	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	56.2	0.400	"	"	"	"	"	"
Cadmium	0.206	0.200	"	"	"	"	"	"
Copper	4.76	0.400	"	"	"	"	"	"
Lead	7.12	0.200	"	"	"	"	"	"
Nickel	4.17	0.400	"	"	"	"	"	"
Silver	0.0291	0.0200	"	"	"	"	"	"
Zinc	19.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	159	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	55.6	0.0500	"	"	"	"	"	"	
Sodium	238	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.14	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 11:45**

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS08-FL01-01@1'
2409216-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	92.2	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	3.12	0.0100		mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.62			pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS09-FL01-01@3'
2409216-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/16/24	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: **09/16/24 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0456	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.11	64.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS09-FL01-01@3'
2409216-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00512	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00560	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.00569	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0115	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0102	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0195	58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 11:47**

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS09-FL01-01@3'
2409216-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.20	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	62.2	0.400	"	"	"	"	"	"
Cadmium	0.227	0.200	"	"	"	"	"	"
Copper	4.96	0.400	"	"	"	"	"	"
Lead	8.00	0.200	"	"	"	"	"	"
Nickel	4.60	0.400	"	"	"	"	"	"
Silver	0.0340	0.0200	"	"	"	"	"	"
Zinc	20.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	285	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	92.8	0.0500	"	"	"	"	"	"	
Sodium	414	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.45	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 11:47**

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 - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

SS09-FL01-01@3'
2409216-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.6	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.20	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.52		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

FS02-FL01-01@4'
2409216-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0518	09/16/24	09/16/24	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: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0418	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0519	09/16/24	09/16/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.30	66.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

FS02-FL01-01@4'
2409216-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0527	09/17/24	09/17/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0195	58.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

FS02-FL01-01@4'
2409216-06 (Soil)

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Total Metals by EPA 6020B

Arsenic	3.35	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B
Barium	90.7	0.400	"	"	"	"	"	"
Cadmium	0.240	0.200	"	"	"	"	"	"
Copper	4.79	0.400	"	"	"	"	"	"
Lead	8.06	0.200	"	"	"	"	"	"
Nickel	5.78	0.400	"	"	"	"	"	"
Silver	0.0575	0.0200	"	"	"	"	"	"
Zinc	21.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	138	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	49.9	0.0500	"	"	"	"	"	"	
Sodium	370	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.86	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 12:00**

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 - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

FS02-FL01-01@4'
2409216-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.3	%	1	BHI0523	09/17/24	09/17/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.83	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

BKG06@3'
2409216-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	3.45	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B	
Barium	83.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.04	0.400	"	"	"	"	"	"	
Lead	6.97	0.200	"	"	"	"	"	"	
Nickel	5.56	0.400	"	"	"	"	"	"	
Silver	0.0464	0.0200	"	"	"	"	"	"	
Zinc	19.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	544	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	143	0.0500	"	"	"	"	"	"	
Sodium	201	0.0500	"	"	"	"	"	"	

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

BKG06@3'
2409216-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.98	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BHI0523	09/17/24	09/17/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.942	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

BKG06@4'
2409216-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0537	09/17/24	09/17/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	4.93	0.200	mg/kg dry	1	BHI0530	09/17/24	09/17/24	EPA 6020B	
Barium	171	0.400	"	"	"	"	"	"	
Cadmium	0.279	0.200	"	"	"	"	"	"	
Copper	5.77	0.400	"	"	"	"	"	"	
Lead	6.35	0.200	"	"	"	"	"	"	
Nickel	7.40	0.400	"	"	"	"	"	"	
Silver	0.0628	0.0200	"	"	"	"	"	"	
Zinc	18.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0540	09/17/24	09/17/24	EPA 7196A	

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

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	126	0.0500	mg/L dry	1	BHI0516	09/16/24	09/17/24	EPA 6020B	
Magnesium	26.0	0.0500	"	"	"	"	"	"	
Sodium	282	0.0500	"	"	"	"	"	"	

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Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

BKG06@4'
2409216-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.98	0.00100	units	1	BHI0579	09/18/24	09/18/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.2		%	1	BHI0523	09/17/24	09/17/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.52	0.0100	mmhos/cm	1	BHI0517	09/16/24	09/17/24	EPA 120.1	

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

Date Sampled: **09/16/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42		pH Units	1	BHI0520	09/16/24	09/17/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHI0518 - EPA 5030 Soil MS

Blank (BHI0518-BLK1)

Prepared & Analyzed: 09/16/24

Benzene	ND	0.0020	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.010	"
1,2,4-Trimethylbenzene	ND	0.0050	"
1,3,5-Trimethylbenzene	ND	0.0050	"
Naphthalene	ND	0.0038	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0414	"	0.0400	104	50-150
Surrogate: Toluene-d8	0.0406	"	0.0400	101	50-150
Surrogate: 4-Bromofluorobenzene	0.0390	"	0.0400	97.6	50-150

LCS (BHI0518-BS1)

Prepared & Analyzed: 09/16/24

Benzene	0.0952	0.0020	mg/kg	0.100	95.2	70-130
Toluene	0.0944	0.0050	"	0.100	94.4	70-130
Ethylbenzene	0.0951	0.0050	"	0.100	95.1	70-130
m,p-Xylene	0.185	0.010	"	0.200	92.4	70-130
o-Xylene	0.0918	0.0050	"	0.100	91.8	70-130
1,2,4-Trimethylbenzene	0.0910	0.0050	"	0.100	91.0	70-130
1,3,5-Trimethylbenzene	0.0915	0.0050	"	0.100	91.5	70-130
Naphthalene	0.0856	0.0038	"	0.100	85.6	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0425	"	0.0400	106	50-150
Surrogate: Toluene-d8	0.0401	"	0.0400	100	50-150
Surrogate: 4-Bromofluorobenzene	0.0379	"	0.0400	94.7	50-150

Matrix Spike (BHI0518-MS1)

Source: 2409216-01

Prepared & Analyzed: 09/16/24

Benzene	0.0914	0.0020	mg/kg	0.100	ND	91.4	70-130
Toluene	0.0908	0.0050	"	0.100	ND	90.8	70-130
Ethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130
m,p-Xylene	0.180	0.010	"	0.200	ND	89.9	70-130
o-Xylene	0.0881	0.0050	"	0.100	ND	88.1	70-130
1,2,4-Trimethylbenzene	0.0870	0.0050	"	0.100	ND	87.0	70-130
1,3,5-Trimethylbenzene	0.0887	0.0050	"	0.100	ND	88.7	70-130
Naphthalene	0.0796	0.0038	"	0.100	ND	79.6	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0454	"	0.0400	114	50-150
Surrogate: Toluene-d8	0.0408	"	0.0400	102	50-150
Surrogate: 4-Bromofluorobenzene	0.0392	"	0.0400	98.0	50-150

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

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

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

Batch BHI0518 - EPA 5030 Soil MS

Matrix Spike Dup (BHI0518-MSD1)	Source: 2409216-01			Prepared & Analyzed: 09/16/24						
Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	70-130	8.52	30	
Toluene	0.0819	0.0050	"	0.100	ND	81.9	70-130	10.2	30	
Ethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	8.31	30	
m,p-Xylene	0.169	0.010	"	0.200	ND	84.3	70-130	6.51	30	
o-Xylene	0.0827	0.0050	"	0.100	ND	82.7	70-130	6.29	30	
1,2,4-Trimethylbenzene	0.0808	0.0050	"	0.100	ND	80.8	70-130	7.44	30	
1,3,5-Trimethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130	7.76	30	
Naphthalene	0.0763	0.0038	"	0.100	ND	76.3	70-130	4.23	30	
Surrogate: 1,2-Dichloroethane-d4	0.0460		"	0.0400		115	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

Summit Scientific

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHI0519 - EPA 3550A

Blank (BHI0519-BLK1)

Prepared & Analyzed: 09/16/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.4		"	12.5		99.3	30-150			

LCS (BHI0519-BS1)

Prepared & Analyzed: 09/16/24

C10-C28 (DRO)	510	50	mg/kg	500		102	70-130			
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

Matrix Spike (BHI0519-MS1)

Source: 2409216-01

Prepared & Analyzed: 09/16/24

C10-C28 (DRO)	514	50	mg/kg	500	ND	103	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.5	30-150			

Matrix Spike Dup (BHI0519-MSD1)

Source: 2409216-01

Prepared & Analyzed: 09/16/24

C10-C28 (DRO)	510	50	mg/kg	500	ND	102	70-130	0.653	20	
Surrogate: o-Terphenyl	10.3		"	12.5		82.3	30-150			

Summit Scientific

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHI0527 - EPA 5030 Soil MS

Blank (BHI0527-BLK1)

Prepared & Analyzed: 09/17/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0263		"	0.0333		78.9	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.5	40-150			

LCS (BHI0527-BS1)

Prepared & Analyzed: 09/17/24

Acenaphthene	0.0242	0.00500	mg/kg	0.0333		72.6	31-137			
Anthracene	0.0240	0.00500	"	0.0333		71.9	30-120			
Benzo (a) anthracene	0.0246	0.00500	"	0.0333		73.9	30-120			
Benzo (a) pyrene	0.0226	0.00500	"	0.0333		67.9	30-120			
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333		64.8	30-120			
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333		66.8	30-120			
Chrysene	0.0247	0.00500	"	0.0333		74.2	30-120			
Dibenz (a,h) anthracene	0.0189	0.00500	"	0.0333		56.7	30-120			
Fluoranthene	0.0247	0.00500	"	0.0333		74.2	30-120			
Fluorene	0.0243	0.00500	"	0.0333		72.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333		57.2	30-120			
Pyrene	0.0226	0.00500	"	0.0333		67.8	35-142			
1-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.3	35-142			
2-Methylnaphthalene	0.0231	0.00500	"	0.0333		69.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0236		"	0.0333		70.9	40-150			
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.8	40-150			

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Tasman Geosciences
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Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHI0527 - EPA 5030 Soil MS

Matrix Spike (BHI0527-MS1)

Source: 2409209-01

Prepared & Analyzed: 09/17/24

Acenaphthene	0.0193	0.00500	mg/kg	0.0333	ND	57.8	31-137				
Anthracene	0.0184	0.00500	"	0.0333	ND	55.3	30-120				
Benzo (a) anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120				
Benzo (a) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120				
Benzo (b) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.5	30-120				
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.2	30-120				
Chrysene	0.0185	0.00500	"	0.0333	ND	55.5	30-120				
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120				
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.4	30-120				
Fluorene	0.0200	0.00500	"	0.0333	ND	60.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.1	30-120				
Pyrene	0.0208	0.00500	"	0.0333	ND	62.4	35-142				
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130				
2-Methylnaphthalene	0.0179	0.00500	"	0.0333	ND	53.7	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0187		"	0.0333		56.2	40-150				
Surrogate: Fluoranthene-d10	0.0183		"	0.0333		55.0	40-150				

Matrix Spike Dup (BHI0527-MSD1)

Source: 2409209-01

Prepared & Analyzed: 09/17/24

Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.4	31-137	2.48	30
Anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	2.55	30
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.5	30-120	2.19	30
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	1.12	30
Benzo (b) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120	1.73	30
Benzo (k) fluoranthene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	1.18	30
Chrysene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	0.240	30
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	6.87	30
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	2.99	30
Fluorene	0.0188	0.00500	"	0.0333	ND	56.4	30-120	6.34	30
Indeno (1,2,3-cd) pyrene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	6.58	30
Pyrene	0.0193	0.00500	"	0.0333	ND	57.9	35-142	7.50	30
1-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.2	15-130	7.62	50
2-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.8	15-130	7.45	50
Surrogate: 2-Methylnaphthalene-d10	0.0165		"	0.0333		49.6	40-150		
Surrogate: Fluoranthene-d10	0.0174		"	0.0333		52.1	40-150		

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

Project: Noble - Hanscome C28-29D

Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

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

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

Batch BHI0537 - EPA 3050B

Blank (BHI0537-BLK1)

Prepared & Analyzed: 09/17/24

Boron ND 2.00 mg/L

LCS (BHI0537-BS1)

Prepared: 09/17/24 Analyzed: 09/18/24

Boron 5.55 2.00 mg/L 5.00 111 80-120

Duplicate (BHI0537-DUP1)

Source: 2409216-01

Prepared & Analyzed: 09/17/24

Boron 0.516 2.00 mg/L 0.471 9.13 20

Matrix Spike (BHI0537-MS1)

Source: 2409216-01

Prepared & Analyzed: 09/17/24

Boron 5.47 2.00 mg/L 5.04 0.471 99.1 75-125

Matrix Spike Dup (BHI0537-MSD1)

Source: 2409216-01

Prepared & Analyzed: 09/17/24

Boron 5.63 2.00 mg/L 5.04 0.471 102 75-125 3.00 25

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0530 - EPA 3050B

Blank (BHI0530-BLK1)

Prepared & Analyzed: 09/17/24

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 (BHI0530-BS1)

Prepared & Analyzed: 09/17/24

Arsenic	36.7	0.200	mg/kg wet	38.8	94.7	80-120
Barium	38.0	0.400	"	38.8	98.0	80-120
Cadmium	1.96	0.200	"	1.94	101	80-120
Copper	42.0	0.400	"	38.8	108	80-120
Lead	19.3	0.200	"	19.4	99.7	80-120
Nickel	41.5	0.400	"	38.8	107	80-120
Silver	1.95	0.0200	"	1.94	101	80-120
Zinc	41.9	0.400	"	38.8	108	80-120
Selenium	3.83	0.260	"	3.88	98.8	80-120

Duplicate (BHI0530-DUP1)

Source: 2409216-01

Prepared & Analyzed: 09/17/24

Arsenic	3.70	0.200	mg/kg dry	3.55	4.22	20
Barium	70.6	0.400	"	76.4	7.91	20
Cadmium	0.218	0.200	"	0.214	1.92	20
Copper	4.51	0.400	"	4.56	1.09	20
Lead	7.39	0.200	"	7.20	2.71	20
Nickel	5.07	0.400	"	5.18	2.14	20
Silver	0.0514	0.0200	"	0.0651	23.5	20
Zinc	20.3	0.400	"	20.8	2.16	20
Selenium	ND	0.260	"	ND		20

QR-01

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHI0530 - EPA 3050B

Matrix Spike (BHI0530-MS1)			Source: 2409216-01		Prepared & Analyzed: 09/17/24					
Arsenic	42.8	0.200	mg/kg dry	43.0	3.55	91.3	75-125			
Barium	114	0.400	"	43.0	76.4	88.6	75-125			
Cadmium	2.34	0.200	"	2.15	0.214	99.0	75-125			
Copper	28.9	0.400	"	43.0	4.56	56.5	75-125			QM-05
Lead	27.4	0.200	"	21.5	7.20	94.1	75-125			
Nickel	29.8	0.400	"	43.0	5.18	57.2	75-125			QM-05
Silver	2.11	0.0200	"	2.15	0.0651	95.4	75-125			
Zinc	45.8	0.400	"	43.0	20.8	58.3	75-125			QM-05
Selenium	3.98	0.260	"	4.30	ND	92.6	75-125			

Matrix Spike Dup (BHI0530-MSD1)			Source: 2409216-01		Prepared & Analyzed: 09/17/24					
Arsenic	43.4	0.200	mg/kg dry	42.7	3.55	93.4	75-125	1.40	25	
Barium	106	0.400	"	42.7	76.4	70.1	75-125	7.41	25	QM-05
Cadmium	2.38	0.200	"	2.13	0.214	101	75-125	1.51	25	
Copper	28.9	0.400	"	42.7	4.56	57.0	75-125	0.0496	25	QM-05
Lead	27.8	0.200	"	21.3	7.20	96.8	75-125	1.56	25	
Nickel	29.8	0.400	"	42.7	5.18	57.8	75-125	0.294	25	QM-05
Silver	2.16	0.0200	"	2.13	0.0651	98.0	75-125	1.91	25	
Zinc	45.8	0.400	"	42.7	20.8	58.6	75-125	0.143	25	QM-05
Selenium	4.03	0.260	"	4.27	ND	94.6	75-125	1.33	25	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHI0540 - 3060A Mod

Blank (BHI0540-BLK1)

Prepared & Analyzed: 09/17/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHI0540-BS1)

Prepared & Analyzed: 09/17/24

Chromium, Hexavalent 26.0 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BHI0540-DUP1)

Source: 2409181-01

Prepared & Analyzed: 09/17/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHI0540-MS1)

Source: 2409181-01

Prepared & Analyzed: 09/17/24

Chromium, Hexavalent 27.0 0.30 mg/kg dry 26.3 ND 103 75-125

Matrix Spike Dup (BHI0540-MSD1)

Source: 2409181-01

Prepared & Analyzed: 09/17/24

Chromium, Hexavalent 27.7 0.30 mg/kg dry 26.3 ND 105 75-125 2.50 20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

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

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

Batch BHI0516 - General Preparation

Blank (BHI0516-BLK1)

Prepared: 09/16/24 Analyzed: 09/17/24

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

LCS (BHI0516-BS1)

Prepared: 09/16/24 Analyzed: 09/17/24

Calcium	5.41	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.43	0.0500	"	5.00	109	70-130
Sodium	5.36	0.0500	"	5.00	107	70-130

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D

Project Number: UWRWE-A3226-ABN

Project Manager: Jacob Whritenour

Reported:

09/18/24 15:41

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

Summit Scientific

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

Batch BHI0523 - General Preparation

Duplicate (BHI0523-DUP1)		Source: 2409216-01			Prepared & Analyzed: 09/17/24					
% Solids	90.0		%		90.9		1.02		20	

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

Project: Noble - Hanscome C28-29D
Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

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

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

Batch BHI0517 - General Preparation

Blank (BHI0517-BLK1)

Prepared: 09/16/24 Analyzed: 09/17/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHI0517-BS1)

Prepared: 09/16/24 Analyzed: 09/17/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BHI0517-DUP1)

Source: 2409177-01

Prepared: 09/16/24 Analyzed: 09/17/24

Specific Conductance (EC) 1.74 0.0100 mmhos/cm 1.77 1.76 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D

Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

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

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

Batch BHI0520 - General Preparation

LCS (BHI0520-BS1)

Prepared: 09/16/24 Analyzed: 09/17/24

pH	9.08	pH Units	9.18	98.9	95-105
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Duplicate (BHI0520-DUP1)

Source: 2409177-01

Prepared: 09/16/24 Analyzed: 09/17/24

pH	8.27	pH Units	8.29	0.242	20
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Summit Scientific

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

Project: Noble - Hanscome C28-29D

Project Number: UWRWE-A3226-ABN
Project Manager: Jacob Whritenour

Reported:
09/18/24 15:41

Notes and Definitions

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